Cross border trade in electricity under EU/EEA and WTO law

A Case Study: Iceland

Master of Law

January 2021
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Útdráttur

Milliríkjaviðskipti með rafmagn: Alþjóðaviðskiptastofnunin (WTO), Evrópusambandið (EU) og samningurinn um evrópska efnhagssvæðið (EEA).

Alþjóðaviðskipti hafa aukist jafnt og þétt síðustu áratugina og hafa verið einn helsti drifkraftur hnattvæðingar. Alþjóðlegir og svæðisbundnir samningar hafa átt stóran þátt í að auðvelda milliríkjaviðskipti með setningu reglna og aðferða til að stýra þeim.

Alþjóðaviðskipti með raforku hafa verið eftirbátar viðskipta með aðrar vörur og þjónustu af ýmsum ástæðum þrátt fyrir verulegan ávinning sem af þeim geta hlotist. Aukin alþjóðaviðskipti með rafmagn byggð á stórum flutningskerfum yfir landamæri hafa í för með sér umtalsverðan ávinning fyrir neytendur, bæta orkuöryggi og geta leitt til þess að verulega dregur úr kolefnisspori raforkugeirans. Stór hluti kostnaðar við raforkuflutning og raforkuframleiðslu er fastur. Stærri raforkuflutningskerfi, sérstaklega sem ná yfir tímabelti, nýta auðlindir betur. Einnig er hægt að nýta afskekktar endurnýjanlegar auðlindir með raforkuflutningi um langan veg.

Undanfarna áratugi hafa orðið miklar tækniframfarir og nú eru engar óyfirstíganlegar tæknilegar hindranir fyrir flutningi raforku um langar vegalengdir. Hins vegar eru nokkrar framkvæmdarlegar, lagalegar og efnahagslegar áskoranir varðandi raforkuviðskipti yfir landamæri.

Ritgerð þessi miðar að því að greina alþjóðlegan lagaramma sem framleiðandi endurnýjanlegrar orku á Íslandi stendur frammi fyrir gagnvart útflutningi á raforku til Evrópu, með því að horfa í gegnum linsu Alþjóðaviðskiptastofnunarinnar, regluverks Evrópusambandsins (ESB), samningsins um Evrópska efnahagssvæðið (EES), íslensk og bresk lög. Einnig verður samspil og samræmi þessara lagaramma skoðað.

Sérstaklega verður kannaður réttur og skilyrði til að fá aðgang að flutningsneti raforku á Íslandi fyrir samtengingu við annað aðildarríki WTO. Sérstakt dæmi um það verður samtenging milli Íslands og Bretlands.

Abstract

Cross border trade in electricity: The WTO, the EU, and the EEA.

International trade has been steadily increasing over the last decades and has been one of the prime movers of globalization. International and regional agreements have been instrumental in facilitating the trade flows by setting up rules and mechanisms to govern these transactions.

International trade in electricity has been much less than in other goods and services for various reasons, despite its significant benefits. Increased international trade in electricity through the implementation of large-scale cross border projects brings considerable consumer benefits, improves energy supply security, and has the potential of significantly reducing carbon use of the electricity sector. Large parts of the electricity grid and electricity generation costs are fixed. Larger grids, especially that extend over time zones, make better use of resources and are more economical. Remote renewable resources can also be accessed with the use of long-distance electricity transmission.

Over the last few decades, advances in technology have progressed and now there are no insurmountable technical barriers to transmission of electricity over long distances. However, there are several practical, legal, and economic challenges concerning cross-border trade in electricity.

This thesis aims to analyse the international legal framework facing a seller of renewable energy in Iceland looking at exporting electricity to Europe by looking through the lens of the law and policy of the World Trade Organization (WTO), the framework of the European Union (EU), the agreement on the European Economic Area (EEA), Icelandic and UK law. The interaction and compatibility of these legal frameworks will also be considered.

In particular, the right and conditions to access the national electricity transmission grid in Iceland for an interconnector to another WTO member country will be explored. A case study will be an interconnector between Iceland and the UK.

Abbreviations

AC	Alternating Current
ACER	The European Agency for the Cooperation of Energy Regulators
CfD	Contract for Difference
DC	Direct Current
DCC	The Department of Energy and Climate Change (UK)
EC	European Communities or European Commission
ECHR	European Convention on Human Rights
ECJ	European Court of Justice
ECT	Energy Charter Treaty
EEA	European Economic Area
EEX	European Energy Exchange (EEX) AG is a central European electric power exchange located in Leipzig, Germany
EMR	Electricity Market Reform (UK)
ENTSO-e	European Transmission System Operators for electricity
EU	European Union
EV	Electric Vehicle
FIT	Feed-in-Tariff
GATS	General Agreement of Trade in Services
GATT	General Agreement on Tariffs and Trade
GEMA	The Gas and Electricity Authority (GEMA)
GW	Gigawatt
GWh	Gigawatt hour
HS	Harmonised Commodity Description and Coding System
HVDC	High-Voltage Direct Current
Hz	Hertz
IEA	International Energy Agency
IPP	Independent Power Producers

Abbreviations

ITPR	Integrated Transmission Planning and Regulation (UK)
kV	Kilovolt
kWh	Kilowatt hour
MFN	Most Favoured Nation
MHz	Megahertz
MW	Megawatt
MWh	Megawatt hour
NAFTA	North American Free Trade Agreement
Nord Pool	Power exchange jointly owned by TSOs from Denmark, Finland, Norway and Sweden
OECD	Organisation for Economic Cooperation and Development
Ofgem	The Office of Gas and Electricity Markets (UK)
PEEREA	The Protocol on Energy Efficiency and Related Environmental Aspects
RAB	Regulatory Asset Base
RES	Renewable Energy Sources
RTA	Regional Trade Agreement
SCM Agr.	The Agreement on Subsidies and Countervailing Measures
STE	State owned Enterprise
TAO	Transmission Asset Owner
TBT	Technical Barriers to Trade
TPA	Third Party Access
TRIMs	Agreement on Trade-Related Investment Measures
TSO	Transmission System Operator
TWh	Terawatt hour
WTO	World Trade Organisation

List of Key Concepts as applied in this thesis

Concept	Description
Access to Grid	The permission to physically connect to an electricity grid.
Balancing Energy/power	Balancing power/energy is used by transmission system operators to balance unplanned fluctuations in the production of electricity or the energy load. To always have enough capacity available, balancing energy is tendered via a procurement platform and provided by qualified supplier.
Bilateral Investment Treaty (BIT)	An agreement made between two countries containing reciprocal undertakings for the promotion and protection of private investments made by nationals of the signatories in each other's territories.
Capacity Allocation	As a transmission link has finite capacity, it must be allocated to the users by certain rules.
Capacity Market (UK)	The Capacity Market is a mechanism introduced by the Government to ensure that electricity supply continues to meet demand as more volatile and unpredictable renewable generation plants come on stream.
Climate Change	A change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels.
Commission	The (European) Commission is the EU's politically independent executive arm. It is alone responsible for drawing up proposals for new European legislation, and it implements the decisions of the European Parliament and the Council of the EU.
Congestion	Congestion is when a segment of the transmission grid becomes overloaded with electric power. Overloading can cause wires to retain heat, stretch and come in contact with other wires or structures. This can lead to instability, reduced system integrity and possibly faults.
Congestion Management	Congestion management uses price mechanisms and market forces to manage electricity supply and demand.
Consumer Surplus	Consumer surplus is an economic measurement of consumer benefits. Consumer surplus happens when the price that consumers pay for a product or service is less than the price they are willing to pay. It is a measure of the additional benefit that consumers receive because they are paying less for something than what they were willing to pay.

List of Key Concepts as applied in this thesis

Concept	Description
Contract for Difference	Is a long-term contract between an electricity generator and Low Carbon Contracts Company (LCCC). The contract enables the generator to stabilise its revenues at a pre-agreed level (the Strike Price) for the duration of the contract. Under the CfD, payments can flow from LCCC to the generator, and vice versa. Under the CfDs, when the market price for electricity generated by a CfD Generator (the reference price) is below the Strike Price set out in the contract, payments are made by LCCC to the CfD Generator to make up the difference. However, when the reference price is above the Strike Price, the CfD Generator pays LCCC the difference.
Council	The European Council defines the EU's overall political direction and priorities. It is not one of the EU's legislating institutions, so does not negotiate or adopt EU laws. Instead, it sets the EU's policy agenda, traditionally by adopting 'conclusions' during European Council meetings which identify issues of concern and actions to take.
Dispatch of Electricity	Since electricity cannot be stored in power lines, the entity operating the power grid must continuously adjust the output of its power plants to meet electricity demand. This process is called the "dispatch" of power plants.
Distribution	Electric power distribution is the final stage in the delivery of electric power; it carries electricity from the transmission system to individual consumers.
Electric Power Exchange	Is a trading center where utilities, power marketers, and other electricity suppliers submit price and quantity bids to sell energy or services, and potential customers submit offers to purchase energy or services.
Electrical Grid	An electrical grid, electric grid or power grid, is an interconnected network for delivering electricity from producers to consumers.
ETS Trading Scheme	The aim of the EU Emissions Trading System (EU ETS) is to help EU Member States achieve their commitments to limit or reduce greenhouse gas emissions in a cost-effective way. Allowing participating companies to buy or sell emission allowances means that emission cuts can be achieved at least cost.

List of Key Concepts as applied in this thesis

Concept	Description
Feed-in-Tariff (FIT)	A feed-in tariff (FIT) is a policy mechanism designed to accelerate investment in renewable energy technologies by offering long-term contracts to renewable energy producers. Their goal is to offer cost-based compensation to renewable energy producers, providing price certainty and long-term contracts that help finance renewable energy investments.
Four Freedoms (EU)	The framework to guarantee the free movement of goods, capital, services, and labour within the EU, known collectively as the "four freedoms".
Generation	Electricity generation is defined as electricity generated from fossil fuels, nuclear power plants, hydro power plants, geothermal systems, solar panels, biofuels, wind, etc.
Gray Electricity	Refers to energy produced from polluting sources as a contrast to green energy from renewable, non-polluting sources.
Green Electricity	Electricity that is produced in a way that protects the natural environment, for example by using wind, water, or the sun.
Grid Connection	Physical connection to a grid, usually unidirectional point to multipoint links.
Hull Formula	Refers to full compensation; that is to say, full compensation for losses suffered and lost profits. Typically, BITs adopting this standard do not make a distinction between lawful and unlawful expropriation.
HVDC Conversion	An HVDC converter converts electric power from high voltage alternating current (AC) to high-voltage direct current (HVDC), or vice versa. HVDC is used as an alternative to AC for transmitting electrical energy over long distances or between AC power systems of different frequencies.
Interconnectors	An interconnector is equipment which enables energy to flow between networks. The term is used more specifically to refer to international connections between electricity and natural gas networks.
Internal Market (EU)	The EU's internal energy market is designed to enable the harmonised, free flow and tariff-free trading of gas and electricity through an agreed-upon set of rules on issues ranging from state aid to clean energy deployment.

List of Key Concepts as applied in this thesis

Concept	Description
Joint Committee Decision (JCD)	The EEA Joint Committee (EEA JC) is responsible for the management of the EEA Agreement and is forum in which views are exchanged and decisions are taken by consensus to incorporate EU legislation into the EEA Agreement.
Most Favoured Nation	A most-favoured-nation (MFN) clause requires a country to provide any concessions, privileges, or immunities granted to one nation in a trade agreement to all other World Trade Organization member countries. Although its name implies favouritism toward another nation, it denotes the equal treatment of all countries.
National Regulators / National Regulatory Authority	Is a public authority or government agency responsible for exercising autonomous authority over some area of human activity in a regulatory or supervisory capacity and is responsible for issuing licenses, controlling prices, resolving disputes, etc.
National Treatment	The principle of giving others of different nationality the same treatment as one's own nationals.
Negotiated Access	Under negotiated access, competitors must negotiate the terms of access directly with incumbents. Negotiation must be non-discriminatory and undertaken in good faith, with potential disputes subject to an independent settlement procedure.
Network Codes (EU)	A network code (NC) is a set of technical rules enabling the development of the internal energy market in Europe. The NCs address the major barriers impeding the cross-border flow of electricity and gas, transforming a mere patchwork of national energy markets into a single European energy market. The NCs guide the integrated operation of cross-border energy networks to allow for increasing competitiveness, more cost-efficient integration of renewables and a secure supply of energy at prices that are affordable for the European consumers.
Producer Surplus	Producer surplus is the difference between how much a person would be willing to accept for given quantity of a good versus how much they can receive by selling the good at the market price. The difference or surplus amount is the benefit the producer receives for selling the good in the market. A producer surplus is generated by market prices in excess of the lowest price producers would otherwise be willing to accept for their goods.

List of Key Concepts as applied in this thesis

Concept	Description
Projects of Common Interest	Projects of Common Interest (PCIs) is a category of projects that the European Union has identified as a key priority for interconnecting Europe's energy system infrastructure. These projects are eligible to receive public funds. The PCI list is reviewed every two years.
Regulated Access	Under regulated access, the government sets the prices and terms by which potential new competitors can obtain access to essential networks.
Regulatory Asset Base	The regulated assets of the TSO, the value of which is determined by reference to the net capital invested in assets as calculated by reference to applicable regulations and on the basis of which transmission tariffs are determined by the regulator.
Schedules (WTO)	WTO schedules of concessions, often referred to as “goods schedules”, are legal instruments that form an integral part of the General Agreement on Tariffs and Trade (GATT) and the WTO Agreement. These schedules describe the treatment a WTO member must provide to traded goods of other WTO members.
Services of General Economic Interest	Are economic activities that public authorities identify as being of particular importance to citizens and that would not be supplied (or would be supplied under different conditions) if there were no public intervention.
Single Buyer	In the single buyer model, independent power producers (IPPs) generate electricity and sell it to the “single buyer”, often the national power company or the TSO. There are no access arrangements and no direct trading between IPPs and the distributors.
Smart Grid	The digital technology that allows for two-way communication between the utility and its customers, and the sensing along the transmission lines.
Supply	Sales, metering, billing and other services provided to the final consumers.
Tariff (electricity)	The charges levied on the user of electricity for the transmission, distribution and consumption of electricity.
Tariff (customs)	A tax paid on goods imported into a country.

List of Key Concepts as applied in this thesis

Concept	Description
Third Party Access	Third party access policies require owners of natural monopoly infrastructure facilities to grant access to those facilities to parties other than their own customers, usually competitors in the provision of the relevant services, on commercial terms comparable to those that would apply in a competitive market
Transmission	Electrical power transmission involves the bulk movement of electrical energy at a high voltage from a generating site, such as a power station or power plant, to an electrical substation where voltage is transformed and distributed to consumers or other substations.
Transmission System Operator	A Transmission System Operator (TSO) is an entity entrusted with overseeing the transport of energy in the form of natural gas or electricity on a national or regional level, using fixed infrastructure. The term is defined by the European Commission.
Unbundling	Within the electricity sector, unbundling is a type of structural reform that involves the separation of core functions performed by power utilities or power companies. Vertical unbundling is the separation of generation, transmission, distribution and (sometimes) retail functions.
W/120 Classification System	The services sectoral classification list (W/120) is a comprehensive list of services sectors and sub-sectors covered under the GATS. It was compiled by the WTO in July 1991 and its purpose was to facilitate the Uruguay Round negotiations, ensuring cross-country comparability and consistency of the commitments undertaken. The 160 sub-sectors are defined as aggregate of the more detailed categories contained in the United Nations provisional Central Product Classification (CPC).
Welfare Gain (net)	A net welfare gain refers to the impact of a government policy, or a decision by firms, on total economic welfare, considering the gains, less any losses. While the concept of 'welfare' can have several meanings in economics, it corresponds closely to the idea of well-being.

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1. Introduction

The author of this thesis has educational and practical background in engineering, business and finance and has followed with great interest the discussion and development of a potential interconnection of the Icelandic electricity system to other electricity systems in Europe. One of the key issues is the legal framework for international trade in electricity has been evolving over the last couple of decades and has aimed to facilitate increased cross-border trade in electricity.

The question for a seller of electricity from Iceland is if there is a legally clear path to connect the Icelandic electricity grid to other grids and export electricity and what ramifications that might have on the Icelandic electricity market.

This thesis will look at cross border trade with electricity and what role international agreements play in facilitating or enabling international transactions in electricity. As a case study, it will research the possibilities for an actor in Iceland to sell electricity from renewable sources into the European market.[1]

Iceland is an export nation and has benefited from international trade agreements for the export of fish products and aluminium for example. The legal framework for the internal market in Europe has developed significantly and greatly facilitates the cross-border trade in electricity, whereas the WTO framework assists in enabling this trade, but is not sufficient to secure it.

The focus will be on the connection between Iceland and the UK.[2] For this legal analysis, the applicable agreements of the World Trade Organization (WTO),[3] the most relevant legal framework of the European Union (EU) and the Agreement on the European Economic Area (EEA)[4] will be used. For the legal issues arising in Iceland, Icelandic law will be studied. In addition there are myriad of legal topics that come into

[1] For simplification Iceland will be used as the point of origin for the electricity, although it might be pulling together production from the North Atlantic region, e.g. Greenland, offshore wind etc.

[2] Four possible connection points could be explored: Norway, the UK, Germany, and the Netherlands.

[3] Marrakesh Agreement Establishing the World Trade Organization (adopted April 15 1994, entered into force 1 January 1995) 1867 UNTS 154 (WTO Agreement).

[4] The EEA Agreement establishes the Internal Market and provides for the inclusion of EU legislation that covers the four freedoms, the free movement of goods, services, persons and capital, throughout the 30 EEA States. The Agreement guarantees equal rights and obligations within the Internal Market for citizens and economic operators in the EEA. In addition, the Agreement covers co-operation in other important areas such as research and development, social policy, consumer protection and the environment. See Official Journal of the European Communites Agreement on the European Economic Area - Final Act - Joint Declarations - Declarations by the Governments of the Member States of the Community and the EFTA States - Arrangements - Agreed Minutes - Declarations by one or several of the Contracting Parties of the Agreement on the European Economic Area [1994] OJ L1/3 4–41.

play, such as utilization of resources, environmental impact assessments, permitting, investment protection, the United Nations Convention on the Law of the Sea (UNCLOS)[5] apart from topics that would directly relate to electricity law. Due to the size of this thesis they will not be analysed but references made when directly applicable. A major gating issue is public policy in Iceland[6] and ultimately the economic feasibility of the interconnector.

Various geographical entry points have been considered on a technical level in connection with possible export of electricity from Iceland to Europe, although the connection to the UK has gotten most attention in recent years.[7]

It would depend on the connection points which legal regimes would be applicable, but in all cases relevant domestic laws would play a role. For the connection to Iceland and Norway, the EEA agreement is applicable, for Germany and the Netherlands EU law, but following the "Brexit" vote, the WTO agreements could be used as a basis for the UK connection if other agreements would not be finalized. The negotiations between the UK and the EU have just been concluded at the time of the writing of this thesis and a provisional agreement has been reached.[8]

The thesis will seek to answer questions concerning the right and conditions to access the national electricity transmission grid in Iceland for an interconnector to the UK, which could be applicable to a connection to another WTO member, such as the USA.

Iceland is a member of the EEA, the WTO and the ECT and it will be explored if the legal associated framework that have paved the way in enhancing international trade will provide a clear legal path for export of electricity. Will they secure, or at least facilitate, this transaction or if there are certain legal barriers standing in the way? It will also be examined if the fact that the electricity produced in Iceland is renewable will facilitate the export.

The structure of this thesis will be the following. Chapter two discusses electricity, its nature, how it is categorized in relation to trade, technical issues, and the value chain in electricity, including interconnectors. This Chapter concludes with discussion

[5] Convention on the Law of the Sea (10 December 1982) 1833 UNTS 397.

[6] The discussion in Althingi on the so called third Energy Package was a very heated and lengthy and one of the most contentious points related to a potential interconnector, see Chapter 3.3.3

[7] 'North Atlantic Energy Network' (Orkustofnun and others 2016) 3 <https://orkustofnun.is/gogn/Skyrslur/OS-2016/North-Atlantic-Energy-Network-Report.pdf> accessed 20 August 2020.

[8] See Chapter 5.10

on the development of electricity markets and the legal framework for electricity in general. Chapter three covers Iceland, the development of the electrification of the island how the legislation for electricity has changed over the years, especially following the participation in EEA and the adaptation of the EU energy packages. Chapter four traces the development of energy legislation in the EU, the establishment of the EEA, and efforts to create a single energy market. An important element of that are the creation of structure and facilitation for interconnectors and the emphasis on renewable energy. Chapter 5 deals with international energy law, historical development, and the establishment of the WTO. It examines which parts of the WTO acquis could apply to international trade in electricity and some comparison is made between WTO and EU legislation. Chapter five concludes with a discussion on the establishment of ECT and a recent trade agreement between the EU and the UK. In Chapter six, the focus shifts to a potential interconnector between Iceland and the UK. The primary practical issues are considered, and the electricity legal framework in the UK is examined. The conditions for connection to the respective electrical grids are discussed, and if it is likely that an Iceland-UK interconnector would likely fulfil the criteria for a merchant model. That result, in addition to the conclusion of the analysis of the legal frameworks from previous chapters, is then presented in Chapter Seven to answer the question of whether a legal framework exists for the export of "green" electricity from Iceland to the UK. The final thoughts discusses cross-border interconnections for electricity in broader terms.

2. Electricity

2.1 Nature of Electricity

Electricity is a fundamental element in the fabric of the modern society and is mostly taken for granted. The power grid and the delivery of electricity is one of the major engineering feats of the 20th century.[9] The importance of electricity keeps growing, as not only are traditional uses growing but new devices require electricity as well. Since its discovery for practical use in the in the 19th century,[10] the use of electricity has

[9] The US National Academy of Engineering considers the electric grid the greatest engineering achievement of the 20th century, 'Greatest Engineering Achievements of the 20th Century' <http://www.greatachievements.org/> accessed 20 August 2020.

[10] In 1831 electricity became viable for use in technology when Michael Faraday created the electric dynamo, which solved the problem of generating electric current in an ongoing and practical way, See Michael Wenkart, *50 Scientific Discoveries That Changed the World.* (Books on Demand 2014) 79.

increased steadily and is intertwined with economic growth.[11] In IAE's World Energy Outlook 2019 "Stated Policies Case",[12] global electricity demand grows at 2.1% p.a. to 2040, twice the rate of primary energy demand. Electricity is the world's fastest-growing form of end-use energy consumption, as it has been for many decades. This increasing electricity demand is one of the key reasons why global CO_2 emissions from the power sector reached a record high in 2018.[13] The commercial availability of a diverse sources of renewable technologies also puts the use of electricity in a key position to combat climate change. Reduced costs of renewable energy have not only accelerated the replacement of fossil fuels by renewable energy in electricity generation, but it is also now starting to replace fossil fuels in other sectors.[14]

In the beginning the electrical systems or grids, were primitive and only served special purposes such as lighting up a part of a city, such as when Thomas Edison used his direct-current system to provide power to illuminate the Wall street offices of J.P. Morgan and the offices of the New York Times in September 1882.[15]

In the early days of electrification, the various systems were operated as "islands" and there were no connections between them. Gradually the power systems have continued to evolve from isolated, small grids to integrated national markets and ultimately to international markets.[16]

The international trade in electricity, however, has been minuscule by the standard of overall trade in goods and services. In 2011, exports of electricity amounted to barely forty billion USD (and 662 TWh), only about 0.225% of the nearly eighteen trillion USD of worldwide trade in that year.[17]

Electricity is different from other energy forms such as oil or gas, as it is not a physical substance and cannot be stored economically in any meaningful way at a

[11] John Conti and others, 'International Energy Outlook 2016 with Projections to 2040' (US Energy Information Administration 2016) 81 <https://www.eia.gov/outlooks/ieo/pdf/0484(2016).pdf> accessed 1 October 2020.
[12] 'IEA, World Energy Outlook 2019, Flagship Report, November 2019' (*International Energy Agency (IEA)*) <https://www.iea.org/reports/world-energy-outlook-2019> accessed 29 August 2020.
[13] ibid.
[14] Tomas Kåberger, 'Progress of Renewable Electricity Replacing Fossil Fuels' (2018) 1 Global Energy Interconnection 48, 48.
[15] Daniel Yergin, *The Quest: Energy, Security and the Remaking of the Modern World* (Revised and updated, Penguin Books 2012) 348.
[16] 'Technical Aspects of Grid Interconnection. Multi Dimensional Issues in International Electric Power Grid Interconnections' (United Nations 2012) 15 <https://www.un.org/esa/sustdev/publications/energy/chapter2.pdf> accessed 17 September 2020.
[17] Werner Antweiler, 'Cross-Border Trade in Electricity' (216AD) 101 Journal of International Economics 42, 42.

utility scale, although this is gradually changing.[18] For this reason, production and consumption of electricity must always be in balance, otherwise crisis such as blackouts can arise. Electricity is consumed continuously and therefore the electrical system must always meet certain physical constraints (frequency, voltage, stability). Due to this nature, marginal costs of production and delivery are volatile and no other product has a delivered cost with such high volatility.[19] Given its unique nature, it can even be asked if electricity is a good or a service.

2.2 Electricity as a Good or a Service

Within the energy industry historically, no distinction was made between energy goods and energy-related services and the two have been considered integrated such they could not be dealt with separately.[20] Electricity was defined as a good under GATT 1947[21] and in 1994 the ECJ explicitly recognized electricity directly under the free circulation of goods.[22]

This definition has been debated and due to peculiar nature of electricity, i.e., it does not have physical substance, and the need for specialized infrastructure, some scholars have argued that it is more like a service or potentially a bit of both.[23] On the opposite end the argumentation is that its characteristics are that of a good which should be governed by property law.[24]

The classification of electricity has ramifications and as an example it is possible for WTO Member States to impose significantly more protectionist restrictions on services than on goods.[25] This issue will be discussed further in Chapter 5.3.

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[18] Advances in battery technology are rapid and some projections assume up-to 80% price reduction of lithium ion batteries in 2050 compared to 2018, see Wesley J Cole and Allister Frazier, 'Cost Projections for Utility-Scale Battery Storage' (2019) Technical Report NREL/TP-6A20-73222, 1529218 iv <http://www.osti.gov/servlets/purl/1529218/> accessed 15 October 2020.

[19] Janusz Bielecki, 'Electricity Trade: Overview of Current Flows and Infrastructure' in Janusz Bielecki and Melaku Geboye Desta (eds), *Electricity trade in Europe: review of economic and regulatory challenges* (Kluwer Law International 2004) 7.

[20] Daria Boklan and Olga Belova, 'Trade in Electricity under WTO and EAEU Law: Compatibility of Two Legal Regimes' [2020] Journal of World Energy Law and Business, 129, 131.

[21] Thomas Cottier and others, 'Energy in WTO Law and Policy' (NCCR Trade Regulation 2009) Working Paper No 2009/25 4–5.

[22] Case C-393/92 *Almelo and Others* [1994] ECR I-1477, para 28. See discussion in Cottier and others (n 22) 5.

[23] Boklan and Belova (n 20) 131.

[24] ibid.

[25] ibid 132.

2.3 Transmission of Electricity

The value chain in electricity is typically divided into four activities; **Generation** which converts other energy sources into electricity, **Transmission** where electricity is transmitted with high voltage, often over long distance, **Distribution** where electricity flows at lower voltage to final consumers and the **Supply,** i.e., metering, billing and other services provided to the final consumers.[26]

Special systems, basically set of wires, are needed to move electricity from one place to the next. These set of wires can be either in the form of overhead lines or underground cables.[27] The purpose of the electricity power transmission system is to transfer electrical energy from generating power plants to either heavy industrial users or to electrical sub-stations where electricity is further distributed to small industry, offices, service companies and households. The electrical energy network is a natural monopoly,[28] since it is inefficient to duplicate the physical network and the balancing requirements for energy management means that many short-term decisions must be made unilaterally by the Transmission System Operators (TSO).[29] This infrastructure is of high economic importance and due to its monopolistic nature, it can create economic rents that can be a matter of dispute.[30] Inherently there is a tension between investors and consumers, therefore the electrical networks have traditionally been operated under terms set by the state.[31] It can be said that the transmission grid is "built as much from law as from steel".[32]

As with other regulated monopolistic systems, the national regulators are faced with creating a framework and methodology for calculating the tariff for the TSO and delegating powers for the operation of the electrical grid.

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[26] Cottier and others (n 21) 4.

[27] 'Efficient Electrical Energy Transmission And Distribution' (International Electrotechnical Commission (IEC), 2007) 7.

[28] Natural Monopoly is where a single firm can satisfy the entire market demand for the range of og goods and services at a lower total cost than any other combination of firms, see David MG Newbery, *Privatization, Restructuring, and Regulation of Network Utilities* (MIT Press 1999) 27.

[29] Chris Harris, *Electricity Markets: Pricing, Structures and Economics* (John Wiley & Sons Inc 2006) 141.

[30] This has also been the case in Iceland where larger users have complained about the transmission tariff, see for example *Norðurál Grundartangi ehf. gegn Orkustofnun,* úrskurður Úrskurðarnefndar raforkumála nr. 3/2014, 24. febrúar 2016.

[31] Newbery (n 28) 1.

[32] Gretchen Anna Bakke, *The Grid: The Fraying Wires between Americans and Our Energy Future* (Bloomsbury 2016) xx.

2.4 Interconnectors

Electricity interconnectors are the physical links which allow the transfer of electricity across borders.[33] In many cases, the interconnection is realized by a technology called HVDC (High Voltage Direct Current), which enables transmission of electricity over long distances. This technology has been in use for a long time and the first DC cable was the Gotland HVDC transmission link (20 MW) that came into service in 1954.[34] The technology has advanced significantly and in 2008 the NorNed cable came into operation, the longest submarine cable hitherto, 580 kilometres and with a capacity of 700 MWs.[35]

Longer and bigger cables are at the discussion stage and longer HVDC links with more transmission capacity are operating on land.[36] The idea of integrating renewable energy sources is not new. In the 1930s the famous systems theorist, Richard Buckminster Fuller, suggested the use of abundant renewable energy sources to supply cities around the world with electricity through an interconnected global electricity grid.[37] The interconnection of electricity production in deserts in North Africa to mainland Europe has also been under consideration,[38] number of other projects have been explored and the interest has been growing in recent years.[39]

2.5 Benefits of Interconnections

Integration of national energy markets can bring with it a variety of benefits. With a larger market and better interconnected market, there is more efficient use of

[33] 'Electricity Interconnectors' (*Ofgem*) <https://www.ofgem.gov.uk/electricity/transmission-networks/electricity-interconnectors> accessed 8 November 2020.

[34] 'The Gotland HVDC Link' (*Hitachi ABB*) <http://new.abb.com/systems/hvdc/references/the-gotland-hvdc-link> accessed 28 December 2020.

[35] 'NorNed' (*Tennet*) <http://www.tennet.eu/our-grid/international-connections/norned/> accessed 4 March 2020.

[36] See for example 'Xiangjiaba–Shanghai (China), 2,000 Km, 6,400 MW' (*Hitachi ABB*) <https://www.hitachiabb-powergrids.com/balkans/en/references/hvdc/xiangjiaba---shanghai> accessed 28 December 2020.

[37] Karolis Gudas, 'Cross-border electricity infrastructures and efficient use of renewable energy sources' (World Trade Institute, University of Bern 2015) 1 <https://www.researchgate.net/publication/281462166_Cross-border_electricity_infrastructures_and_efficient_use_of_renewable_energy_sources> accessed 20 June 2020.

[38] Within 6 hours the world's deserts receive more energy from the sun than humankind consumes within a year. This means that sufficient clean power can be generated from the world's deserts to supply mankind with enough electricity on a sustainable basis. See 'Clean Power from the Deserts' (*Desertec Foundation*, 2019) <https://www.desertec.org/concept-note/> accessed 10 April 2020.

[39] See Appendix 1 for list of UK interconnector projects

resources[40] leading to better prices for the consumers and more competitive markets. With the interconnection, the security of supply is increased, and it enables more use of intermittent renewables as the poll of balancing power is increased, thus addressing both national security and environmental sustainability.

The integration can improve security of supply and enable greater penetration of intermittent renewables by allowing supply shocks to be offset by output in neighbouring interconnected markets. Without more interconnectors, the cost associated with building new flexible capacity to manage intermittency of renewables generation could be significantly greater than would otherwise be required.[41]

It is therefore understandable that further interconnections are very much on the agenda and the EU has a program called projects of common interest (PCIs) to facilitate further interconnection of the common market in electricity.[42]

2.6 Development of Electricity Markets

The worldwide discussion on energy markets reform started in the early 1980s and although there have been different scenarios in different markets the global direction has been broadly consistent in most countries for the last 30 years.[43] Historically, the industry had been largely dominated by state run monopolies and thus governed by strict territorial allocation but the development has been towards reform initiatives including liberalization, deregulation, privatization, third party access and restructuring of the energy supply, transmission, and distribution industry. The consequences are that electricity systems have become ”unbundled”[44] and the generation of electricity has increasingly been transformed into a competitive marketplace. Large markets have been interconnected and the trade in electricity has increased dramatically. The original backdrop of this reform is very much along the lines of a political ideology of

[40] Spyridon Chatzivasileiadis and Damien Ernst, ‘The State of Play in Cross-Border Electricity Trade and the Challenges towards a Global Electricity Market Environment’ in Thomas Cottier and Ilaria Espa (eds), *International trade in Sustainable Electricity: Regulatory Challenges in International Economic Law* (Cambridge University Press 2017) 24.

[41] Another study found that by building enough interconnectors, the need for dispatchable conventional power plants could be reduced by up to half ibid 25.

[42] See ‘Projects of Common Interest’ (*European Commission*) <https://ec.europa.eu/energy/topics/infrastructure/projects-common-interest_en> accessed 15 April 2020 The Iceland UK interconnector was on this list but has been removed following ‘Brexit’.

[43] Harris (n 29) 122.

[44] By ‘unbundled’ is meant the separation of the functions of Generation, Transmission, Distribution and Suppy, see discussion in Michael G Pollitt and others, ‘Vertical Unbundling in the EU Electricity Sector’ (2007) 42 Intereconomics 292.

the competitive free market which shall ultimately lead to the benefit of the consumer.[45] Others add the claim that this change is closely related to the increasing importance of infrastructures to modern societies.[46] The emergence and growing importance of renewable energy production has also had an impact in this regard.[47] The concept of international trade in electricity is therefore becoming ever more relevant topic. As mentioned earlier this trade is somewhat different to trade in other goods and services and the most important challenges are linked to energy trade's dependence on fixed infrastructure.

2.7 Energy Law and the Development of the Legal Framework for Electricity

As electricity is a form of energy, it is a subject of Energy Law. A simple definition could state that Energy law concerns the management of energy resources.[48] Bradbrook defines Energy law as:

> The allocation of rights and duties concerning the exploitation of all energy resources between individuals, between individuals and the government, between governments and between states.[49]

As a justification, Bradbrook gives eight "social considerations" and seven "jurisprudential considerations" for energy law as a separate legal discipline. Energy law is a multi-disciplinary subject touching on subjects such as economics, engineering, environmental sciences, politics, and geography.[50] The jurisprudential considerations relate i.a. to the legal characteristics of energy law as interdisciplinary and interjurisdictional (e.g. national/international). Its focus can be on international, EU, or national law and it can limit itself to one energy resource or include the full range of primary and secondary energy resources.[51] Despite the fact energy law is

[45] As a part of economic policy, sometimes called 'The Washington Consensus', see: John Williamson, 'Democracy and the "Washington Consensus"' (1993) 21 World Development 1329, 1333.

[46] André B Dorsman (ed), *Financial Aspects in Energy: A European Perspective* (Springer 2011) 13.

[47] David Robinson, 'Economic and Geopolitical Determinants of Trade in Electricity' in Thomas Cottier and Ilaria Espa (eds), *International Trade in Sustainable Electricity: Regulatory Challenges in International Economic Law* (Cambridge University Press 2017) 62.

[48] Raphael J Heffron, *Energy Law: An Introduction* (Springer 2015) 1.

[49] Adrian J Bradbrook, 'Energy Law as an Academic Discipline' (1996) 4 Journal of Energy & Natural Resources Law 193, 194.

[50] Heffron (n 48) 1.

[51] Martha M Roggenkamp and others, 'Introduction' in Martha M Roggenkamp and others (eds), *Energy Law in Europe: National, EU, and International Regulation* (3rd edn, Oxford University Press 2016) 7. Primary energy consists of unconverted or original fuels. Secondary energy includes resources that have been converted or stored.

gradually developing as an academic discipline in Europe, it is still quite diverse in its approach.[52]

As discussed, the focus of this thesis is the aspects of energy law relating to electricity, particularly cross-border transmission of electricity. Electricity was long regarded as a domestic commodity and viewed from its strategic importance and security of supply aspects, and the development of the energy sector has traditionally been driven on a national level.[53] Despite no international trade in electricity at the time, the theme was already acknowledged in the year 1923 when the "Geneva Convention on Electricity" on electricity was adopted.[54] The convention stipulated rules for the international electricity projects, but it did neither provide legal mechanism for their authorization nor procedural or substantive rules for their development.[55]

The Doha round, which is the latest round of negotiations of trade negotiations among WTO Members, was launched in Doha Qatar in November 2001. The goal of the negotiations is achieving a major reform of the international trading system.[56] One of the focal points in the Doha round is Energy and how the WTO system can contribute to a more efficient allocation of energy resources and a better trading environment for energy.[57]

A pressing question might be if "International Energy Law" is *sui generis*, or an application of general provisions of WTO law or EU/EAA law as the case might be?[58] And subfields, such as international trading in electricity, would be *lex specialis*? Even though there has been significant development in the legal framework for energy, it can be argued that this is still not the case.

This is still a fragmented field and still lacks a central international institution and dispute settlement body performing the organizing and harmonizing role. Over the years though, there have been dozens of treaty instruments and soft law guidelines

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[52] ibid 9.

[53] Karolis Gudas, *The Law and Policy of International Trade in Electricity: Access to and Development of Cross-Border Electricity Transmission Infrastructure under EU and WTO Frameworks* (Europa Law Publishing 2018) 4.

[54] Convention Relating to the Transmission in Transit of Electric Power (adopted 9 December 1923, entered into force 26 July 1926) 58 LNTS 315.

[55] Gudas (n 53) 7.

[56] 'The Doha Round' (*The World Trade Organization*) <https://www.wto.org/english/tratop_e/dda_e/dda_e.htm> accessed 29 November 2020.

[57] See for example speech given by Pascal Lamy at the 20th World Energy Congress, Rome, 15th November 2007 'Doha Round will benefit energy trade. Lamy.' (*World Trade Organization*, 16 November 2007) <https://www.wto.org/english/news_e/sppl_e/sppl80_e.htm> accessed 29 November 2020.

[58] Roggenkamp and others (n 51) 14.

and standards introduced that are applicable to participants in the energy sector and their activities, and even if this has not been specified as “International Energy Law” *per se*, the case law of international courts and tribunals includes a significant body of jurisprudence on energy matters such this could be grouped together under this heading.[59]

One key aspect of energy to be kept in mind is that it is closely associated with the sovereignty of states and there is extensive evidence of their reluctance to give control over energy choice to external international bodies.[60]

Table 1 shows the main international agreements that are most relevant. The OECD would most likely not play a big role, but it is in the background and can have an impact on the terms of project financing based on export credit for example.

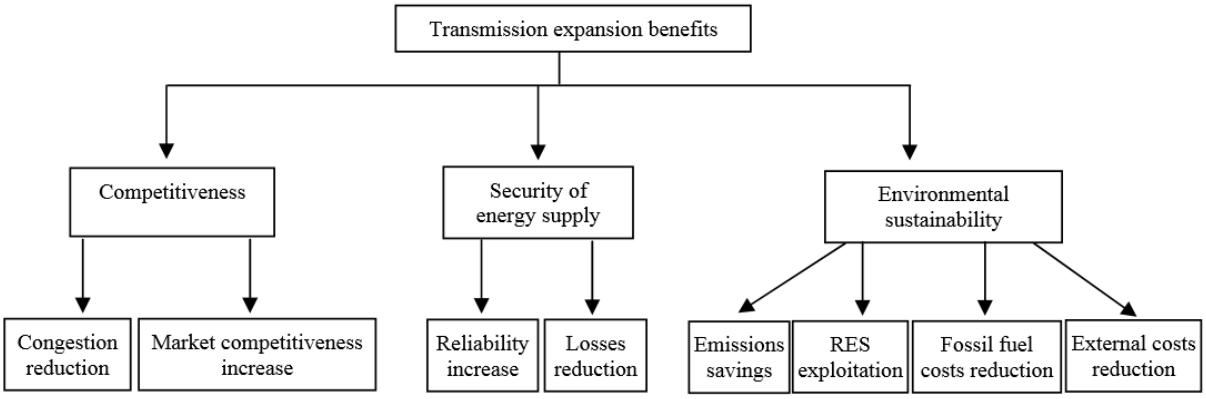

Fig. 1: Main benefits of transmission expansion grouped according to the dimension of EU energy policy[61]

3. Electricity Law in Iceland

3.1 Historical Background of the Electrification of Iceland

The first power station in Iceland was built by Jóhannes J. Reykdal near Hörðuvellir in Hafnarfjörður, which became the first electrified town in Iceland in 1904. About 16 homes with 150 lampstands were connected to it.[62]

In 1937, Sogsvirkjun, the first power plant larger than 10 MW, was taken into operation and the electrification of Iceland accelerated, and in 1953 it was estimated

[59] ibid.

[60] ibid.

[61] Jonas Teusch and others, *The Benefits of Investing in Electricity Transmission: A Case Study of Northern Europe* (CEPS 2012) 8 <https://www.ceps.eu/publications/benefits-investing-electricity-transmission-lessons-northern-europe> accessed 6 August 2020.

[62] Guðmundur Gunnarsson, ‘Upphaf rafmagns og fyrstu starfsár félagasamtaka rafvirkja’ (1995) <http://www.rafis.is/fir_gamli/sagafir.htm#UPPHAF%20RAFMAGNSINS> accessed 29 August 2020.

that 85% of Icelanders had access to electricity. The first geothermal power plant, Bjarnarflag, was taken into operation in 1969. The establishment of The National Power Company, Landsvirkjun, on 1 July 1965 can be traced to the Icelandic government's intention to make better use of the country's energy resources by attracting foreign investors to energy-intensive domestic industries and the first large hydropower plant, Búrfellsvirkjun by Þjórsá, (210 MW) started to deliver electricity to the first energy-intensive plant in 1969.[63]

3.2 Electricity Law in Iceland 1913-2003

The first laws that were enacted and directly related to electricity was the Act on Public Utilities in Urban areas No 28/1913 regarding electricity supply in towns.[64] This law granted local governments in towns and villages the right to distribute electricity within their municipalities and sell electricity. They could also claim monopoly for selling light bulbs and other electrical equipment in their jurisdiction.

These laws were short lived, and they were repealed by Act No 51/1915 on electric utilities.[65] The law stipulated that the exclusive right of local governments to electrify should apply to all rural areas, but according to the law, a rural area was defined as a town, small town, or district. Individuals or smaller groups were, however, allowed to provide electricity for their own needs. Local governments were allowed, subject to the approval of the Cabinet, to transfer their exclusive right to individuals or associations, but not for more than 20 years.

Up until the twentieth century, water rights were governed by the rules of Jónsbók.[66] In the early twentieth century, there was growing interest from domestic and foreign parties to utilize water rights to produce electricity[67]. With the passing of the so-called “Fossalög” Act (No 55/1907), the right of ownership of waterfalls etc., was restricted to prevent foreigners from getting control of hydropower in Iceland. The issue of water rights continued to be debated, particularly if they should all be owned by the state or by the individuals who owned the property rights of the associated land.

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[63] ‘Landsvirkjun our History’ (*Landsvirkjun*) <https://www.landsvirkjun.com/company/history/> accessed 29 August 2020.

[64] Alþt. 1976-1977, A. deild, þskj. 130 – 109. mál 793.

[65] ibid.

[66] See discussion in Alþt. 2010-2011, A. deild, þskj. 949 – 561. mál 22.

[67] ibid.

This debate was founded both on political ideology as well as on legal arguments based on Icelandic law.[68]

With the passing of the Water Act No15/1923, it was specified which water utilization permits accompanied the ownership of land in the case of larger lakes.[69] The Water Act repealed Act No 51/1915 on electric utilities. The Water Act stipulates that no one may harness a waterfall greater than 500 horsepower, except with the permission of the Minister.[70] The Act stipulated that municipalities or designated companies would build and operate power plants and electric utilities. The Water Act repealed Act No 51/1915 on electric utilities.

With a passing of Electricity Act No 12/1946, a comprehensive legislation for the matters of electricity was put in place. The Act stipulated that only the state had the authority to build and operate power plants larger than 100 horsepower, but the Minister was authorized to permit a municipality or others to build and operate power plants up to 2000 horsepower in size, given other electric utilities will not provide sufficient electricity.[71] With the Act, the policy was set for the state to generate and distribute electricity for the public in the areas that did not have electric utilities. Until that time, the policy of the state was not to be engaged in electricity generation or distribution.[72]

Iceland State Electricity (RARIK) was established by this Act, with the task of providing the public and the economy with sufficient electricity and in the most economical way possible. It was also granted the exclusive right to sell electricity wholesale, except that the towns of Reykjavík, Akureyri and Ísafjörður and the Andakílsá power plant were authorized to sell electricity in wholesale to their district electric utilities as well as to RARIK. The Act stipulated, as a rule, that district electric utilities manage distribution of electricity and sales to consumers, but municipalities, individuals, and associations could be granted the exclusive right to distribute electricity.[73]

This electricity Act repealed Act No 46/1925, on hydropower licenses, Act No 28/1932, Act No 83/1932, and Act No 16/1942. In the forties, couple of Acts regarding

[68] ibid.
[69] ibid.
[70] Alþt. 1976-1977, A. deild, þskj. 130 – 109. mál (n 64) 793.
[71] ibid 795.
[72] Alþt. 2005-2006, A. deild, þskj. 382 - 348. mál 1477.
[73] Alþt. 1976-1977, A. deild, þskj. 130 – 109. mál (n 64) 795.

building of hydro power plants were passed, Act No 28/1946, for the Sog power plant and Act No 54/1949 for the Laxá power plants.

Landsvirkjun was founded as a partnership between the Treasury and the City of Reykjavík cf. Act No 59/1965.[74] Later the town of Akureyri also became a partner when Landsvirkjun took over the Laxá power plants.

According to the Act, the purpose of Landsvirkjun should be to build and operate electricity infrastructure for the public and industry in Iceland.[75] As mentioned, the company should build a hydro power plant on the river Þjórsá and its establishment was one of the preconditions for a loan from the World Bank in Washington for the construction financing. It was also a part of a political agenda to make Iceland suitable for participation in the new economic environment that had developed in the West after the end of the Second World War, where emphasis was placed on increased international trade and membership of international organizations.[76]

By Act No 96 passed on December 22 1965, on measures to improve the finances of RARIK, it was stipulated that those parties who sell electricity wholesale to distribution utilities or directly to large users, should pay a tariff equalization contribution to RARIK.[77, 78]

With the Energy Act No 58 passed on April 29 1967, all previous electricity laws were repealed. This law stipulates that to build and operate power plants larger than 2 MW requires a permit from the Althingi and permit from the Ministry of Industry was required to build and operate a 0.2 - 2 MW power plant. The Act established the National Energy Authority (Orkustofnun) with an extensive role in the field of energy with a new position of the Director of Energy and the appointment of a technical committee as a forum for consultation on technical and economic issues.[79]

Several Acts on power plants were passed in the following years, including for new hydro power plants in the Þjórsá - Tungnaá region and on geothermal power plant

[74] ibid.

[75] ibid.

[76] Sigrún Pálsdóttir, 'Stofnun Landsvirkjunar: Forsaga og aðdragandi' in Sigrún Pálsdóttir (ed), *Landsvirkjun 1965-2005: Fyrirtækið og umhverfi þess* (Hið íslenska bókmenntafélag 2005) 16.

[77] Alþt. 1976-1977, A. deild, þskj. 130 – 109. mál (n 64) 795.

[78] A tariff equalization contribution fee is still in force and discussions on different prices to different usuers have been very lively in Iceland for many years. Due to the special nature of electricity and the integrated role of generation, transmission and distribution, the calculation of the cost to produce and deliver electricity to the end user can be quite complex.

[79] Alþt. 1966-1967, A. deild, þskj. 201 – 105. mál Articles 1 - 3.

at Krafla. The electricity production in Iceland increased dramatically in the latter part of the 20th Century, or from 783 GWh in 1969 to 7,678 GWh in 2000.[80]

Up until the nineteen-seventies the electricity transmission system in Iceland was fragmented and many areas were dependent on electricity production from diesel generators. In the years 1973-74, oil prices rose sharply on the international markets and enormous oil costs for electricity production with diesel generators were foreseen. The Icelandic government predicted that the construction of transmission line around the island would be the quickest way to tackle those increases and make it possible to save foreign currency that would otherwise go to oil purchases.[81] This task was carried out by RARIK and over the next ten years the electricity system in Iceland was interconnected.[82, 83]

3.3 Electricity Law in Iceland from 2003

3.3.1 Background on Iceland joining the EEA

The European Free Trade Association (EFTA) was founded by seven countries, Austria, Denmark, Norway, Portugal, Great Britain, Switzerland, and Sweden, with an agreement signed in Stockholm on 3 May 1960. The foundation of EFTA was a reaction of these countries at the time to the establishment of the European Economic Community (EEC) about two years earlier. Thus, EFTA was considered an alternative to the EEC, offering economic and trade cooperation without the political integration of the EEC member countries that was in the making. Iceland became a member of EFTA in 1970.[84]

Based on an initiative from the European Commission that the EEC principles (the four freedoms) and the associated Acts might also apply to the EFTA States[85] led to the Agreement on the European Economic Area in Oporto, in Portugal 2 May 1992

[80] 'Orkustofnun Data Repository OS-2019-T015-01' <https://rafhladan.is/bitstream/handle/10802/22648/OS-2019-T015-01.pdf?sequence=1> accessed 26 September 2020.
[81] Helgi Kristjánsson, *Birta, afl og ylur: saga Rafmagnsveitna ríkisins í 50 ár : 1947-1997* (Rafmagnsveitur ríkisins 1997) 59.
[82] ibid 61.
[83] Not everyone agreed with this policy and among some of those influential in the matters of electricity, there was a view that instead of an interconnection, smaller hydro power plant shuld be built around the country ibid.
[84] Sigurður Líndal and Skúli Magnússon, *Réttarkerfi Evrópusambandsins g Evrópska Efnahagssvæðisins: megindrættir* (Hið íslenska bókmenntafélag 2011) 115.
[85] ibid 116.

and it entered into force on 1 January 1994.[86] All EEA Member States, both the participating EFTA states[87] and the EU (formerly EEC), ratified the EEA Agreement.[88]

In the Nordic EFTA countries (Norway and Iceland), the EEA Agreement was implemented by special law, as the constitutions of these countries was based on the dual nature of national and international law, which necessitated special legislation. In Iceland, the agreement was both ratified and enacted, to a large extent, by Act No 2/1993[89] on the European Economic Area.[90]

At the time of the finalization of the EEA Agreement, it was the position of the EFTA States that the EEA Agreement should, in principle, be subject to the principles of traditional international co-operation. On these grounds, it was impossible to transfer power to the EEA institutions in the same way the EU member states had done. Therefore, it was clear that the powers of the EEA institutions would be somewhat different from the powers of the EU institutions, not least when it came to the setting (or adopting) rules under the agreement.[91]

The result was an arrangement based on two pillars, the "federal pillar" and the EFTA pillar. Within the EFTA pillar, some institutions have a similar role vis-à-vis the EFTA States and the EU's institutions vis-à-vis their member states. These EFTA bodies include the EFTA Court and the EFTA Surveillance Authority (ESA).[92]

The EEA Agreement is active and dynamic and the co-operation with the EU involves harmonizing rules applicable between the EU and the EFTA States. For this reason, the EEA Agreement must be amended in accordance with the development of EU rules. These amendments will eventually enter into force throughout the EEA. This process is sometimes referred to as homogeneity within the EEA. It means that

[86] ibid 117.

[87] Switzerland is a member of EFTA but does not take part in the EEA, see 'The European Economic Area (EEA), Switzerland and the North' (*Fact Sheets on the European Union European Parliament*, September 2020) <https://www.europarl.europa.eu/factsheets/en/sheet/169/the-european-economic-area-eea-switzerland-and-the-north> accessed 8 January 2021.

[88] Agreement on the European Economic Area - Final Act - Joint Declarations - Declarations by the Governments of the Member States of the Community and the EFTA States - Arrangements - Agreed Minutes - Declarations by one or several of the Contracting Parties of the Agreement on the European Economic Area [1994] OJ L1/3 (n 4).

[89] Lög um Evrópska efnahagssvæðið nr. 2/1993.

[90] Líndal and Magnússon (n 84) 119.

[91] ibid 148.

[92] ibid 150.

rules set by the EU and falling within the scope of the EEA Agreement are incorporated into the agreement and subsequently into Icelandic legislation.[93]

The EEA EFTA States have not transferred any legislative powers to the EEA Joint Committee and sometimes a Joint Committee Decision (JCD) requires the approval of the national parliament (i.e. the ratification process) in order for the JCD to be binding. This is the case if the constitution of one or more of the EEA EFTA States requires it and the JCD is therefore made with a so-called constitutional reservation.[94]

If a constitutional reservation is made, cf. Article 103 of the EEA Agreement, each state has some time to approve the JCD. The constitutional reservation will only be lifted by Iceland when Althingi has given its approval with a parliamentary resolution that the decision can be confirmed and/or amended by law for that purpose. If the JCD is confirmed based on parliamentary resolution, it must always be followed up with appropriate legislative changes for the JCD to be considered satisfactorily implemented.[95]

When the constitutional requirements have been fulfilled in an EEA EFTA State, it notifies the EFTA Secretariat, which forwards this information to the EEAS and the other EEA EFTA States. The JCD can enter into force according to its wording once the last EEA EFTA State to have constitutional requirements has notified the EFTA Secretariat that they have all been fulfilled.[96]

The participation of Iceland in the EU internal market was part of a general political strategy for the Icelandic society. Since joining, the implementation and enforcement of European rules regarding the four freedoms, i.e., the free movement of goods, services, labour and capital across borders, as well as in relation to competition, including the ban on state aid in competitive activities, consumer protection, etc., has had a significant impact on the Icelandic legal environment and

[93] 'Ákvarðanataka innan EES' (*Stjórnarráð Íslands*) <https://www.stjornarradid.is/verkefni/utanrikismal/evropusamvinna/ees-upplysingaveitan/akvardanataka-innan-ees/> accessed 7 December 2020.

[94] 'The Basic Features of the EEA Agreement. 14. What Is a "Constitutional Requirement" and What Does It Entail?' (*EFTA*) <https://www.efta.int/eea/eea-agreement/eea-basic-features> accessed 7 December 2020.

[95] 'Ákvarðanataka Innan EES' (n 93).

[96] 'The Basic Features of the EEA Agreement. 14. What Is a "Constitutional Requirement" and What Does It Entail?' (n 94).

society.[97] This was also the case with the legal environment for electricity and Iceland has largely followed the emphasis of the European Union in this area, mutatis mutandis, given that Iceland is an island and not physically connected to the internal market.

3.3.2 The Electricity Act 65/2003

In 1996, the Minister of Industry appointed a committee to advise on the revision of the legislation on the generation, transmission, distribution, and sale of electricity.[98] The advisory committee consisted of representatives from the energy companies, political parties, municipalities, and representatives of the labour market. The findings of the committee were issued in a detailed report.[99] The committee considered it important that the future structure of electricity matters would be formed on the existing solid Icelandic foundation as well as by using applicable experience and research made by other nations. The committee referred to progress in other countries based on mobilizing market forces to increase efficiency in the electricity sector. The report assumed that new electricity laws would be enacted.[100]

In the spring of 2003, Althingi passed a new comprehensive law on electricity, the Act No 65/2003, which applied to the generation, transmission, distribution, and trade in electricity in Iceland.[101] The purpose of the Act was to develop an efficient electricity system and thereby strengthen the economy and habitation in the country. This was to be achieved by creating conditions for competition in generation and trade of electricity, increase efficiency in the transmission and distribution of electricity, ensuring the security of the electricity system and the interests of consumers, and by promoting the utilization of renewable energy sources as well as taking environmental considerations into account, cf. Article 1 of the Act.

In the comments to the bill, it was stated that it was based on new attitudes that had emerged around the world. Their main purpose was to separate the natural

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[97] Birgir Tjörvi Pétursson, 'Greinargerð um ýmis álitaefni sem tengjast þriðja orkupakka ESB og innleiðingu hans í íslenskan rétt.' (2018) 2 <https://www.stjornarradid.is/lisalib/getfile.aspx?itemid=37407db8-c32c-11e8-942c-005056bc4d74> accessed 26 September 2020.

[98] Alþt. 2002-2003, A. deild, þskj. 700 – 462. mál 2914.

[99] Þórður Friðjónsson and others, 'Framtíðarskipan orkumála – tillögur um breytingar' (Orkunefnd um framtíðarskipan orkumála, 1996) <https://www.stjornarradid.is/media/atvinnuvegaraduneyti-media/media/Acrobat/orkumal.pdf> accessed 19 December 2020.

[100] Alþt. 2002-2003, A. deild, þskj. 700 – 462. mál (n 98) 2914.

[101] Raforkulög, nr. 65/2003.

monopoly aspects of the electricity system (transmission and distribution) and those where competition is possible (generation and sale).[102] This unbundling had laid the foundations for a market economy in the electricity systems of many countries and in the countries of the European Union, the development had generally been based on Directive 96/92/EC on the internal market in electricity.[103] By decision of the EEA Joint Committee 168/1999 of 26 November 1999, amending Annex IV to the EEA Agreement, the Directive became part of the EEA Agreement.[104]

The third chapter of the Act discusses transmission of electricity and the transmission system operator (TSO). According to Article 8, the Minister of Industries and Innovation shall nominate one company to handle electricity transmission and system management. The control of the transmission company shall be independent of other companies engaged in the generation, distribution, or sale of electricity. Article 9 lays out its duties where it is stated that the transmission company shall build the transmission system in an efficient manner, considering safety, efficiency, reliability of supply and quality of electricity, and that it has monopoly in constructing new transmission facilities. In item 1 under Article 9, is stated that operation of the transmission system includes to:

> Connect all those who apply for it to the transmission system, if they meet the technical conditions for it and pay a connection fee in accordance with provisions in the tariff, cf. Art. 12. However, new entrants may be denied access to the transmission system based on transmission capacity, security, and quality of the system. The refusal shall be in writing and substantiated.[105]

This transmission company, called Landsnet hf., was established in May 2004 cf. Act No 75/2004.[106]

3.3.3 The Decision of the EEA Joint Committee no. 93/2017

The energy legislation within the EU developed quite a bit in the latter part of the twentieth century, as discussed in Chapter 4, and following Directive 96/92/EC (so

[102] Alþt. 2002-2003, A. deild, þskj. 700 – 462. mál (n 98) 2923.

[103] Chapter 4 discusses the development of Energy Law in the EU/EEA

[104] Ákvörðun sameiginlegu EES-nefndarinnar nr. 168/1999 frá 26. nóvember 1999 um breytingu á IV. viðauka (Orka) við EES-samninginn. 46/2000 EES-viðbætir við Stjtíð EES 5.

[105] Translated by author.

[106] Lög um stofnun Landsnets hf. nr. 75/2004.

called First Energy Package) came Directive 2003/54/EC (Second Energy Package) and Directive 2009/72/EC (Third Energy Package).

Directive No 2003/54/EC on common rules for the internal market in electricity and repealing Directive 96/92/EC was incorporated into the EEA Agreement by the decision of the EEA Joint Committee no. 146/2005 on 2 December 2005. At the same time, Regulation (EC) No 1228/2003 of the European Parliament and of the Council of 26 June 2003 on conditions for access to the network for cross-border exchanges in electricity and 2003/796/EC: Commission Decision of 11 November 2003 on establishing the European Regulators Group for Electricity and Gas were incorporated into the EEA Agreement. This decision of the EEA Joint Committee was confirmed in Iceland by a parliamentary resolution on 17 March 2007.[107]

The Third Energy Package, i.e. Directive 2009/72/EC and associated regulations were incorporated into EEA Agreement by the decision of the EEA Joint Committee No 93/2017 on 5 May 2017.[108] The JCD was made with a constitutional reservation and it was confirmed in Iceland by a parliamentary resolution on 2 September 2019 after lengthy discussions.[109]

More specifically the following Directive, the following Regulations and Decisions related to electricity were confirmed:

1. Regulation (EC) No 713/2009 of the European Parliament and of the Council of 13 July 2009 establishing an Agency for the Cooperation of Energy Regulators.

2. Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003.

3. Commission Regulation (EU) No 543/2013 of 14 June 2013 on submission and publication of data in electricity markets and amending Annex I to Regulation (EC) No 714/2009 of the European Parliament and of the Council.

4. Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC.

[107] Alþt. 2006-2007, A. deild, þskj. 967 – 648. mál.

[108] 'EEA Joint Committee Adopts Third Energy Package' (*EFTA*, 5 May 2017) <https://www.efta.int/EEA/news/EEA-Joint-Committee-adopts-Third-Energy-Package-502509> accessed 7 December 2020.

[109] Alþt. 2018-2019, A. deild, þskj. 1237 – 777. mál.

According to the notes to the bill, the incorporation of the Third Energy Package into the EEA Agreement does not imply any obligation or duty on the part of the Icelandic government to connect to the EU's common electricity system by laying a submarine cable or by other means.[110]

Contemporaneously another parliamentary resolution was confirmed, and two bills were passed in relation to the third energy Package, i.e. changes of Electricity Act 65/2003 concerning the national regulator and the policy of the state concerning interconnectors.[111] Since the adaptation of the third energy Package by Iceland, the development has moved forward in Europe.

4. Energy Law in the EU/EEA

4.1 Historical Background

Ideas regarding co-operation and even the unification of European states have been around for a very long time. However, the direct roots of the European Union (EU) lie in the efforts to ensure lasting peace in Europe after the Second World War (1939-1945).[112]

After World War II, various ideas for greater European co-operation emerged, even to form a kind of "United States of Europe". The establishment of the Council of Europe in 1949 and the Organization for European Economic Cooperation, which later became the Organization for Economic Co-operation and Development (OECD) stem from these ideas. This European co-operation can also be viewed as a part of a larger trend of international co-operation for peace that began after the end of the Second World War, e.g. with the founding of the United Nations in 1945 and the North Atlantic Treaty Organization (NATO) in 1949.[113]

The first step was the foundation of the European Coal and Steel Community (ESC) on 23 July 1952.[114]

[110] ibid 6.

[111] Alþt. 2018-2019, A. deild, þskj. 1282 – 791. mál; Alþt. 2018-2019, A. deild, þskj. 1242 – 782. mál; Alþt. 2018-2019, A. deild, þskj. 1253 – 792. mál.

[112] Líndal and Magnússon (n 84) 15.

[113] ibid.

[114] ibid.

The next major step in the development was establishing the European Economic Community, abbreviated EEC, with the Treaty of Rome in 1957 where the ESCS member states entered into close economic and trade co-operation.[115]

The EEC was changed to the European Community (EC) by the Maastricht Treaty in 1992. The Treaty also established the European Union, abbreviated EU. The Lisbon Treaty,[116] that entered into force in 2009, removed the boundaries between the EC and the EU. According to the Lisbon Treaty, Members of the EU are one party under international law.[117]

As the names of the first agreements imply, energy has been a central theme of EU law and policy and two of three them focused on energy and energy was also included in the more general European Economic Community Treaty.[118] Certain instruments were also set up to secure oil and gas supplies.[119]

One early landmark judgement from the European Court of Justice, *Costa v. Enel*, from 1964, concerned energy.[120] It established the supremacy of EU law over national laws, one of the most important general principles of EU law.[121] It also established the energy sector as a part the economic activities covered by EU law and policy. Nevertheless, as the role of states in energy matters were considered to be central, energy was in practice not part of the EU integration project in the beginning.[122] This also meant that EU law did not impact the energy sector and national monopolies for many years. This began to change in the late 1980's as a part of a trend, particularly stemming from the UK and USA, were the use of the market forces instead of state-controlled activities was gaining ground.[123] Since 1988 the EU has impacted the electricity sector through various reforms, including the so called "Energy Packages".[124,125]

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[115] ibid 17–18.

[116] Treaty of Lisbon Amending the Treaty on European Union and the Treaty Establishing the European Community [2007] C306/1 2007.

[117] Líndal and Magnússon (n 84) 21–22.

[118] Kim Talus and Pami Aalto, 'Competences in EU Energy Policy' in Rafael Leal-Arcas and Jan Wouters (eds), *Research handbook on EU energy law and policy* (Edward Elgar Publishing 2017) 15.

[119] Kim Talus, *EU Energy Law and Policy: A Critical Account* (Oxford University Press 2013) 21.

[120] *Case C-6/64 Costa v Enel [1964] ECR 585*.

[121] Talus and Aalto (n 118) 15.

[122] ibid.

[123] ibid 16.

[124] Gudas (n 53) 35.

[125] The energy packages applied to gas and electricity, here the discussion focuses on electricity

The Lisbon Treaty, for the first time brought energy in explicitly as an area of shared competences under Article 4 of Part I of the TFEU.[126] The aim of the EU policy on Energy, "in a spirit of solidarity between Members States" is to:[127]

(a) ensure the functioning of the energy market;
(b) ensure security of energy supply in the Union; and
(c) promote energy efficiency and energy saving and the development of new and renewable forms of energy; and
(d) promote the interconnection of energy networks.

The policy is not removing the sovereignty of the Member States in matters of Energy as the TFEU gives them leeway and Article 194 acknowledges the right of the Member States in the areas of taxation and in determining the conditions for exploiting their energy resources.[128]

4.2 EU Energy law and its sources

The principal sources of EU energy law consist of primary and secondary legislation. The main primary sources are the founding Treaties establishing the European Union: The Treaty on the EU (TEU) and the Treaty on the Functioning of the EU (TFEU), the EURATOM Treaty and the Charter of Fundamental Rights. Apart from the specific rules regarding energy, the TFEU rules on free movement, competition, and State aid are of special significance for the energy sector.[129] The EU has also ratified many international conventions (TFEU Article 216) that have a bearing on EU energy law as well as the general principles of EU law that have to a large extent been developed by the EU courts by their judgements and decisions.[130] The Secondary law are mainly directives aimed at creating an internal energy market and focusing on environmental aspects, including the ETS trading scheme, as well as some specialized instruments i.a. promoting trans-European energy networks.[131] Secondary legislation is based on the Treaties and is only valid if it is consistent with these instruments.[132]

[126] Talus and Aalto (n 118) 18.
[127] Article 176 A Treaty of Lisbon Amending the Treaty on European Union and the Treaty Establishing the European Community [2007] C306/1 C 306/88.
[128] Consolidated Version of the Treaty on the Functioning of the European Union [2012] OJ C326/47 135.
[129] Hans Vedder and others, 'EU Energy Law' in Martha M Roggenkamp and others (eds), *Energy law in Europe: national, EU, and international regulation* (3rd edn, Oxford University Press 2016) 188.
[130] ibid.
[131] Talus (n 119) 10.
[132] Vedder and others (n 129) 188.

4.3 The First Energy Package, Directive 96/92/EC[133]

The start of the journey towards full liberalisation was not very ambitious.[134] The first liberalisation directive for electricity (First Energy Package) was adopted in 1996 and transposed into Member States' legal systems by 1998 in order to open the market up for competition.[135]

Even if this framework was not sufficient to create a competitive market in electricity, it created the basis for future development of the sector. Issues like unbundling and negotiated or regulated third party access to electricity networks were covered in the directive.[136]

4.4 Second Energy Package, Directive 2003/54/EC[137]

In 2003 the Second Energy Package was adopted and its directives to be transposed into national law by Member States by 2004, with some provisions delayed and entering into force in 2007.[138]

The aim of the directive was to accelerate the process of creating competitive electricity market. The new directive and the associated regulations included more detailed sector specific obligations, with the goal of achieving further liberalisation of European electricity markets.[139] Part of the changes allowed industrial and domestic consumers to choose their own gas and electricity suppliers from a wider range of competitors.[140]

The legislative instruments included provisions on national energy market authorities, regulated third party access to networks, and functional and legal unbundling, as well as creating a regulatory framework for cross border interconnectors.[141]

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[133] Directive 96/92/EC of the European Parliament and of the Council of 19 December 1996 Concerning Common Rules for the Internal Market in Electricity [1996] OJ L27/20 2020.
[134] Talus and Aalto (n 118) 16.
[135] 'European Union Internal Energy Market' (*European Parliament*, November 2020) <https://www.europarl.europa.eu/factsheets/en/sheet/45/energia-siseturg> accessed 28 December 2020.
[136] Talus and Aalto (n 118) 16.
[137] Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003 Concerning Common Rules for the Internal Market in Electricity and Repealing Directive 96/92/EC [2003] OJ L176/37.
[138] 'European Union Internal Energy Market' (n 135).
[139] Talus and Aalto (n 118) 16.
[140] 'European Union Internal Energy Market' (n 135).
[141] Talus and Aalto (n 118) 15.

4.5 Third Energy Package, Directive 2009/72/EC[142]

The Third Energy Package, amending the second package, was adopted in April 2009. As before, the intention was to enhance the liberalization and establish the foundation for the internal energy market.[143]

The package included many new regulations and the directive specified e.g. rules for ownership unbundling and additional powers for national regulators. It also included regulations on access to electricity networks. One novelty here was the establishment of the new EU level energy authority, the Agency for the Cooperation of Energy Regulators (ACER).[144]

Furthermore, in addition to those regulatory instruments, the Third Energy package created competence to enact further legislation regarding the functioning of the energy markets through a new type of instrument in EU energy law, known as network codes.[145]

4.6 The Transmission System Operator (TSO)

According to Article 9 of Directive 2009/72/EC, each Member state shall ensure the unbundling of its transmission systems and transmission system operators. There are three models to achieve this[146] which consider potentially different situations in the Member States, but each of the models shall serve the purpose of unbundling, i.e. to be effective in removing any conflict of interests between producers, suppliers and transmission system operators.[147] All these models are subject to a certification procedure.[148] Each Member State shall appoint a single national regulatory authority

[142] Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 Concerning Common Rules for the Internal Market in Electricity and Repealing Directive 2003/54/EC [2009] OJ L211/55.
[143] 'European Union Internal Energy Market' (n 135).
[144] Talus and Aalto (n 118) 17.
[145] ibid.
[146] 'Interpretative Note on Directive 2009/72/EC Concerning Common Rules for the Internal Market in Electricity and Directive 2009/73/EC Concerning Common Rules for The Internal Market in Natural Gas - the Unbundling Regime' (European Commission 22 January 2010) (Commission Staff Working Paper) 4 <https://ec.europa.eu/energy/sites/ener/files/documents/2010_01_21_the_unbundling_regime.pdf> accessed 10 October 2020.
[147] ibid.
[148] ibid.

at national level[149] and they shall guarantee its independence and shall ensure that it exercises its powers impartially and transparently.[150]

Article 106 (1) of the TFEU, gives permission to the Member States to grant special or exclusive rights to an undertaking and it shall be, in compliance with the EU Treaties, entrusted with the operation of services of general economic interest.[151] The European Commission acknowledged in 1991 that economic and reliable supply of electricity in a socially responsible manner is a service of general economic interest[152] and in 1994 the ECJ clarified that an undertaking engaged in the regional distribution of electric power at uniform tariff rates provides a service of general economic interest.[153]

According to Article 10 of the 2009/72/EC, each Member State shall appoint an independent TSO to oversee and control the electricity transmission system. Article 12 lays out the tasks of the TSO, including to:

> ensuring the long-term ability of the system to meet reasonable demands for the transmission of electricity, operating, maintaining and developing under economic conditions secure, reliable and efficient transmission systems with due regard to the environment and ensuring non-discrimination as between system users or classes of system users.

Several cases have been brought before the Court of Justice to challenge the exclusive import and export rights provided for the TSOs. The Court has found that exclusive import and / or export rights for electricity can impede free movements of goods and hamper competition,[154] but in all these cases, the Court has required that discrimination must be proofed based on economic analysis rather than legal considerations.[155]

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[149] Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 Concerning Common Rules for the Internal Market in Electricity and Repealing Directive 2003/54/EC [2009] OJ L211/55 (n 142) Article 35 Para. 1.

[150] ibid Article 35 Para. 4.

[151] Consolidated Version of the Treaty on the Functioning of the European Union [2012] OJ C326/47 (n 128) 90–91.

[152] Gudas (n 53) 58.

[153] Case C-393/92 *Almelo and Others* [1994] ECR I-1477 (n 23).

[154] See *Case C-6/64 Costa v Enel [1964] ECR 585* (n 120); *Case C-157/94 Commission v Netherlands [1997] ECR I-5699*; *Case C-158/94 Commission v Italy [1997] ECR I-5789*; *Case C-159/94 Commission v France [1997] I-5815*; *Case C-160/94 Commission v Spain [1997] I-5851*.

[155] Gudas (n 53) 60.

4.7 ACER, Regulation 713/2009

As mentioned earlier, with the Lisbon Treaty energy became a matter of shared responsibility instead of being considered affairs of the Member states. Thusly, a roadmap for common energy policy and single market was created.[156] Increased cross-border electricity transmission infrastructure is very important for the functioning of the internal market for electricity and without adequate physical interconnection, the idea of creating a single market "simply cannot work".[157]

It was therefore acknowledged that further cross-border interconnection would need to be facilitated.[158] In the first decades of liberalization in the EU, national regulators played a key role in opening and creating internal markets in electricity,[159] but over time it became clear that more cross-national cooperation between them was needed to make the internal market work effectively.[160]

After the mid-20th century, there has been a tendency by governments and parliaments to empower non-majoritarian institutions to make decisions on public policy.[161] This trend has played a role in the supranational governance at EU level and has had impact on utility regulation.[162] After some deliberations, the Commission concluded that a Regulatory Agency was needed to make regulatory binding decisions on third parties regarding detailed technical issues.[163] This agency was established under Regulation 713/2009[164] and was called the Agency for the cooperation of Energy Regulators (ACER) and is one of the main changes with the Third Energy Package and the Agency was officially launched in March 2011. The Agency is a Community body with legal personality.[165]

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[156] Maria da Graça Carvalho, 'EU Energy and Climate Change Strategy' (2012) 40 Energy 19, 20.

[157] Henrik Bjørnebye, 'Interconnecting the Internal Electricity Market - a Goal without a Plan?' (*Oil, Gas & Energy Law*) <https://www.ogel.org/article.asp?key=2384> accessed 12 October 2020.

[158] Art. 2 (13) of Directive 2009/72/EC defines interconnectors as "equipment used to link electricity systems".

[159] Ermacora, Florian, 'The Agency for the Cooperation of Energy Regulators (ACER)' in Emmanuel Cabau and Christopher W Jones (eds), *EU Energy Law* (Claeys & Casteels 2007) 257.

[160] ibid.

[161] H Kühnert, P Böhler and S Polster, 'European Union · A Tale of Delegation and Power: ACER and the Dichotomy of the Non-Delegation Doctrine and the Creation of a Genuine Internal Market in Electricity' (2017) 1 European Competition and Regulatory Law Review 47, 2.

[162] ibid.

[163] Ermacora, Florian (n 159) 259.

[164] Regulation (EC) No. 713/2009 of The European Parliament and of the Council of 13 July 2009 establishing an Agency for the Cooperation of Energy Regulators (Text with EEA Relevance) [2009] OJ L211/1 2020.

[165] ibid Article 2 para. 1.

Apart from making binding decisions, ACER can also issue non-binding opinions and recommendations to TSOs, national energy regulators and EU institutions and framework guidelines for drafting of network codes.[166]

One of the tasks of ACER is to monitor regional cooperation between TSOs in the electricity as well as the execution of the tasks of the European Network of Transmission System Operators for Electricity (ENTSO-E).[167]

The ACER framework is not limited to EU Member States and the conditions for the participation of third countries were set out in the Article 31 of the regulation. The conditions are that the third countries that have implemented and agreed to apply EU energy legislation and, if relevant, in the fields of environment and competition, and have concluded agreements to that effect can be involved in ACER's work. This applies to the EEA Agreement under certain conditions.[168] Several amendments have been made to Regulation 713/2009 and it has been repealed and recast in the interest of clarity by Regulation 2019/942.[169]

4.8 Third Party Access over Borders, Regulations 714/2009

Another instrument to facilitate cross-border trade of electricity is regulation 714/2009.[170] The aim of the regulation was to lay down rules for cross-border exchanges in electricity with a view to improving competition and harmonisation in the EU's single market for electricity.[171]

Article 3 of the regulation discusses the certification of TSOs and assumes that this power is in the hands of national regulatory authorities, but subject to the opinion of the Commission. In Articles 4 and 5, the regulation lays the foundation for the

[166] Regulation (EC) No. 713/2009 of The European Parliament and of the Council of 13 July 2009 establishing an Agency for the Cooperation of Energy Regulators (Text with EEA Relevance) [2009] OJ L211/1 (n 164); See discussion in Vedder and others (n 129) 200.

[167] Regulation (EC) No. 713/2009 of The European Parliament and of the Council of 13 July 2009 establishing an Agency for the Cooperation of Energy Regulators (Text with EEA Relevance) [2009] OJ L211/1 L211/2.

[168] See Section 2 para. 7 'Commission Staff Working Paper on the Possibility of Neighbouring Countries and Their Transmission System Operators to Participate in ACER and in the ENTSOs' (European Commission 2011) 3.

[169] Regulation (EU) 2019/942 of the European Parliament and of the Council of 5 June 2019 Establishing a European Union Agency for the Cooperation of Energy Regulators (Text with EEA Relevance) [2019] OJ L158/22.

[170] Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on Conditions for Access to the Network for Cross-Border Exchanges in Electricity and Repealing Regulation (EC) No 1228/2003 (Text with EEA Relevance) [2009] OJ L211/15.

[171] ibid.

establishment of the aforementioned (ENTSO-E) which is a community of TSOs and currently represents 42 electricity TSOs from 35 countries across Europe.[172] Landsnet is a member of ENTSO-E.[173] Articles 6 and 7 of the regulation sets out the establishment and amendments of network codes which are the technical rules governing the access to and the functioning of the cross-border electricity grid. Article 8 discusses the tasks of ENTSO-E which include elaboration of network codes, which shall include i.a. network connection rules, third-party access rules, capacity-allocation and congestion-management rules and rules regarding harmonised transmission tariff structures including locational signals and inter-transmission system operator compensation rules.

Article 16 lays out the general principles of congestion management including how revenues from the allocation of interconnectors shall be used, but Article 17 of the regulation sets criteria for how new direct current interconnectors may, upon request, be exempted from this revenue rule. The basic principles for the exemption are the same in comparison to the repelled Regulation 1228/2003, but the regulatory provisions from which an applicant may be exempted were expanded in this regulation.[174] Several amendments have been made to Regulation 714/2009 and it has been repealed and recast in the interest of clarity by Regulation 2019/942.[175]

4.9 Preferential Treatment of RES-E, Directive 2009/28/EC

The development of renewable energy has been a central aim of the energy policy of the EU for a considerable time and in 1986 the Council listed the promotion renewable energy sources among its energy objectives.[176] The reasons were to increase security of supply and the development of renewable technologies was also seen as a business opportunity for European industries, but not least to tackle the climate

[172] 'Who Is ENTSO-E ?' (*ENTSO-E*) <https://www.entsoe.eu/about/inside-entsoe/objectives/#:~:text=%20ENTSO-E%20contributes%20to%20the%20achievement%20of%20these,for%20electricity%20generation%20for%20the%20short...%20More%20> accessed 14 October 2020.

[173] 'ENTSO-E Member Companies' (*ENTSOE*) <https://www.entsoe.eu/about/inside-entsoe/members/> accessed 14 October 2020.

[174] Christian Kessel, Leonardo Meeus and Christian Schwedler, 'Experience with Interconnection Merchant Projects under Regulation (EC) 1228/2003: Prospects for Regulation (EC) 714/2009' (2009) 18 Utilities Law Review 147, 154.

[175] Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the Internal Market for Electricity (Text with EEA Relevance.) OJ L158/54.

[176] Commission, 'Energy for the Future: Renewable Sources of Energy White Paper for a Community Strategy and Action Plan' (Communication) COM (97) 599 final 6.

change issue.[177]

The legal foundation of the EU environmental action is principally to be found in Articles 191 and 192 TFEU and the general Article 194 TFEU with reference to new and renewable energies plus the general reference to the environment and sustainable development in Article 11 TFEU.[178]

To promote the use and integration of renewables in electricity systems, a priority over conventional electricity production might need to be given and the First Energy Package introduced such a priority dispatch for renewable energy.[179] In the Directive 2001/77/EC, priority access was an option, but Directive 2009/28/EC,[180] repealing and amending Directive 2001/77/EC, had the obligation to provide for either priority or guaranteed access to the grid-system.[181]

The aim of Directive 2009/28/EC is to increase the use of renewables and it stipulates the levels of renewable energy use within the European Union from 2009 to 2020 and it mandates a 20% share of energy from renewable sources in overall Community energy consumption by 2020[182] and this target can be jointly achieved by the Member States.[183]

The integration of an entity to the electricity system can be divided into three items, i.e. access to the grid, grid connection and the dispatch of the electricity. These three items are regulated separately in the EU, although they are sometimes treated as the same or as separated items by the Member States[184] and in practice they approach them differently.[185]

Although the aim of Directive 2009/28/EC is noble in terms of caring for the

[177] ibid 4.

[178] Talus (n 119) 178.

[179] Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 Concerning Common Rules for the Internal Market in Electricity and Repealing Directive 2003/54/EC [2009] OJ L211/55 (n 142) Article 8(4).

[180] Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the Promotion of the use of Energy from Renewable Sources and Amending and Subsequently Repealing Directives 2001/77/EC and 2003/30/EC (Text with EEA Relevance) [2009] OJ L140/16.

[181] Gudas (n 53) 82–83.

[182] Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the Promotion of the use of Energy from Renewable Sources and Amending and Subsequently Repealing Directives 2001/77/EC and 2003/30/EC (Text with EEA Relevance) [2009] OJ L140/16 (n 180) Article 3 para. 1.

[183] ibid Article 4 para. 1.

[184] Gudas (n 53) 81.

[185] ibid 84.

environment, the grid related incentives can create problems.[186] Firstly, the priority dispatch of renewables can create so-called "loop flows",[187] which are unscheduled power flows and they imply that one transmission investment might have negative externalities on the capacity of other (perhaps distant) transmission connection and paradoxically a new transmission capacity might decrease the total capacity of the network.[188] Secondly the priority dispatch can create market unpredictability and unforeseen consequences in terms of emissions as temporary surplus of prioritized renewable energy could lead to sub-optimal use of conventional power production. Thirdly, the preferential treatment might not effectively solve the challenges in integrating new renewables and finally, it poses a great regulatory challenge that incentive regimes are not harmonized between jurisdictions.

Directive (EU) 2018/2001[189] recasts and repeals Directive 2009/28/EC and together with the revised Energy Efficiency Directive[190] and a new Governance Regulation,[191] is part of the Clean Energy for All Europeans package,[192] which aims to provide new, comprehensive rules on energy regulation in the EU until 2030.[193] It must become law in the EU countries by 1 July 2021. The new Directive increases the share of energy from renewable sources and binds the overall EU target for 2030 of at least

[186] ibid.

[187] The scheduled flows can deviate substantially from the actual physical flows in the electricity grid and Thema Consulting defines: loop flows as unscheduled flows stemming from scheduled flows within a neighbouring bidding zone or control area, whereas transit flows are unscheduled flows stemming from a scheduled flow between two or more bidding zones or control areas. See Anders Berg S Skånlund and others, 'Loop Flows – Final Advice.' (2013) THEMA Report TE-2013-36 <https://ec.europa.eu/energy/sites/ener/files/documents/201310_loop-flows_study.pdf> accessed 17 October 2020.

[188] Tarjei Kristiansen and Juan Rosellón, 'A Merchant Mechanism for Electricity Transmission Expansion' (2006) 29 Journal of Regulatory Economics 167, 168.

[189] Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the Promotion of the Use of Energy from Renewable Sources (Text with EEA Relevance) [2018] OJ L328/82 2020.

[190] Directive (EU) 2018/2002 of The European Parliament and of The Council of 11 December 2018 Amending Directive 2012/27/EU on Energy Efficiency (Text with EEA Relevance) [2018] OJ L328/210.

[191] Regulation (EU) 2018/1999 of The European Parliament and of The Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, Amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and Repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council (Text with EEA Relevance) [2018] OJ L328/1.

[192] 'Clean Energy for all Europeans Package' (*European Commission*, 20 October 2017) <https://ec.europa.eu/energy/topics/energy-strategy/clean-energy-all-europeans_en> accessed 15 October 2020.

[193] 'Renewable Energy. Summary of Directive (EU) 2018/2001 on the Promotion of the Use of Energy from Renewable Sources' <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=LEGISSUM:4372645> accessed 14 October 2020.

32% and is an important part of measures needed to reduce greenhouse gas emissions and to comply with the 2015 Paris Agreement on Climate Change.[194]

4.10 Models for Interconnectors

The key principle in the process of liberalisation and creation of an effective market in electricity is the obligation of Member States to open their markets and to facilitate third party access (TPA) to their electricity networks.[195] Under Directive 2009/72/EC the Member States are obliged to ensure non-discriminatory TPA, harmonised tariff mechanisms, harmonised cross-border transmission principles and common rules for capacity allocation on interconnections between national transmission systems.[196] The Member States should promote investment in new infrastructure, including interconnection capacity, to secure supply and keep supply/demand in balance in their respective electricity systems.[197]

The impetus of interconnectors can vary depending on the generation mix, public policy, security of supply etc. in the respective markets, but one could be that of an arbitrage, i.e. exploiting different prices in different markets. In an open market environment where prices are different on each side of an interconnector, participants might buy transmission rights to benefit from price differences. This results in more efficient markets resulting in a welfare gain. The market value of the interconnector capacity is determined by the price differentials between the two markets.[198] The optimal level of interconnection capacity is when the marginal costs of increasing the capacity is equal to the marginal benefits. That level does not mean though that congestions will never occur and that prices in the two markets will always converge.[199] The total welfare gain by connecting the markets is divided between the interconnector surplus (the congestion revenues), the consumer surplus and the producer surplus.

[194] ibid.

[195] Kessel, Meeus and Schwedler (n 174) 147.

[196] Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 Concerning Common Rules for the Internal Market in Electricity and Repealing Directive 2003/54/EC [2009] OJ L211/55 (n 142) Articles 32 and 38.

[197] ibid Recitals 6,10, 11, 44.

[198] Machiel Mulder, 'Merchant Investments in Interconnections in the European Electricity Market - the AQUIND Case' (Groningen: Centre for Energy Economics Research, University of Groningen, 2018) CEER policy Paper; No. 4 11.

[199] Paul Giesbertz, Petra Kistner and Martin Steger, 'The Legal and Economic Challenges for Single Interconnector Companies in the European Electricity Market – The Baltic Cable Case' [2019] SSRN Electronic Journal 5 <https://www.ssrn.com/abstract=3439447> accessed 17 October 2020.

The producer surplus in the exporting market is partially netted by a loss for consumers in that market and the consumer surplus in the importing market is partially at the expense of producers in that market.[200]

4.10.1 Regulated Interconnectors

If a planned interconnector is part of the electricity transmission system of the TSO, the national regulatory authority needs to verify the prudence of the investment. If the project is executed, the investment costs are included in the TSO's regulatory asset base and are recovered through the regulated network tariff.[201]

As mention before, under the regulated regime, the exclusive use of the revenues resulting from the allocation of the interconnection is:[202]

(a) guaranteeing the actual availability of the allocated capacity; and/or
(b) maintaining or increasing interconnection capacities through network investments, in particular in new interconnectors

Traditionally, the regulated model has been the primary approach in many countries, including in the EU, but for several reasons it has not delivered the necessary investment in interconnection capacity.[203]

4.10.2 Merchant Interconnectors

In addition to investments by TSOs, the EU also seeks to attract private and voluntary investments to accelerate the interconnection between the national grids.[204] The merchant transmission regime provides a legal basis for exemption from market rules.[205]

New HVDC interconnectors may, upon request, be exempted, for a limited period of time, from above revenue allocation rule and Articles 9, 32 and Article 37(6) and (10) of Directive 2009/72/EC. These articles address the unbundling of transmission systems and TSOs, third party access and the duties and powers of the regulatory

[200] ibid.
[201] Rahmatallah Poudineh and Alessandro Rubino, *Business Model for Cross-Border Interconnections in the Mediterranean Basin* (Oxford Institute for Energy Studies, 2016) 11.
[202] Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on Conditions for Access to the Network for Cross-Border Exchanges in Electricity and Repealing Regulation (EC) No 1228/2003 (Text with EEA Relevance) [2009] OJ L211/15 (n 170) Article 16 para. 6.
[203] Poudineh and Rubino (n 201) 11.
[204] Kessel, Meeus and Schwedler (n 174) 147.
[205] Gudas (n 53) 135.

authority, respectively.

The new capacity must meet six cumulative requirements:[206]

(a) the investment must enhance competition in electricity supply;
(b) the level of risk attached to the investment is such that the investment would not take place unless an exemption is granted;
(c) the interconnector must be owned by a natural or legal person which is separate at least in terms of its legal form from the system operators in whose systems that interconnector will be built;
(d) charges are levied on users of that interconnector;
(e) since the partial market opening referred to in Article 19 of Directive 96/92/EC of the European Parliament and of the Council of 19 December 1996 concerning common rules for the internal market in electricity, no part of the capital or operating costs of the interconnector has been recovered from any component of charges made for the use of transmission or distribution systems linked by the interconnector; and
(f) the exemption must not be to the detriment of competition or the effective functioning of the internal market in electricity, or the efficient functioning of the regulated system to which the interconnector is linked.

The decision on the exemption is made by the national regulatory authorities of the Member States concerned and it will be made on a case-by-case basis. An exemption might cover the new interconnecting capacity in part or in whole.[207] Information regarding the application shall be sent to the Commission and ACER as well, which might give the national regulatory authority in question an advisory opinion. After a decision on the exemption and its terms and conditions has been made by the respective national regulatory authorities, the Commission might decide to request the notifying bodies to amend or withdraw the decision to grant an exemption.[208]

The merchant model appears to solve the problem of incentive, which is a serious impediment under the regulated investment model, if certain assumptions are met.[209]

[206] Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on Conditions for Access to the Network for Cross-Border Exchanges in Electricity and Repealing Regulation (EC) No 1228/2003 (Text with EEA Relevance) [2009] OJ L211/15 (n 170) Article 17 para. 1.
[207] ibid Article 17 para. 4.
[208] ibid Article 17 para. 7 and 8.
[209] Poudineh and Rubino (n 201) 12.

5. Energy Law under the WTO

5.1 Historical Background

In 1947, following the Second World War, 23 nations negotiated a multilateral agreement to reduce tariffs.[210] This was a start of what became the General Agreement on Tariffs and Trade (GATT) and came into force in January 1948 on a provisional basis.[211] It was an international treaty that contained a series of over two hundred agreements, protocols and other documents and dealt almost entirely with trade in products. The results of the so-called Uruguay Round of discussions led to the creation of the WTO[212] which was established in 1994 by the Marrakesh Agreement which came into force and replaced the GATT in January 1995 and is the principal source of WTO law.[213]

Since its creation, the GATT has been the main international multilateral trade treaty and WTO has been the only global international organization dealing with the rules of trade between nations.[214] The aim of the establishment of the GATT was multiple, but the most important one was to improve worldwide economic growth and to free and liberalize global trade.[215] The framework was based on an agreement between governments to abolish and not to introduce measures that distort or limit international trade, such as tariffs, quotas, internal taxes, and regulations.[216]

The WTO law is a complex set of rules dealing with trade in goods and services and IP rights. This set of rules can broadly be characterized into five basic groups: (1) rules of non-discrimination; (2) rules on market access; (3) rules on unfair trade; (4) rules on the conflict between trade liberalisation and other societal values and

[210] Bernard M Hoekman and Petros C Mavroidis, *The World Trade Organization: Law, Economics, and Politics* (Routledge 2007) 8.
[211] General Agreement on Tariffs and Trade 1947 (adopted 30 October 1947, entered into force 1 January 1948) 55 UNTS 194 (GATT 1947).
[212] Marrakesh Agreement Establishing the World Trade Organization (adopted April 15 1994, entered into force 1 January 1995) 1867 UNTS 154 (WTO Agreement).
[213] Peter van den Bossche and Werner Zdouc, *The Law and Policy of the World Trade Organization: Text, Cases, and Materials* (3rd edn, Cambridge University Press 2013) 40.
[214] 'The WTO' (*The World Trade Organization*) <https://www.wto.org/english/thewto_e/thewto_e.htm> accessed 19 September 2020.
[215] John Howard Jackson, William J Davey and AO Sykes, *Legal Problems of International Economic Relations: Cases, Materials, and Text on the National and International Regulation of Transnational Economic Relations* (5th edn, Thomson/West 2008) 219.
[216] ibid 215.

interests; and (5) institutional and procedural rules, including those relating to WTO decision-making, trade policy review and dispute settlement.[217]

Since 29 July 2016, the WTO has 164 Member States, which are subject to the WTO rules and agreements in their international trade conducts[218]. The WTO dispute settlement system is exclusive[219] and only members may file suit against one another.[220] This means that individuals or groups must lobby governmental agencies or bodies to get access, but this can be challenging and costly.[221]

5.2 Development of Energy under the WTO

Fossil fuels, especially oil, have been among the most traded goods in the world,[222] but when the rules of GATT were negotiated over 70 years ago, the world energy demand was only a fraction of what it is today[223] and during its era relatively few energy exporting countries became signatories to it.[224] Since the establishment of the WTO, major energy exporting countries have joined, e.g. Saudi Arabia (2005), Russia (2012) and Kazakhstan (2015) and a number have assumed observer status.[225]

There are different opinions regarding if international trade in energy is included in and is subject to WTO law. One view maintains that it is like any other trade in goods or services and therefore should not be excluded. Other view is that several factors has led, *de facto*, to the exclusion of energy trade from the trading system and both camps support their claims with several arguments.[226] In any case, energy has come more into focus in the WTO in recent years, as was mentioned in Chapter 2.7, for

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[217] Bossche and Zdouc (n 213) 35.

[218] 'Members and Observers' (*The World Trade Organization*) <https://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm> accessed 19 September 2020.

[219] Bossche and Zdouc (n 213) 161.

[220] ibid 172.

[221] Robert O Keohane, Andrew Moravcsik and Anne-Marie Slaughter, 'Legalized Dispute Resolution: Interstate and Transnational' (2000) 54 International Organization 457, 463.

[222] In 2016, Refined Petroleum was the second most traded good in the world, Crude Petroleum was the eighth and Petroleum Gas was the twelfth most traded good in the world. See 'These Are the World's Most Traded Goods' (*World Economic Forum*, 23 February 2018) <https://www.weforum.org/agenda/2018/02/the-top-importers-and-exporters-of-the-world-s-18-most-traded-goods> accessed 19 September 2020.

[223] MA Adelman, 'World Oil Production & Prices 1947–2000' (2002) 42 The Quarterly Review of Economics and Finance 169, 170.

[224] E.g. Norway (1948), Indonesia (1950), Nigeria (1960), Kuwait (1963), Mexico (1986), Venezuela (1990) UAE and Qatar (1994), see list of countries that had signed GATT by 1994 'Members and Observers' (n 218).

[225] E.g. Algeria, Azerbaijan, Iran, Iraq, and Libya ibid.

[226] Rafael Leal-Arcas and Ehab Abu Gosh, 'Energy Trade as a Special Sector in the WTO: Unique Features, Unprecedented Challenges and Unresolved Issues' (2014) 6 Indian Journal of International Economic Law, 1, 4.

several reasons.[227] There has also been number energy of cases brought to the WTO dispute settlement mechanism as will be discussed in this thesis and it is hard to argue that the WTO law is not applicable to energy, even if there might be some shortfalls in the framework.

Even if the weight of energy exporting countries within the WTO framework has grown considerably, WTO law still does not contain any specific provisions on energy, including electricity.[228] Although this is the case, the current WTO framework can serve as a basis for the international trade in electricity.[229]

5.3 Applicable Articles

Given that a trade in electricity falls under the WTO framework, then the conditions for access must comply with WTO non-discrimination standards, most-favoured nation obligation, national treatment, and the prohibition of quantitative restrictions rules.[230] The Agreement on Subsidies and Countervailing Measures (SCM Agreement)[231] regarding subsidization, anti-subsidy measures, the Anti-Dumping Agreement,[232] and state aid comes also into play and has been discussed whether it should be reformed in order to give more support to renewables.[233] Technical regulations and standardization of electricity network components must comply with the Technical Barriers on Trade Agreement.[234] The procurement procedures of state (including state-owned or controlled enterprises) of the electricity network or its components will fall under the non-discrimination standards set out in the Government Procurement Agreement.[235, 236]

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[227] Cottier and others (n 21) 3.
[228] ibid.
[229] Gudas (n 53) 36.
[230] ibid.
[231] Agreement on Subsidies and Countervailing Measures (adopted 15 April 1994, entered into force 1 January 1995) 1869 UNTS 14.
[232] Agreement on the Implementation of Article VI of GATT 1994, Anti-Dumping Agreement, 1868 UNTS 201.
[233] Ilaria Espa and Gracia Marín Durán, 'Renewable Energy Subsidies and WTO Law: Time to Rethink the Case for Reform Beyond Canada – Renewable Energy/Fit Program' (2018) 21 Journal of International Economic Law 621, 622.
[234] Agreement on Technical Barriers to Trade (adopted 15 April 1994, entered into force 1 January 1995) 1868 UNTS 120 See discussion; Gudas (n 53) 37.
[235] Gudas (n 53) 36–37.
[236] As of September 2020, the GPA Agreement has 20 parties comprising 48 WTO members. 'Agreement on Government Procurement' (*World Trade Organization*) <https://www.wto.org/english/tratop_e/gproc_e/gp_gpa_e.htm> accessed 19 September 2020.

Transmission of electricity needs specialized infrastructure (as discussed in Chapter 2.3) and cross border trade in electricity is subject to the available infrastructure and depends on technical limitations such as access the importing country's transmission systems, transmission bottlenecks and congestion. The electricity systems to be connected must also be compatible.[237] Cross border electricity interconnectors are therefore essential for the development of larger common markets in electricity.[238]

As mentioned earlier, electricity was treated as good in the GATT and most countries applied zero tariffs,[239] and even if the WTO framework enables tackling electricity, there are no recorded disputes in the WTO regarding trade or transit of electricity as a product.[240] Because of the peculiar nature of electricity, its dichotomy, and the nature of transmission it should also be treated as service as was discussed in Chapter 2.2.

Given its duality, the electricity sector is subject to the General Agreement on Tariff and Trade (GATT) and the General Agreement on Trade in Services (GATS). The trade of electricity as a good is covered under GATT and the services of transmission[241] of electricity, if provided separately, under GATS. It should be noted though, that this distinction between trade in goods and trade in services is not always easy to apply in the energy sector and may lead to artificial determinations.[242]

Under WTO law there are two main non-discrimination obligations, i.e. most-favoured-nation (MFN) which prohibits to discriminate between different states and

[237] The public electricity systems in the world use either 50 Hz or 60 Hz alternating currents. Systems with different frequencies cannot be connected directly, but the use of HVDC conversion solves this problem.

[238] Caroline Kuzemko, Michael F Keating and Andreas Goldthau, *The Global Energy Challenge: Environment, Development and Security* (Palgrave Macmillan Education 2016) 189.

[239] Gudas (n 53) 37.

[240] ibid 36 The WTO dispute settlement bodies have resolved several energy related disputes. See for instance; *WTO, Canada: Certain Measures Affecting the Renewable Energy Generation Sector (6 May 2013) WT/DS412/AB/R*; *WTO, Canada: Measures relating to the Feed-In Tariff Program (6 May 2013) WT/DS426/AB/R*; *WTO, India: Certain Measures Relating to Solar Cells and Solar Modules (16 September 2016) WT/DS456/AB/R*; *WTO,European Union: Anti-Dumping Measures on Biodiesel from Argentina (6 October 2016)WT/DS473/AB/R*; *WTO, European Union and its Member States: Certain Measures Relating to the Energy Sector (10 August 2018) WT/DS476/R*.

[241] The term 'Transmission' will be used for the movement of electricity across borders as this is most often the case (high voltage/much energy)

[242] Mireille Cossy, 'Transport and Transit in the WTO' in Joost Pauwelyn (ed), *Global challenges at the intersection of trade, energy and the environment* (Graduate Institute, Centre for Trade and Economic Integration ; Centre for Economic Policy Research 2010) 113.

national treatment which prohibits to discriminate between domestic and foreign products or services.[243]

The main difference between the GATT and GATS regimes is related to application of the national treatment rule which is broader in the GATT system.[244] In GATS, Article XVII implies that Members are not required to commit to national treatment and if they do, it can be for a specific sector only. In effect, this can mean discrimination in favour of home country service providers.[245] The GATS system is therefore applicable only to the extent that the service is scheduled and in general will not apply to services 'supplied in the exercise of governmental authority's (unless a state has under-taken commitments under the Agreement on Government Procurement).[246]

The GATT non-discrimination rules dictate that discrimination between nations (MFN obligation) and between domestic and foreign products (NT obligation) is prohibited. Article I of GATT addresses the MFN obligation and Article I:1 states that;

> any advantage, favour, privilege or immunity granted by any contracting party to any product originating in or destined for any other country shall be accorded immediately and unconditionally to the similar product originating in or destined for the territories of all other contracting parties.

This article covers *de jure* and *de facto* discrimination and would mean for instance that if a domestic company producing electricity receives state support in the home market, the same support should be given to a foreign company producing electricity in that market.[247]

Article III of GATT deals with discrimination between the imported and domestic products (NT obligation). Article III:4 discusses "like" products, i.e. it prohibits discrimination if the products are "like". Electricity is a homogenous commodity and on the face of it, the national treatment standard should oblige that imported electricity, regardless of origin, should get the same treatment as domestic production.[248] This

[243] Bossche and Zdouc (n 213) 349.
[244] Gudas (n 53) 38.
[245] Ryan Dain Teksten, 'A Comparative Analysis of GATS and GATT: A Trade in Services Departure from GATT's MFN Principle and the Affect on National Treatment and Market Access' [2000] SSRN Electronic Journal 7–8 <http://www.ssrn.com/abstract=1664584> accessed 5 December 2020.
[246] Gudas (n 53) 38.
[247] ibid.
[248] ibid 39.

issue will be revisited though in chapter 5.6 which discusses preferential treatment for renewables.

In the GATS, the schedule of commitments of WTO Members does not address energy services as they do for sectors like construction, distribution, or financial services, which are given separate entries in the GATS W/120 classification system. Even if energy services are not mentioned explicitly in the classification system it does not mean that they are not covered by GATS. As the agreement is based on the principle of universal coverage, energy services should be covered under other applicable categories and services sectors.[249] According to the findings of the Panel in *EC - Bananas III*,:

> …no measures are excluded a priori from the scope of the GATS as defined by its provisions. The scope of the GATS encompasses any measure of a Member to the extent it affects the supply of a service regardless of whether such measure directly governs the supply of a service or whether it regulates other matters but nevertheless affects trade in service.[250]

This would imply that GATS covers electricity activities categorized as services.[251] The GATS Agreement does not define "service" as such. Instead, it identifies four different ways to provide a service, usually referred to as the "modes of supply":[252]

> 1. Cross border supply of services (Mode 1), i.e. when a service is provided from the territory of one WTO Member into the territory of any other WTO Member, (e.g. supply of electricity through an interconnector from the territory of one WTO Member to the territory of another Member). Under Mode 1, it is the service which crosses the border, independently from the supplier or the consumer;
>
> 2. Consumption of a service abroad (Mode 2), i.e. when a service is consumed in the territory of one WTO Member by a consumer from another WTO Member, (e.g. when a tourist travels with his EV to another WTO Member country and uses electricity in that country). Under Mode 2, it is the consumer that crosses the border into the country where the service is consumed;

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[249] Thomas Cottier, Sofya Matteotti-Berkutova and Olga Nartova, 'Third Country Relations in EU Unbundling of Natural Gas Markets: The "Gazprom Clause" of Directive 2009/73 EC and WTO Law' (NCCR Trade Regulation 2010) Working Paper No 2010/06 11.

[250] Panel Reports, European Communities - Regime for the Importation, Sale and Distribution of Bananas, WT/DS27/R/ECU (Ecuador) / WT/DS27/R/GTM, WT/DS27/R/HND (Guatemala and Honduras) / WT/ DS27/R/MEX (Mexico) / WT/DS27/R/USA (US), adopted 25 September 1997, as modified by Appellate Body Report WT/DS27/AB/R, DSR 1997:11. p. 695 to DSR 1997:111.

[251] Gudas (n 53) 40.

[252] Francesco Meggiolaro and Paolo Vergano, 'International Trade Law & Regulation Energy Services in the Current Round of WTO Negotiations' (2005) 11 International Trade Law & Regulation 97, 98.

3. Commercial presence (Mode 3), i.e. when a service supplier of one WTO Member establishes a commercial presence in another WTO Member's territory, (e.g. when a company opens up a branch in the territory of another WTO Member with the purpose of engaging in producing, selling or supplying electricity in that country). Under Mode 3, the supplier of the service is a locally established branch, subsidiary, or representative office of a non-resident service supplier. While the actual service provision is by a resident entity, the investor is of foreign origin; and

4. Movement of natural persons (Mode 4), i.e. when a physical person of any WTO Member travels to the territory of another WTO Member to provide services, (e.g. when the employees of an engineering company specializing in electricity transmission consulting move abroad, to the territory of another WTO Member, to provide such services). Under Mode 4, the supplier of the service is in the country on a temporary basis and remains a non-resident.

As this thesis covers electricity transmission, Mode 1 is most relevant.

The MFN treatment provided in GATS applies in principle to all services, however it is not unconditional, since WTO Members have made exceptions to the principle in their individual lists of MFN exemptions.[253]

This is not the case for national treatment (Article XVI GATS) and market access (Article XVII GATS) where obligations apply only in the areas where commitments are made by WTO Members. These commitments are indicated in each Members' Schedule, but Members may also negotiate commitments with respect to measures affecting trade in services not subject to scheduling, including those regarding qualifications, standards or licencing matters.[254] These commitments where up to a slow start and most of the commitments in the energy sector have been undertaken after the turn of the century.[255] This is a developing picture, but still the MFN rule of the GATS is mainly relevant for the electricity sector.[256]

Other Articles might be relevant such as Article V of GATT (transit) which renders special discussion in Chapter 5.7, Article VI of GATS (Domestic Regulation) tackles domestic regulatory barriers, Article XVII GATT (State Trading Enterprises), Article VIII

[253] ibid 3 At the time of the entry into force of the GATS Agreement, members were allowed to schedule MFN-exemptions in so called "Lists of MFN-exemptions". The right to do this expired for the founder members of the WTO on the entry into force of the Agreement, and now extends only to countries newly acceding to it. The purpose of such exemptions is to permit the grant of more favourable treatment to some countries than to members in general, but this is intended to be temporary. All exemptions are subject to review within five years of the entry into force of the Agreement, and they should, in principle, be eliminated after 10 years.

[254] Gudas (n 53) 41.

[255] Cossy (n 242) 114.

[256] Gudas (n 53) 41.

of GATS (Monopolies and exclusive Service Suppliers) and Article IX of GATS (Business Practices) which will be discussed in the next Chapter.

If there are exceptional circumstances, WTO Members may derogate from the WTO non-discrimination standards. General exceptions are established under Article XX GATT and Article XIV GATS, security exceptions under Article XXI GATT and Article XIV bis GATS and exemptions for regional trade agreements under Article XXIV GATT and Article V GATS.

5.4 TSOs under GATT and GATS and Unbundling

As has been mentioned before, there are no specific provisions in the WTO framework regarding electricity, including the regulation of TSOs.

The WTO rules that could be applicable under certain circumstances are Article XVII GATT and Articles VIII-IX GATS.[257]

The WTO allows the establishment and maintenance of a state trading enterprise (STE), but Members must notify them the WTO annually to increase transparency.[258] STEs are:

> Governmental and non-governmental enterprises, including marketing boards, which have been granted exclusive or special rights or privileges, including statutory or constitutional powers, in the exercise of which they influence through their purchases or sales the level or direction of imports or exports.[259]

Article XVII of the GATT 1994 requires that: (i) State trading enterprises act in accordance with the MFN treatment obligation and other basic obligations under the GATT 1994; and (ii) only commercial considerations should guide their decisions on purchases and sales for import and export.[260]

A TSO would qualify as a state trading enterprise if, (i) if it is established or maintained by a WTO Member (state-owned or state controlled) or, alternatively, (ii) if it is granted, formally or effectively, exclusive or special privileges by a WTO Member.[261] If this would be the case, it must comply with the above requirements of Article XVII and any export/import purchases or sales shall be made solely in

[257] ibid 62.
[258] Bossche and Zdouc (n 213) 513.
[259] 'Understanding on the Interpretation of Article XVII of GATT 1994' para 1 <https://www.wto.org/english/docs_e/legal_e/08-17.pdf> accessed 21 October 2020.
[260] Bossche and Zdouc (n 213) 513.
[261] Gudas (n 53) 62.

accordance with commercial considerations. In *Korea – Various Measures on Beef,*[262] the Panel discussed the general character of this clause and linked the commercial considerations to issues like price and availability. In *Wheat Exports and Grain Imports*[263] the Appellate Body of the WTO also looked at pricing, quality, or conditions of sale and if there was discrimination behaviour, but it also noted that this provision should not be interpreted as posing comprehensive competition law-type obligations on the STE.

This would mean that a TSO as a STE that deals with or impacts imports and exports of electricity should fall under the scope of Article XVII, regardless of whether the activities of the TSO are regarded as public or private in nature. Models for import and export of electricity, such as “single buyer” and ”negotiated access”,[264] are likely to fall under Article XVII as they are based on negotiations with the TSO.[265]

The GATS system allows WTO Members to allocate the activities of a TSO to monopolies and exclusive service suppliers which are primarily regulated under Article VIII-IX GATS. If a TSO has been authorised or established formally or in effect by a WTO Member, it falls under Article VIII GATS.[266]

In general, Article VIII would require Members to ensure that (a) the incumbent TSO in each market, and its monopolistic position is *de jure* or *de facto* authorised by the state, does not act in a manner inconsistent with MFN and with the Member’s specific commitments in that market; and (b) the TSO does not abuse its monopoly position in services markets outside the scope of its monopoly, which are the object of specific commitments under the GATS.[267]

An example of (b), is where a vertically integrated electricity utility, active in the generation, transmission, and distribution markets, abuses its monopolistic position in transmission in the liberalized generation and distribution markets.[268]

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[262] *WTO, Korea: Measures Affecting Imports of Fresh, Chilled and Frozen Beef (11 December 2000) WT/DS161/AB/R*.

[263] *WTO, Canada: Measures Relating to Exports of Wheat and Treatment of Imported Grain (30 August 2004) WT/DS276/AB/R*.

[264] The single buyer model is a system in which in principle only single entity would buy and sell electricity. The negotiated access is a system where electricity producers can sell directly to eligible consumers after an agreement with the TSO, see AM Klom, ‘Different Approaches to Electricity Liberalisation. Can Negotiated Access and the Single Buyer Model Coexist?’ (Unit for Completion of the Internal Market 1995).

[265] Gudas (n 53) 63–64.

[266] ibid 64–65.

[267] ‘World Trade Organization. Energy Services. Background Note by the Secretariat’ (1998) S/C/W/52 10.

[268] ibid.

The MFN clause in (a) should guarantee access to the transmission network, given that the relevant commitments are undertaken by the Member state, but in fact WTO Members have not undertaken specific commitments in the electricity sector, neither regarding the construction of infrastructure for nor for the trade in electricity.[269]

Article IX of GATS deals with business practices and stipulates that WTO members shall consult with a view to eliminate practices that restrain competition. Even if this article is soft, it nevertheless provides a forum for addressing contentious issues in relation to restrictive business practices and facilitates co-operation.[270]

As has been discussed, WTO Members must undertake commitments for GATS to be applicable. A lesson might be learned from the telecom sector that undertaking commitments alone, might not be enough to secure competition in electricity transmission services. The telecom sector is in many aspects comparable to the electricity sector. Both sectors have had dominant incumbents that kept strong market position and control over key infrastructure, even after liberalization. It was recognized under the GATS telecom negotiations that even if the relevant GATS disciplines facilitated a level-playing field for telecom service suppliers, additional disciplines would be needed. Therefore, a so-called Reference Paper for Telecommunications Services was negotiated, which contains disciplines regarding interconnection, anti-competitive safeguards, independent regulator, transparency, etc.[271]

One case has been brought to the WTO dispute settlement bodies in relation to this, which is *Mexico – Measures affecting Telecommunications Services,*[272] where US suppliers complained about not getting fair access to the Mexican market for certain basic public telecommunication services.[273]

Unlike the requirements in the EU, there is no obligation within the WTO framework to unbundle the electricity value chain, i.e., electricity generation, transmission, distribution and supply,[274] and vertically integrated undertakings are not

[269] Gudas (n 53) 66.
[270] Mira Burri and Sadeq Z Bigdeli, 'Commentary of GATS Article IX: Business Practices' [2008] SSRN Electronic Journal 233 <http://www.ssrn.com/abstract=1307671> accessed 22 October 2020.
[271] 'Telecommunications Services: Reference Paper 24 April 1996. Negotiating Group on Basic Telecommunications' (*World Trade Organization*) <https://www.wto.org/english/tratop_e/serv_e/telecom_e/tel23_e.htm> accessed 22 October 2020.
[272] *WTO, Mexico: Measures affecting Telecommunications Services (2 April 2004) WT/DS204/R*.
[273] Juan Galarza, Boutheina Guermazi and Bjorn Wellenius, *Telecommunications and the World Trade Organization: The Case of Mexico* (The World Bank 2005) 1.
[274] Gudas (n 53) 71.

treated as any kind of discrimination or violations of any normative rules of GATT or GATS.[275] Further differences between the WTO and the EU framework in relation to electricity will be discussed in Chapter 5.8.

Apart from obstacles to get access to the grid, barriers to trade in the context of transmission of electricity could include discriminatory measures in pricing or tariffs, limitation of physical electricity flows, or other constraints in terms of operation of the transmission system.[276]

5.5 Third Party Access over Borders

To enable international trade in electricity, access to the importing country's electricity gird is essential. The WTO framework does not explicitly regulate this nor does it mandate this access.[277] How this would apply in practice would depend on the structure and rules for the importing market. If the transmission system in the importing market is regulated at state level, the access would at least be subject to the non-discrimination standards discussed in Chapter 5.3 and the prohibition of quantitative restrictions according to Article XI GATT would also come into consideration.[278]

If the regulation of the access is put into the hands of a TSO, the potentially applicable rules would be that of Article XVII of GATT and Article VIII-IX of GATS as discussed in Chapter 5.3. In practice, many of the barriers to trade in this context have been handled based on competition law, which has a limited scope in the WTO system compared to the EU legislation EU.[279]

5.6 Differential Treatment for Renewables

The growing concerns about climate change has motivated governments around the world to introduce various policies to support increased use of renewable energy in electricity production. The electricity sector is the largest single source of energy-related green-house-gas emissions and offers a large opportunity to decrease

[275] ibid.
[276] ibid 74.
[277] ibid.
[278] ibid.
[279] ibid 75.

emissions and traditionally the renewables needed incentives to compete with conventional power production.[280]

The support schemes often come in the form of favourable power purchase agreements, subsidized financing, tax breaks and R&D funding.[281]

Examples of this are the programs the UK has introduced separately from the EU as will be discussed in Chapter 6.2, the efforts under US president Obama to make a global transition towards a clean energy economy[282] and the added emphasis of production of electricity by renewable sources by China.[283]

Despite the growing concerns of climate change and increased policy emphasis around the world, the WTO framework does not include the definition of "renewable energy". Therefore, *prima facie*, there is no distinction made between electricity from renewable electricity sources and conventional electricity sources.[284]

In the *EC-Asbestos* case,[285] consumer preferences played a prominent role in the Appellate Body (AB) finding of unlikeness of asbestos-containing and asbestos-free products. It is quite plausible that consumers might prefer "green" electricity to "grey" electricity and some retail electricity suppliers advertise their electricity as "green". It is nevertheless uncertain if this would suffice to distinguish the two as they are identical in nature.

Interestingly, even if fossil fuel subsidies are much larger than the support schemes for renewable energy, the only energy cases initiated in the WTO dispute settlement system have been against renewable energy subsidy programmes.[286]

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[280] Kateryna Holzer and Ilaria Espa, 'Greening Electricity Through Taxing: An Analysis of GATT Constraints' [2015] SSRN Electronic Journal 2 <http://www.ssrn.com/abstract=2764774> accessed 26 October 2020.

[281] HB Asmelash, 'Energy Subsidies and WTO Dispute Settlement: Why Only Renewable Energy Subsidies Are Challenged' (2015) 18 Journal of International Economic Law 261, 268.

[282] 'Fact Sheet: Obama Administration Announces New Financing for Renewable Energy Projects and Actions to Spur Innovation and Promote Energy Access Globally' (*Energy.gov, Department of Energy*, 14 November 2016) <https://www.energy.gov/articles/fact-sheet-obama-administration-announces-new-financing-renewable-energy-projects-and> accessed 12 December 2020.

[283] 'China Raises Renewable Power Subsidies 7.5% to $13 Billion' (*Bloomberg Law*, 18 June 2020) <https://news.bloomberglaw.com/environment-and-energy/china-raises-renewable-power-subsidies-7-5-to-13-billion-1?utm_source=rss&utm_medium=NEVE&utm_campaign=00000172-c76f-d455-affb-efffaaec0000> accessed 12 December 2020.

[284] Gudas (n 53) 86–87.

[285] *WTO, European Communities: Measures Affecting Asbestos and Products Containing Asbestos (12 March 2001) WT/DS135/AB/R*.

[286] *WTO, Canada: Certain Measures Affecting the Renewable Energy Generation Sector (6 May 2013) WT/DS412/AB/R* (n 240); *WTO, Canada: Measures relating to the Feed-In Tariff Program (6 May 2013) WT/DS426/AB/R* (n 240); *WTO, China: Measures concerning wind power equipment (11 December 2000)*

In the 1947 GATT, subsidies were a secondary issue, and the original agreement was relatively lenient on them.[287] In the Tokyo round, the issue was addressed further via multilateral agreement between 24 countries,[288] but it was not until the Uruguay round that the SCM[289] became part of the WTO landscape. The underlying rationale for restricting subsidies is that they can result in unfair competition and trade disputes.[290] The SCM agreement is still evolving and a subject of the Doha round of which the outcome is uncertain.[291] The mentioned renewable cases revolve much about local content and a breach of national treatment, but the *Canada—Measures relating to the Feed-in Tariff Program*[292] revolved in part about the "likeness" issue, i.e. if renewable electricity is different from electricity produced from conventional sources.

WTO panels look at four criteria to assess if products are like or different, i.e. (i) products' physical characteristics, (ii) products' end uses, (iii) consumer preferences and (i) tariff classification. As the characteristics of electricity are indistinguishable, regardless of the production method and have the same tariff classification, this test boils down to do consumer preferences.[293]

In *Canada-FIT*, the AB concluded that there were two separate markets in electricity, one being the conventional one, the other being the market for renewable energy.[294] The core rationale here is that for a product to be in the same market, it

WT/DS419/AB/R; *WTO, European Union and certain Member States: Certain Measures Affecting the Renewable Energy Generation Sector (5 November 2012) WT/DS452*; *WTO, European Union and Certain Member States: Certain Measures on the Importation and Marketing of Biodiesel and Measures Supporting the Biodiesel Industry (15 May 2013) WT/DS459*; *WTO, India: Certain Measures Relating to Solar Cells and Solar Modules (16 September 2016) WT/DS456/AB/R* (n 240); *WTO, United States: Certain Measures Relating to the Renewable Energy Sector (27 June 2019) WT/DS510/R*.

[287] Dominic Coppens, *WTO Disciplines on Subsidies and Countervailing Measures: Balancing Policy Space and Legal Constraints* (Cambridge University Press 2014) 23.

[288] ibid 27.

[289] Agreement on Subsidies and Countervailing Measures (adopted 15 April 1994, entered into force 1 January 1995) 1869 UNTS 14 (n 231).

[290] Coppens (n 287) 31.

[291] ibid 35.

[292] *WTO, Canada: Certain Measures Affecting the Renewable Energy Generation Sector (6 May 2013) WT/DS412/AB/R* (n 240); Two separate disputes *WTO, Canada: Measures relating to the Feed-In Tariff Program (6 May 2013) WT/DS426/AB/R* (n 240) gave rise to two Panels, but at the end a joint report was drafted.

[293] Holzer and Espa (n 280) 8.

[294] Aaron Cosbey and Petros C Mavroidis, 'A Turquoise Mess: Green Subsidies, Blue Industrial Policy and Renewable Energy: The Case for Redrafting the Subsidies Agreement of the WTO' [2014] SSRN Electronic Journal 7 <http://www.ssrn.com/abstract=2397134> accessed 26 October 2020.

would not suffice to look at the demand side.[295] Supply-side substitutability was also an issue. Here the AB cited as precedent *EC and Certain Member States – Large Civil Aircraft*[296] and looked at how easy it is for producers to switch production. AB considered if the financial contribution had been bestowed in an established market or in a 'new market' that was created via the FIT. In essence, the AB's conclusion was that comparison to the conventional market should not be made and in this 'new market' benchmark prices would be higher.

According to this it appears that "green" electricity could be differentiated from grey electricity under WTO, but this is not clear cut, and this definition of market has been criticised.[297]

Another potential avenue for preferential treatment under Article XX of GATT which offers general exceptions including one concerning the environment, i.e.:[298]

> GATT Article XX on General Exceptions lays out a number of specific instances in which WTO members may be exempted from GATT rules. Two exceptions are of particular relevance to the protection of the environment: paragraphs (b) and (g) of Article XX. Pursuant to these two paragraphs, WTO members may adopt policy measures that are inconsistent with GATT disciplines, but necessary to protect human, animal or plant life or health (paragraph (b)), or relating to the conservation of exhaustible natural resources (paragraph (g))[299]

The use of this article comes with certain caveats and it is aimed at achieving certain policy objectives rather than supporting certain production methods and it also requires that other options will be explored that might achieve this objective with less trade-restrictive measures.[300] It is far from clear if this exception can be used as a justification for the preferential treatment for "green" electricity. Other potential provisions might be considered such as security of supply, but GATT allows for a list of measures that can be undertaken for security of supply reasons, but in practice it

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[295] The AB agreed that the electricity produced by both 'markets' is the same for consumers. For future cases this is not a given as 'green labeling' of electricity is increasing and some consumers at least are willing to pay more for renewable energy.

[296] *WTO, European Communities and Certain Member States: Measures Affecting Trade in Large Civil Aircraft (30 June 2010) WT/DS316/AB/R*.

[297] Luca Rubini, 'What Does the Recent WTO Litigation on Renewable Energy Subsidies Tell Us About Methodology in Legal Analysis? The Good, the Bad, and the Ugly' [2014] SSRN Electronic Journal <http://www.ssrn.com/abstract=2383799> accessed 26 October 2020.

[298] 'WTO Rules and Environmental Policies: GATT Exceptions' (*WTO*) <https://www.wto.org/english/tratop_e/envir_e/envt_rules_exceptions_e.htm> accessed 26 October 2020.

[299] Article XIV of the GATS contains the same introductory clause and the same paragraph (b) — but it does not contain an equivalent to paragraph (g), see ibid.

[300] Gudas (n 53) 93.

might be very challenging to justify these measures for the promotion of renewable energy.[301]

Despite that *Canada-FIT Case* created certain flexibility for renewable electricity, following it, many scholars believe that WTO law does not support climate change mitigation goals. They also claim the WTO subsidy rules should be reformed to create space for state support for renewable energy. The reason for this might be a lack of in-depth evaluation of State support for renewables beyond this case and a thorough review of this support under the existing WTO subsidy disciplines.[302] Another reason is that there has not been a clear distinction made between supporting renewable electricity production or the production of the equipment to produce renewable electricity.[303] It can be argued that general supporting scheme, i.e. Feed in Tariff for renewables without local content requirement, is unlikely to run afoul of the SCM agreement, at least while cross-border trade in electricity remains relatively small.[304] There is also nothing in WTO law that prevents its members from balancing potential injurious impacts on its domestic industry from subsidized imports against their positive contribution to fight climate change.[305] The EU has a long tradition of stimulating green electricity production, but the development has been moving away from fixed premiums to market-based approaches, such as auctions.[306] In general, there should not be an obstacle under WTO law for the UK to offer premiums for Icelandic electricity coming from renewable sources purchased over the interconnector, and it is unlikely that any other member state would challenge such measure in any case.

5.7 Transit, Article V

The principle of freedom of transit has been acknowledged for a long time and as early as the 17th century, the Dutchman Hugo de Groot opined the transit across the territory of another state was a general right in the interests of the community of nations.[307]

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[301] ibid 96–97.

[302] Espa and Marín Durán (n 233) 621.

[303] ibid 625.

[304] ibid 644.

[305] ibid 642.

[306] ibid 635.

[307] Bryan Clark, 'Transit and the Energy Charter Treaty: Rhetoric and Reality' (1998) 3 <http://www.bailii.org/uk/other/journals/WebJCLI/1998/issue5/clark5.html> accessed 9 January 2021.

There are no specific provisions within GATT for the transport and transit of energy, but Article V (Freedom of Transit), is the main transport-related obligation in the GATT.[308] It is based on the 1921 Barcelona Convention and Statute on Freedom of Transit[309] and according to this article goods are in transit when the passage across a country "is a portion of a journey beginning and terminating beyond the frontier" of the country across whose territory the traffic passes" (Art. V:1).

Article V:2 further establishes that:

> 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, or vessels or of other means of transport.

The transit traffic of goods shall not be subject to "unnecessary delays or restrictions" in the transiting country and they are not allowed to levy custom or transit duties but charges reflecting administrative expenses or services rendered may be levied. The transit country is also prohibited in discriminating between WTO Members under its MFN obligation.[310]

Article V specifies conditions for goods in transit and therefore would be applicable to electricity as a good. There is, however, some controversy if it applies to fixed infrastructure like transmission grids or interconnectors but more to “moving” means of transport. The article states "vessels and other means of transport“, but does not list “other means”. It states “aircraft in transit” as an exception, so it can be argued that all other means must be included, including fixed infrastructure. It can be argued that Article V provides limited national treatment obligation as there is not requirement to treat goods in transit the same as goods for the domestic market. As Article V is an inter-state obligation and arguably it might be difficult for governments to force energy companies in their territory to comply with it.[311]

[308] Mireille Cossy, ‘Energy Transport and Transit in the WTO (Global Challenges at the Intersection of Trade, Energy and the Environment Conference, Geneva 22 and 23 October 2009)’ (2009) 2.

[309] Convention and Statute on Freedom of Transit (adopted 20 April 1921, entered into force 31 October 1922) 7 LNTS 11.

[310] Cossy (n 308) 2.

[311] ibid.

There has not been much experience with Article V GATT under the WTO dispute settlement system, but some issues arose with its scope which were settled between the parties.[312]

This provision has been applied by a panel in the dispute *Colombia – Indicative Prices and* in *Restrictions on Ports of Entry*[313] and *Russia — Measures Concerning Traffic in Transit.*[314]

The former case dealt with customs duties and other duties or charges and taxes that importers had to pay was based on indicative prices, rather than on valuation methods set out in GATT and the Agreement on Customs. The latter dealt with to Russian bans and restrictions on traffic in transit by road and rail, from Ukraine, across Russia and destined for Kazakhstan and the Kyrgyz Republic. Neither of the cases is directly applicable to the transmission of electricity.

In some recent accession negotiations, the issue of transit has been discussed and several new Members have in their Accession report committed to that they "would apply [their] laws and regulations governing transit operations and would act in full conformity with the provisions of the WTO Agreement, in particular Article V of GATT 1994" and in its Working Party Report for Ukraine,[315] transit of energy is specifically mentioned in connection with Article V.[316]

Article V has drawn much attention from scholars and WTO members, but it has its shortcomings, and its application has been limited. Nevertheless, it has sparked interest among WTO interest and the Doha Development Agenda negotiations, which have energy services as a negotiating topic, offer a good opportunity to clarify and strengthen the scope and applicability of Article V for the transit of energy, including electricity.[317]

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[312] ibid.

[313] *WTO, Colombia: Indicative Prices and Restrictions on Ports of Entry (27 April 2009) WT/DS366/R*.

[314] *WTO, Russia: Measures Concerning Traffic in Transit (5 April 2019) WT/DS512/R*.

[315] 'Report of the Working Party on the Accession of Ukraine to the World Trade Organization' (World Trade Organization 2008) WT/ACC/UKR/152 <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/ACC/UKR152.pdf&Open=True> accessed 5 December 2020.

[316] Cossy (n 308) 2.

[317] ibid 5–6.

5.8 Differences between EU and WTO

As was noted in the last Chapter, there is a considerable difference from the legal perspective if the electricity export from Iceland would go to another EEA state or not. If the export would be intended for a country outside of the EEA, its rules would not apply. The applicable legal framework for this trade would be the WTO rules most likely. This would be the case if the export would be directed to the US for example.

These two legal systems are quite different and not comparable in many aspects. The rules and the legislative powers are different as well, as their institutional and enforcement mechanisms. In the EU, specific rules apply to sectors, such as electricity, but that is not the case in the WTO. In addition to the sectoral approach, the general principles of EU law are used for the trade in electricity, such as the four freedoms and competition law.[318]

In the WTO legal framework does not consider the special features needed for cross border electricity trade, such as the dependence on physical infrastructure or the specific technical rules needed for access and regulation of the trade.[319] There is also a considerable difference between the systems when it comes to law enforcement. In the EU, the European Commission acts as a "guardian" of the legal regime, whereas there is no such body within the WTO. The EU legal system enables natural and legal persons to rely on legal guarantees against the Member States and their institutions in contrast to the WTO, where only its Members may initiate infringement procedures.[320]

The EU has an institutional framework, such as ENTSO-e, to coordinate, plan, and oversee transmission systems and electricity markets development. In contrast, this is not the case in the WTO.[321] For an institutional comparison of the EU and WTO, see Appendix 2.

Another difference is that the Member States of the EU have independent competition authorities with broad powers to monitor and enforce EU competition laws. They have investigated several cases involving abuse of dominant position in electricity markets and other competition-related matters.[322]

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[318] Gudas (n 53) 44.
[319] ibid 45.
[320] ibid 46.
[321] ibid 47.
[322] ibid 47–48.

The foundation of GATT was to promote trade liberalization and to create a level playing field in international trade. At the same time, GATT defined important exceptions, one of them being free trade areas and customs unions and some have argued that it enabled the establishment of the EC.[323]

The EU and WTO share several similarities, but they are also distinctively different. Both were established to promote trade between states, but the WTO is a worldwide multilateral organization, whilst the EU is geographically contained and integrates states more than the GATT does.[324]

There is also a contrast between how the EU enforces the rules of the internal market and when the EU is confronting a WTO based challenges to its own regulatory measures. This does not only come from the more extensive legal and constitutional framework of the EC than the WTO has, it is also based on the fact that the EU has developed into an entity which is much more than a trade organization.[325] The WTO system is largely based on "don't", while for regulating the energy sector for example, "do" would be more necessary,[326] whereas the EU system has a comprehensive legal framework, including for cross-border trade with electricity.

The EC became an original member of when the WTO was established in 1994, but prior to that the EC had been a *de facto* member in the GATT due to its extensive and exclusive competences on trade policy issues.[327]

The WTO agreement has a status of a Treaty within the EU and is governed by the Vienna Convention of the Law of Treaties between States and International Organizations.[328] The WTO Treaty was concluded as a “mixed agreement” by the EC and the Member States, which is the case when the subject matter of an agreement does not fall under the exclusive competence of the EU but also within that of the Member States.[329]

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[323] Julija Brsakoska Bazerkoska, ‘The European Union and the World Trade Organisation: Problems and Challenges’ (2011) 7 Croatian Yearbook of European Law and Policy 279 <http://www.cyelp.com/index.php/cyelp/article/view/122/85> accessed 26 October 2020.

[324] Gráinne de Búrca and Joanne Scott, ‘The Impact of the WTO on EU Decision-Making’ in G de Búrca and Joanne Scott (eds), *The EU and the WTO: legal and constitutional issues* (Hart Pub 2001) 2.

[325] G de Búrca and Joanne Scott (eds), *The EU and the WTO: Legal and Constitutional Issues* (Hart Pub 2001) 2.

[326] Cossy (n 308) 1.

[327] Brsakoska Bazerkoska (n 323) 281.

[328] Vienna Convention on the Law of Treaties (adopted 23 May 1969, entered into force 27 January 1980) 1155 UNTS 331.

[329] Brsakoska Bazerkoska (n 323) 285.

5.9 The Energy Charter Treaty

The end of the Cold War in the early 1990s created an unprecedented opportunity overcome the previous economic divisions on the Eurasian continent.[330] The prospects for mutually beneficial cooperation between East and West were particularly good in the energy sector. Many of the ex-Soviet Union states were rich in energy resources but major investments were needed to develop them, while at the same time states in the West had a strategic interest to diversify their sources of energy supplies to reduce their dependence on the Middle East.[331]

Against this backdrop the European Energy Charter was created in 1991 and signed at a ministerial conference at The Hague in the Netherlands in 1994.[332] Following this, the Energy Charter Treaty (ECT)[333] and the Energy Charter Protocol on Energy Efficiency and Related Environmental Aspects (PEEREA)[334] were signed in December 1994 and entered into legal force in April 1998.[335]

The aim of PEEREA to have the participating states to formulate clear policy aims to improve energy efficiency and reduce negative environmental impact from energy use.[336] The ECT on the other hand is a major multilateral treaty concerning energy and has the largest geographical and country coverage.[337] It provides a multilateral framework for energy cooperation that is unique under international law. The purpose of the ECT is to promote energy security through the operation of more open and competitive energy markets. The ECT framework also aims to respect the sovereignty over energy resources and the principles of sustainable development.[338] The ECT is *inter alia* based on three major sources that were well established at the time when it was negotiated, i.e. (i) the practice of Bilateral Investment Treaties (BITs),

[330] Andrei Konoplyanik and Thomas Wälde, 'Energy Charter Treaty and Its Role in International Energy' (2006) 24 Journal of Energy & Natural Resources Law 523, 523.
[331] ibid 524.
[332] Pami Aalto, 'The New International Energy Charter: Instrumental or Incremental Progress in Governance?' (2016) 11 Energy Research & Social Science 92, 93.
[333] Energy Charter Treaty (adopted 17 December 1994, entered into force 16 April 1998) 2080 UNTS 95.
[334] Energy Charter Protocol on Energy Efficiency and Related Environmental Aspects (PEEREA) (adopted 17 December 1994, entered into force 16 April 1998) 2081 UNTS 3.
[335] Konoplyanik and Wälde (n 330) 523.
[336] ibid 544.
[337] ibid 523.
[338] 'The Energy Charter Treaty' (*International Energy Charter*) <https://www.energycharter.org/process/energy-charter-treaty-1994/energy-charter-treaty/> accessed 21 November 2020.

(ii) several EU Directives in the field of energy law, and (iii) the GATT section of the WTO.[339]

The focus of the ECT's provisions is in four broad areas:[340]

- the protection of foreign investments and protection against key non-commercial risks;
- non-discriminatory conditions for energy related trade based on WTO rules and provisions to ensure reliable cross-border energy transit flows;[341]
- the resolution of disputes between participating states, and between investors and host states in the case of investments;
- the promotion of energy efficiency and the minimization of the environmental impact of energy production and use.

The provisions in the ECT enhance Article V of the GATT and require the Contracting Parties to facilitate the transit of energy, which is very important for international trade in energy. These requirements fall short direct obligations to create access and transit, and due to this, an effort has been made to enhance this area with a special Transit Protocol.[342] Negotiations started in 2000 but were suspended in 2011 as many states did not accept the draft text.[343]

It is expected that the ECT Contracting Parties are or will be members of WTO and it is seen as an interim bridge in the matters of trade for those countries that are not yet members of the WTO.[344] Some of the rules of the ECT go further than the rules of GATT and facilitate trade in Energy, but it has been criticized that these additions are hardly enforceable.[345]

Energy projects can be very complex and involve huge amounts of money and the ECT's investment protection rules are an important supplement to the WTO system.[346] The ECT does, however, not establish clear rules regarding the construction of energy infrastructure.[347]

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[339] Konoplyanik and Wälde (n 330) 528.

[340] 'The Energy Charter Treaty' (n 338).

[341] ECT Article 7 ('Transit') elaborates on the pre-existing Article V of GATT ('Freedom of transit'). Konoplyanik and Wälde (n 330).

[342] ibid 543.

[343] 'Transit Protocol' (*International Energy Charter*) <https://www.energycharter.org/what-we-do/trade-and-transit/transit-protocol/> accessed 21 November 2020.

[344] Konoplyanik and Wälde (n 330) 541.

[345] Gudas (n 53) 44.

[346] Konoplyanik and Wälde (n 330) 545.

[347] Gudas (n 53) 42.

The ECT investment regime can be divided into two parts, pre-investment, and post-investment. The former is softer, but the latter reaffirms customary international law as manifested in most modern arbitral awards and BITs. In essence, it covers fair treatment and protection of property. Although expropriation is not prohibited under the ECT investment regime, it does stipulate that a full compensation has to be paid based on the so-called ”Hull formula”.[348]

Currently, there are 57 signatories and contracting parties to the ECT. Many of them are from Europe, including Iceland and the UK, as well as the EU itself.[349]

The International Energy Charter,[350] which had ninety signatory states in 2015, is a declaration of political intention aiming at strengthening energy cooperation between nations. It, however, does not bear any legally binding obligation or financial commitment, but maps out common principles for international cooperation in the field of energy.[351]

5.10 The UK-EU Trade and Cooperation Agreement

After lengthy negotiations between the EU and the UK, a comprehensive “Trade and Cooperation Agreement”[352] was finalized on 24 December 2020 and is provisionally applicable since 1 January 2021.[353]

[348] Konoplyanik and Wälde (n 330) 534.

[349] ‘Energy Charter Treaty: Current Status between EU States’ (*Aceris Law - International Arbitration Law Firm*, 25 June 2020) <https://www.acerislaw.com/energy-charter-treaty-current-status-between-eu-states/> accessed 23 November 2020.

[350] Energy Charter Treaty (adopted 17 December 1994, entered into force 16 April 1998) 2080 UNTS 95 (n 333).

[351] ‘The International Energy Charter’ (*International Energy Charter*) <https://www.energycharter.org/process/international-energy-charter-2015/overview/> accessed 23 November 2020.

[352] Trade and Cooperation Agreement Between the European Union and the European Atomic Energy Community, of the one Part, and the United Kingdom of Great Britain and Northern Ireland, of the other Part [2020] OJ L444/14.

[353] ‘The EU-UK Trade and Cooperation Agreement’ (*The European Commission*) <https://ec.europa.eu/info/relations-united-kingdom/eu-uk-trade-and-cooperation-agreement_en> accessed 4 December 2021.

This agreement has been formally approved by all 27 EU countries[354] as well as the UK Parliament and by the European Parliament.[355] As the final step on the EU side, the Council must adopt the decision on the conclusion of the agreement.[356]

According to the UK Prime Minister, Boris Johnson, the UK will take back control its trade policy with the agreement and leave the EU customs union and single market. The Agreement also grants the UK to take back the control of its laws and does not give the ECJ jurisdiction over UK matters.[357]

The chapter on trade in good includes provisions which reaffirm, incorporate, and build upon WTO commitments and principles, facilitate trade, and address non-tariff barriers. The Agreement provides for zero tariffs and zero quotas on all goods that comply with the appropriate rules of origin.[358]

The provisions regarding services establish the treatment and level of access for the UK and the EU to each other's markets and aim to offer businesses and individuals the certainty and support they need to continue to trade services profitably across borders but maintain UK's right to regulate as an independent nation. As is the case with goods, the Agreement significantly builds on the Parties' commitments under WTO rules.[359]

The provisions regarding the energy sector account for 15 pages and 33 Articles.[360] The stated objectives regarding energy are to:

> facilitate trade and investment between the Parties in the areas of energy and raw materials, and to support security of supply and environmental sustainability, notably in contributing to the fight against climate change in those areas.[361]

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[354] 'Brexit: An Agreement has been reached on the future Relationship between the EU and the UK. What Does the Successful Conclusion of the Negotiations Mean?' (*Federal Foreign Office*, 1 January 2021) <https://www.auswaertiges-amt.de/en/aussenpolitik/europa/brexit-where-are-we-now-what-next/2204138> accessed 4 January 2021.

[355] 'Brexit Deal Approved by the European Parliament' (*News - European Parliament*) <https://www.europarl.europa.eu/news/en/press-room/20200128IPR71204/brexit-deal-approved-by-the-european-parliament> accessed 4 January 2021.

[356] 'The EU-UK Trade and Cooperation Agreement' (n 353).

[357] 'UK-EU Tade and Cooperation Agreement. Summary' (*GOV.UK*, 30 December 2020) 5 <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/948093/TCA_SUMMARY_PDF.pdf> accessed 4 January 2021 Foreword.

[358] ibid Article 16 8.

[359] ibid Article 37 11.

[360] The agreement in total, comprises 1,269 pages

[361] Trade and Cooperation Agreement Between the European Union and the European Atomic Energy Community, of the one Part, and the United Kingdom of Great Britain and Northern Ireland, of the other Part [2020] OJ L444/14 (n 352) Article ENER.1 171.

Regarding exemptions for interconnectors between EU and the UK, the agreement states that those shall continue to apply in accordance with the laws of their respective jurisdictions and the terms applicable.[362] The agreement commits both Parties to develop and implement new, efficient trading arrangements for interconnectors by April 2022.[363]

The agreement's spirit reflects continuity concerning energy trade and close cooperation between the UK and the EU on energy matters. This is in line with statements made earlier by Ofgem. Climate change issues, including the emphasis on expanding renewable energy, are high on the agenda, but the agreement also states that matters in the UK will subject to UK law and not EU law. There will be continued discussions regarding new trading arrangement for interconnectors and whilst it is likely that things will continue on a similar path as before, that might pose some uncertainty for new interconnectors to the UK.

6. The Iceland-UK Interconnector

6.1 Practical Considerations

Given the relatively vast potential renewable energy resources to produce electricity in Iceland[364] and the limited domestic demand, the idea of exporting electricity via cable to other countries has been in the discussion for a long time. In 1954, or around the time the Gotland HVDC interconnector was put into operation, Valgarður Thoroddsen, a Managing Director of an electric utility, wrote an article in an Icelandic newspaper about the possibility of exporting electricity from Iceland to the UK.[365] In that article many issues that are still relevant, such as the limited cross border trade in electricity and better use of resources, were mentioned. This topic has been in the discussion on and off ever since and most recently in connection with the adaptation of the third

[362] ibid Article ENER.11 177.

[363] 'UK-EU Tade and Cooperation Agreement. Summary' (n 357) Article 75 17.

[364] Iceland has the highest electricity consumption per capita in the world and still has a lot of potentially unharnessed resources 'Electric Power Consumption (KWh per capita) - Iceland' (*The World Bank*) <https://data.worldbank.org/indicator/EG.USE.ELEC.KH.PC?locations=IS&most_recent_value_desc=false> accessed 3 October 2020.

[365] Valgarð Thoroddsen, 'Flutningur raforku milli landa. Slík viðskipti aukast stórlega í Evrópu næstu ár' *Alþýðublaðið* (Reykjavík, 10 April 1954) 8 5,7.

energy package in Iceland in 2018, again in 2019 and 2020 in relation to the discussion of the potential closure of major heavy industrial users of electricity in Iceland.[366]

The scope of the interconnector project would be quite large, particularly in comparison to the size of Icelandic economy. The project can be divided in three parts in terms of investment:[367]

1. The submarine cable and the convertor stations.
2. Electricity production in Iceland, development of new capacity and better utilization of existing systems.
3. The upgrade of the Icelandic transmission system.

The estimated cost of the project varies depending on scope, how what capacity the interconnector has in terms of megawatts,[368] how much new power development is needed and how the upgrade of the transmission system in Iceland will be carried out.

As has been discussed before, the technology needed to transmit electricity and minimize transmission losses over such a long submarine cable is High Voltage Direct Current (HVDC). Studies for the project have assumed 700 – 1,000 MW capacity of the cable, but the most recent comprehensive study assumed 1,000 MW after study of other interconnector projects and taking into consideration the Icelandic electricity system.[369] For comparison, the current installed electricity production capacity in Iceland is around 3,000 MW and annual electricity production around 19.5 TWh.[370] The cost for the cable and convertor stations was estimated to be of the order of magnitude of 2.5 – 3.0 billion EUR,[371] the project specific cost of up-grade of the Icelandic transmission system to be around 400 million EUR[372] and the cost of additional

[366] Ketill Sigurjónsson, 'Lokun álversins í Tiwai Point og veikleikar stóru íslensku orkufyrirtækjanna' (*Kjarninn*, 4 August 2020) <https://kjarninn.is/skodun/2020-08-03-lokun-alversins-i-tiwai-point-og-veikleikar-storu-islensku-orkufyrirtaekjanna/> accessed 31 October 2020.

[367] 'Raforkusæstrengur milli Íslands og Bretlands, kostnaðar- og ábatagreining' (Kvika, Pöyry 2016) 20 <https://www.stjornarradid.is/media/atvinnuvegaraduneyti-media/media/acrobat/raforkusaestrengur-milli-islands-og-bretlands-kostnadar-og-abatagreining.pdf> accessed 31 October 2020.

[368] There are economies of scale in the interconnection, see: Arturs Purvins and others, 'Submarine Power Cable between Europe and North America: A Techno-Economic Analysis' (2018) 186 Journal of Cleaner Production 131, 142.

[369] 'Raforkusæstrengur milli Íslands og Bretlands, kostnaðar- og ábatagreining' (Kvika, Pöyry 2016) 21 <https://www.stjornarradid.is/media/atvinnuvegaraduneyti-media/media/acrobat/raforkusaestrengur-milli-islands-og-bretlands-kostnadar-og-abatagreining.pdf> accessed 31 October 2020.

[370] 'Orkutölur 2019' (*Orkustofnun*) <https://orkustofnun.is/gogn/os-onnur-rit/Orkutolur-2019-islenska-A-4.pdf> accessed 31 October 2020.

[371] 'Raforkusæstrengur milli Íslands og Bretlands, kostnaðar- og ábatagreining' (n 368) 213.

[372] ibid 221.

dedicated power production to be in the range of 2.5 – 3.0 billion EUR[373] as well. The total cost was therefore assumed to be of the order of magnitude of 6 billion EUR.[374] The costs would also partially depend on the landing points for the cable. Landsnet has explored several landing points on the south and east coast of Iceland. A landing point in the east would mean a shorter interconnector, but more requirements for the strengthening of the transmission system between the south and the east. A landing point in the south on the other hand would mean less need for investment in the transmission system but around 400 km longer submarine cable.[375]

The electricity market in Iceland is isolated as it has no connection to other markets, but it is not defined as "a small isolated system" under Directive 2009/72/EC, which gave certain exemptions for small electricity systems.[376] It is also defined as one single geographic market by the Icelandic competition authority.[377] An interconnection would most likely change this definition and have an impact on the Icelandic market, but to which degree would depend on the business model of the interconnector and its terms and conditions.

To put the estimated total cost in perspective, then the GDP of Iceland was around 20 billion EUR in 2019.[378] The total estimated project cost would therefore be around 30% of the annual GDP in Iceland but spread over several years. This would not be unique in the history of Iceland as the construction of the Búrfell power station along the Alusuisse aluminium smelter in the late 1960s and the construction of the Kárahnjúkar power plant and the Alcoa smelter in the years 2003-2007 were also very sizeable projects in comparison to the GDP of Iceland at the time.

There are many societal, legal, environmental, economic and policy issues related to the overall project, and the three parts of the investments are integrated such that it is impossible to look at the interconnector in isolation, but this thesis

[373] ibid 220.

[374] ibid 222.

[375] ibid 204–205.

[376] Cf, Article 2 para.26 Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the Promotion of the use of Energy from Renewable Sources and Amending and Subsequently Repealing Directives 2001/77/EC and 2003/30/EC (Text with EEA Relevance) [2009] OJ L140/16 (n 180).

[377] 'Capacity for Competition Investing for an Efficient Nordic Electricity Market' (2007) Report from the State oion Authorities 1/2007 14 <http://www.samkeppni.is/media/skyrslur95-07/Nordic_report_capacity_for_competition_2007.pdf> accessed 1 November 2020.

[378] 'Hagvöxtur 4,7% á 4. ársfjórðungi og 1,9% yfir árið í heild' (*Hagsofa Íslands*, 28 February 2020) <https://www.hagstofa.is/utgafur/frettasafn/thjodhagsreikningar/thjodhagsreikningar-2019-aaetlun/> accessed 31 October 2020 using EUR/ISK of 150.

predominantly looks at the submarine cable part of it and particularly the legal framework and legal issues in relation to the connection and operation of the interconnector.

The ownership and structure of the project could be done in various ways. One question, for example, is what form the operating entity would take. Three types of structures are common, i.e. (i). Private ownership, (ii) Consortium and (iii) Public Private Partnership but often cable projects us a hybrid model mixing some of these structures for optimization purposes.[379]

As the interconnector project is very large, would have a huge economic impact and will need several enabling factors it is likely that a specialized legislation would be needed for many aspects of it, at least on the Icelandic side.

As has been mentioned, Iceland could technically connect to various countries, but the discussion will now focus on an interconnector between Iceland and the UK and connection to the Icelandic and the UK grid.

Although no decisions have been made regarding the landing point on the UK side, it is likely that it would end up in Peterhead in Scotland, some 1,070 km away from South-East Iceland.[380]

6.2 Energy Law in the UK

The United Kingdom (UK), which is comprised of England, Scotland and Northern Ireland, is a unitary State. The UK approaches international law on a dualist basis.[381] As the UK does not have a written constitution, the doctrine of Parliamentary Sovereignty gives the Parliament, in theory, absolute freedom to regulate and organize the energy sector, but in practice the situation is more nuanced.[382]

Over the years the supremacy of EU law, for all practical purposes, has been accepted by the British courts and legislation interpreted in accordance with the European Convention on Human Rights (ECHR) to the degree that was possible.[383]

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[379] 'North Atlantic Energy Network' (n 7) 10.

[380] ibid Appendix A 12.

[381] Greg Gordon, Aileen McHarg and John Paterson, 'Energy Law in the United Kingdom' in Martha M Roggenkamp and others (eds), *Energy law in Europe: national, EU, and international regulation* (3rd edn, Oxford University Press 2016) 1056.

[382] ibid.

[383] ibid.

Following Brexit, this has changed, but it can be noted that the UK government has stated that it is committed to membership of the ECHR.[384]

Despite not being constitutionally based, there is devolution of legislative and executive powers to Scotland, Wales and Northern Ireland, which has the most competence in energy policy of the three.[385]

The structure of the institutions that govern the energy industries is generally fragmented and lacking order and the regulatory and policy functions are carried out by many elected and non-elected bodies.[386] The Department of Energy and Climate Change (DCC) is mainly responsible for exercising energy policy at the government level, but other departments, particularly the Treasury, have a saying in the energy policy of the UK.[387]

The UK was one of the leading countries in liberalizing its electricity sector and now has a fully liberalised and privatised electricity market. It started with the Energy Act 1983 that opened the supply market beyond the existing area boards that existed at the time.[388]

The programmes for privatization were rolled out along jurisdictional lines, i.e. there were separate programmes for England and Wales, Scotland, and Northern Ireland.[389] Currently the electricity supply industry in the UK has two separate wholesale markets, one in Great Britain and the other in Northern Ireland, but with an interconnection between the two.[390] The UK market was historically not connected to other markets but now has several existing interconnections and more are being planned.[391] The first interconnector to the UK was a 160 MW cross connection to France that was completed in 1961[392] but currently the UK has 5,000 MW of

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[384] Department for Exiting the European Union, *The Future Relationship between the United Kingdom and the European Union* (HM Government 2018) Cm9593 52 <https://nls.ldls.org.uk/welcome.html?ark:/81055/vdc_100062857375.0x000001> accessed 8 November 2020.

[385] Gordon, McHarg and Paterson (n 381) 1056.

[386] ibid 1058.

[387] ibid.

[388] 'Electricity Regulation in the UK: Overview Electricity Market' (*Pracitcal Law*) <https://uk.practicallaw.thomsonreuters.com/1-523-9996?__lrTS=20170927153522149&transitionType=Default&contextData=(sc.Default)&firstPage=true> accessed 8 November 2020.

[389] ibid.

[390] Gordon, McHarg and Paterson (n 381) 1089.

[391] ibid.

[392] Massimo Guarnieri, 'The Alternating Evolution of DC Power Transmission [Historical]' (2013) 7 IEEE Industrial Electronics Magazine 60, 61.

interconnection capacity, after the NEMO link came into operation in 2019 and another 6,700 MW in development.[393] One interconnector (BritNed/1,000 MW) that is currently in operation is operating with exemption and one in development (ElecLink/1,000 MW) will operate with exemption.[394]

The legal and regulatory arrangements governing the UK electricity supply industry market are still based on the privatization statues, i.e. the electricity Act 1989[395] (as amended and supplemented) and the 1992 Order.[396] [397] The Electricity Act 1989 sets out a framework for the licensing regime and describes the duties of the regulator, the Gas and Electricity Markets Authority (GEMA), which operates through the Office of Gas and Electricity Markets (Ofgem) and the Secretary of State for Energy and Climate Change (Secretary of State).[398] There are six categories of licensing activities, in addition to the four described in Chapter 2.3, the operation of an interconnector and the provision of a smart communication service is also licensable.[399]

There are three regional companies in GB that operate, maintain and operate the electricity transmission system, each in their distinct geographical area. One in England and Wales, one in southern Scotland, and one in northern Scotland and the Scottish islands groups. The overall system as is operated by a single company, which is responsible for ensuring its stable and secure operation.[400] Following the privatizations in the UK in the 1980s and 1990s, these companies are privately owned. In contrast, the transmission system in Northern Ireland is still owned and operated by a state-owned enterprise.

The UK government has set out its policy with a White Paper from the DECC, which sets the goals for securing affordable and low-carbon electricity.[401] The White

[393] See 'Electricity Interconnectors' (n 33) and Appendix 1.
[394] ibid.
[395] Electricity Act 1989 (UK).
[396] The Electricity (Northern Ireland) Order 1992 (UK) Review pending following Brexit.
[397] Gordon, McHarg and Paterson (n 381) 1092.
[398] 'Electricity Regulation in the UK: Overview Electricity Market' (n 388) 6.
[399] Gordon, McHarg and Paterson (n 381) 1092.
[400] 'The GB Electricity Transmission Network' (*Ofgem*) <https://www.ofgem.gov.uk/electricity/transmission-networks/gb-electricity-transmission-network> accessed 8 January 2021.
[401] 'Planning Our Electric Future: A White Paper for Secure, Affordable and Low-carbon Electricity' (Department of Energy & Climate Change 2011) <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/48129/2176-emr-white-paper.pdf> accessed 9 November 2020.

Paper sets out the Electricity Market Reform (EMR) which is a cornerstone of the Energy Act 2013 which establishes the legislative framework. It includes i.a. Contracts for Difference (CfD), which is the government's main mechanism for supporting low-carbon electricity generation and rules for a Capacity Market.[402]

The CfDs are intended to incentivise investment in renewable energy by providing developers of projects with high upfront costs and long lifetimes, protection from market price volatility and by protecting consumer from increased burden when electricity prices are high.[403]

The White Paper was issued in 2011 and a new White Paper has been expected for some time now which is expected to state even more support for greener future.[404]

The UK has introduced an interconnector mechanism which is called "cap and floor" to facilitate the development of interconnectors and it has been available since 2014.[405] As the name implies this model sets a maximum and a minimum on the charges paid for the use of the interconnector. A "cap and floor" regime could apply for exemption from market rules but Ofgem has recommended that developers of interconnectors apply for either "cap and floor" or merchant regime and the UK has already approved six cross-border transmission projects under the "cap and floor" regime.[406]

The "cap and floor" regime is a part of the UK Integrated Transmission Planning and Regulation (ITPR)[407] which was set up to review arrangements for planning and delivering the onshore, off-shore and cross-border electricity transmission networks with the aim to facilitate coordinated, economic, and efficient development of the electricity system in the long term.[408]

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[402] 'Policy Paper Contracts for Difference' (*GOV.UK*, 2 March 2020) <https://www.gov.uk/government/publications/contracts-for-difference/contract-for-difference> accessed 9 November 2020.

[403] ibid.

[404] Naomi Harris, 'What to Expect and How to Plan for the Energy White Paper' (*WA Communications*, 5 October 2020) <https://wacomms.co.uk/what-to-expect-and-how-to-plan-for-the-energy-white-paper/> accessed 9 November 2020.

[405] Gudas (n 53) 141.

[406] ibid 142.

[407] 'Decision to Roll out a Cap and Floor Regime to Near-Term Electricity Interconnectors' (Ofgem 2014) 2 <https://www.ofgem.gov.uk/sites/default/files/docs/2014/08/decision_cap_and_floor_near_term_electricity_interconnectors.pdf> accessed 14 November 2020.

[408] 'Integrated Transmission Planning and Regulation' (*Ofgem*) <https://www.ofgem.gov.uk/electricity/transmission-networks/integrated-transmission-planning-and-regulation> accessed 14 November 2020.

The “cap and floor” regime offers a compromise between the fully regulated model where risk is borne by consumers and the merchant model where the risk lies entirely on the shoulders of the promoters of the interconnectors.[409] In Europe variations on these models have developed that have provided a spectrum of options for the investors of interconnectors.[410]

The business model for an interconnector between Iceland and UK has not been decided but in it is likely that it would be a one-way link exporting renewable electricity from Iceland to the UK and possibly using CfDs. An arrangement like that would likely require a bespoke contract to be negotiated, potentially akin to the contract made with the Hinkley Point power station.[411]

6.3 Third Party Access, the Right to Connect

Before addressing the question of connection of the interconnector, it should be noted that according to the Electricity Act 65/2003, Landsnet has a monopoly on erecting new transmission infrastructure (“Flutningsvirki”).[412] The scope of the law concerns: “Generation, transmission, distribution and trade in electricity on Icelandic territory, regardless of energy source.”[413] An interconnector is not defined in the Act, but according to the definitions, “Flutningsvirki” means “Electrical line and associated equipment for the transmission of electricity” and “Electrical line” (“Raflína”) means “a collection of conductors, insulated materials and associated equipment for the transmission of electricity between two points in the electrical system”. “Electrical system” (“Raforkukerfi”) means “All the equipment used for the generation, transmission and distribution of electricity and comprises a functioning whole.”[414] It is clear that electrical cables are not excluded, but it could be argued that an interconnector is excluded as it would connect to the Icelandic electricity system to an electricity system of another country and in “System planning” section of the Act, Article 9a, paragraph 6, it is stated: “The connection of the electricity system of the

[409] ‘Greenlink Interconnector Limited Greenlink Interconnector Project Application for Cap and Floor Regulation in Ireland’ (2019) 9 <https://www.cru.ie/wp-content/uploads/2020/03/CRU20042a-Non-Confidential-Greenlinks-Cap-and-Floor-Request.pdf> accessed 14 November 2020.

[410] ibid 19.

[411] Simon Moore, Guy Newey, and Policy Exchange (Think tank), *Getting Interconnected: How Can Interconnectors Compete to Help Lower Bills and Cut Carbon?* (2014) 57.

[412] Article 9 Raforkulög, nr. 65/2003.

[413] Article 2 ibid.

[414] Translations by the author

country to the electricity system of another country via a submarine cable is governed by the government's policy on the development of the electricity transmission system."

What is clear, is that the legislator intends to control the development of the potential interconnection of the Icelandic electricity system, and as was discussed in Chapter 3 in relation to the adaptation of the third energy package, it was stated that it would not entail any obligation or duty on the behalf of the Icelandic government to connect to the EU's electricity system.

Regulation 714/2009 was nevertheless included in the package, but in the notes to the parliamentary resolution, it was stated that "As Iceland does not trade in electricity across borders, the regulation is not relevant in this country." This regulation, therefore, would need to be adapted in Iceland. However, the predecessor of 714/2009, regulation 1228/2003 which has been repealed, was adapted in Iceland by regulation 284/2010[415] in March 2010 on the basis of article 45 of the electricity Act 65/2003 which states that the Minister is authorized to issue further provisions on the implementation of the electricity Act in a regulation.

Regulation 714/2009 replaces regulation 1228/2003, but makes frequent references to it and in Recital 31 is stated:

> Given the scope of the amendments that are being made herein to Regulation (EC) No 1228/2003, it is desirable, for reasons of clarity and rationalisation, that the provisions in question should be recast by bringing them all together in a single text in a new Regulation.

Further, in Article 25 of Regulation 714/2009, it is stated that:

> Regulation (EC) No 1228/2003 shall be repealed from 3 March 2011. References made to the repealed Regulation shall be construed as references to this Regulation and shall be read in accordance with the correlation table in Annex II.

As Regulation 284/2010 has not been repealed, there is ambiguity whether the provisions of Regulation 1228/2003 are effectively still in force.

Regulation 714/2009 and 1228/2003 both state that*:*

> Charges applied by network operators for access to networks shall be transparent, take into account the need for network security and reflect actual costs incurred insofar as they correspond to those of an efficient and structurally comparable network operator and are applied in a non-discriminatory manner. Those charges shall not be distance-related*.*[416]

[415] Reglugerð um innleiðingu reglugerðar Evrópuþingsins og ráðsins (EB), nr. 1228/2003 frá 26. júní 2003, um skilyrði fyrir aðgangi að neti fyrir raforkuviðskipti yfir landamæri nr. 280/2003.

[416] Article 14, para. 1 of regulation 714/2003 and Article 4, para. 1 of regulation 1228/2003 respectively.

Taken together with Article 9, item 1 of the electricity Act 65/2003 which specifies the duty of the Icelandic TSO to connect customers, as was discussed in Chapter 3.3.2, Landsnet should supply a connection, for a charge reflecting actual costs, on non-discriminatory basis and a connection should not be unreasonably withheld.

Regulation 714/2009 explicitly states that: "Transmission system operators (TSOs) shall endeavour to accept all commercial transactions, including those involving cross-border-trade"[417], but there is not a similar provision in regulation 1228/2003. Even if it is quiet on this point, on the basis of Article 9 item 1 alone, in isolation, Landsnet should provide a connection to a counterparty that wants to connect to the electricity grid, if certain conditions are fulfilled and the associated costs are borne by the party requesting access.

Given that an interconnector would get an exemption to operate with the merchant model, as will be discussed in the next chapter, it seems that it would get access to the grid, if it would fulfil certain conditions.

Since the interconnector would need to be around 1,000 MW to be economically viable, the electricity transmission system in Iceland would need to be upgraded as was discussed in the last chapter and it would also mean that new generation capacity would need to be installed. How much would depend on various factors, such as future domestic demand for electricity, how much reserve is in place with current installed capacity, what the capacity of the interconnector would be and what its utilization rate would be. Under almost all scenarios, the new installed capacity would need to be significant, unless major current demand goes off-line. This would mean that new power plants would need to be approved through the so-called master plan.[418] Although the process is objective to a degree, it also entails some political decision making on the national level. It is therefore clear that major investments and construction projects would need to be implemented domestically that would need the associated permits, which again, would need to go through certain steps. It is, for example, likely that the up-grade of the transmission system and the new power plants needed to enable sufficient power delivery for the interconnector might need to go through a joint environmental impact assessment according to Article 5, para. 2 of the Act no.106/2000[419] on environmental impact assessments, which states that if various

[417] Annex 1, para. 1.1, regulation 714/2003

[418] Lög um verndar- og orkunýtingaráætlun nr. 48/2011.

[419] Lög um mat á umhverfisáhrifum, nr. 106/2003.

constructions in are the same locations or are mutually dependent, their environmental impacts should be assessed jointly.[420] It should be noted though, that the next paragraph of the Act, states a potential exemption from environmental impact assessment if a certain construction in the interest of the public or matters for the security of the country. As this concerns multiple constructions and Iceland is very rich of renewable energy and energy security should most likely not be an issue, it is unlikely that this exemption is relevant. In any case even if the connection of the interconnector *per se* might not need political decision making, the sheer size of the project and complexity of the interconnector project would call for several decisions and public policy making.

If all the enabling factors are in place and conditions are met, there would be the question of the cost of the connection for the interconnector. According to the annual account for Landsnet for 2019, the total assets of the company by the end of 2019 were around 850 million USD.[421] The regulatory asset base is slightly different, but the two should not differ much. The total electricity transmission volume in 2019 was roughly 18.7 TWh.[422] If the interconnector would be 1,000 MW and have a utilization rate of around 95%, the electricity infeed would be around 8.3 TWh. As the estimated cost of transmission upgrade for the interconnector is around 400 million EUR, it means that the regulated asset base pr. TWh would increase.[423] This might imply a considerable connection fee, but the picture is more complex as utilization rates, losses and ultimate allocation for the regulated asset base would need to be explored in detail.[424]

On the other side of the ocean, the interconnector would need access to the UK grid. The UK had implemented regulation 714/2009 and in the EU-UK trading

[420] See ruling on joint assessment for power plants and transmission lines *Sameiginlegt mat á umhverfisáhrifum álvers á Bakka við Húsavík, Þeistareykjavirkjunar, Kröfluvirkjunar II og háspennulína frá Kröflu og Þeistareykjum að Bakka við Húsavík,* álit Skipulagsstofnunar nr. 201020001, 24 November 2010.

[421] Landsnet, 'Landsnet, Ársreikningur 2019' (*Landsnet*, 2020) <https://www.landsnet.is/library/Skrar/Skyrslur-og-stefnur/Fjarhagsupplysingar/2019/Arsreikningur_LN_2019.pdf> accessed 7 November 2020.

[422] 'Orkutölur 2019' (n 370) The difference from generated electricity is own use in generation and losses. Produced electricity that does not go through the grid is neglible.

[423] Using fx EUR/USD of 1.19, 478 MUSD/8.3 TWH = 57 MUSD/TWh and 850 MUSD/18.7 TWh = 45 MUSD/TWh

[424] Estimated cost calculation for 1,000 MW @ 95% gives a rate of ca. $6/MWh, compared to average revenue of $7.5/MWh according to Landsnet's annual account 2019, see 'Áætlaður kostnaður vegna flutnings' (*Landsnet*) <https://www.landsnet.is/markadurinn/gjaldskra/reiknivel-stornotendur/> accessed 7 November 2020.

agreement it is stated, as mentioned, that exemptions based on it will continue to apply but is silent on future interconnectors except new agreements will be made.[425]

6.4 Interconnector Model, Exemption

As has been discussed, there are two fundamental approaches for investment in interconnection capacity, either the regulated model or the merchant model. For the Icelandic interconnector, the question would be if Landsnet would operate the interconnector on a regulated basis or if it would be operated on the merchant model. As has been discussed, the needed up-grade of the transmission system in Iceland would require heavy investment for Landsnet, almost doubling its balance sheet, but the investment in the interconnector would be a multiple of that and involving considerable risk, so it would not be prudent, if not impossible for Landsnet, to invest in the interconnector. On the economic side, it is unlikely it would get financed at all, unless there would be a contracted long-term revenue stream with a strong counterparty for the sale of the electricity. Hence the interconnector would need to be based on the merchant model. The developer of the interconnector would therefore need to apply for an exemption from the regulated model. Given that the project would get the go ahead on the political side in Iceland, the conditions would be based on Article 17 of regulation 714/2009. There is uncertainty of the UK side how exactly the conditions would be set out, but as discussed, it is likely to be like the current framework. In any case ACER would not be involved meaning that the national regulators on both sides of the interconnector would need to approve the exemption for the merchant model, but not subject to the final approval of ACER or the Commission as was discussed in Chapter 6.2.

As was discussed in Chapter 4.11.2, new interconnectors must cumulatively meet six criteria to operate on a merchant basis according to Regulation 714/2009.[426]

If these conditions are met, the interconnector can get an exemption from Article 16(6) of the Cross-Border Regulation 714/2009, on allocation of Revenues and the provisions under UK and Icelandic law implementing the Third Package Electricity Directive, as follows:

- Article 9 of the Third Package Electricity Directive – Unbundling

[425] See Chapter 5.10

[426] Now cf. Article 63 of Regulation 2019/943

- Article 32 of the Third Package Electricity Directive – Third Party Access

- Article 37(6) and 37(10) of the Third Package Electricity Directive – Approval of Tariffs

The business model for the interconnector has not been decided, but it is assumed that electricity sales would be based on a long-term contract, such as CfD, with a foreseeable revenue stream. It is also assumed that the power flow will be predominantly, if not exclusively, from Iceland to the UK.[427] The conditions are therefore based on a hypothetical but likely construct if the interconnector were to be built. Each of these conditions will now be discussed:

a) The investment must enhance competition in electricity supply.

The interconnector is expected to yield considerable benefits in terms of security of supply, competitiveness, and sustainability of the electricity markets in both the GB and Iceland and in essence is expected to increase the competition in electricity supply.

The interconnector will give producers in Iceland that do not have any ownership ties with producers in GB access to GB electricity market and thereby increase the number of sellers and lower market concentration in GB. The connection will also lead to a more optimal allocation of generation resources in Iceland and increase the share of renewable electricity in GB. The electricity production in Iceland is uncorrelated to the production in GB and, therefore, would contribute to better security of supply for GB market.

Even if it is foreseen that the interconnector will mostly export electricity from Iceland to GB, the connection would also increase the security of supply in Iceland, as the electricity production would be increased and in a very adverse situation, it would be possible to import electricity from GB to Iceland.

The interconnector would open a large new market for Icelandic producers and larger power projects could be undertaken with the associated economies of scale and would enable better utilization of hydropower production in tandem with electricity produced by wind. It is assumed that the interconnector will be, at least partially, accessible to all market players on an open, transparent, and non-discriminatory basis and would not lead to enhancement of the dominant position of Landsvirkjun.

[427] As the UK is defined as two markets (see page 65), Great Britain and Northern Ireland, henceforth the discussion will refer to the GB market.

It should be noted that the operations of the interconnector could lead to considerably higher electricity prices in Iceland, but this is not a foregone conclusion. As the cost of the transmission over the interconnector is relatively high,[428] there could be a significant price differential between the markets[429] without moving prices in Iceland up. It should also be noted that the cost of the electricity itself is around a third of the typical household electricity bill in Iceland.[430] There might be a greater impact on industrial users for the long term. This would also depend on the development of the electricity market in Iceland long term and the need for new power plants.[431]

The benefits of an increased competition are likely to result in a lower mark-up of electricity price over the marginal cost of producing electricity, leading to lower prices for consumers in the relevant market.

b) The level of risk attached to the investment is such that the investment would not take place unless an exemption is granted.

The interconnector is a huge investment, and as discussed in Chapter 6.1, it would cause a major risk to Iceland to have it in the regulated asset base of Landsnet. There are several risks that a developer of the interconnector would face, such as construction and technical risks, environmental opposition, operational risk and regulatory risk outside the scope of the exemption, such as changes in government policy, which could pose a risk to the financial returns associated with the project.

Given the risk level of the interconnector, the investors would need to have the assurance that they could benefit from the potential upside of the project, not only face the downside risks to the project returns. An exemption would also provide more stability of forecasted cash flows and make the project bankable.

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[428] Around EUR 34/MWh on 2020 price level, see 'Charting a Growth Path for Iceland' (McKinsey & Company 2012) 72 <https://www.stjornarradid.is/media/forsaetisraduneyti-media/media/Skyrslur/charting-a-growth-path-for-iceland-2012.pdf> accessed 15 November 2020 using https://www.inflationtool.com/euro/2011-to-present-value?amount=30 .

[429] Wholesale prices in Iceland have been around ISK 4,500/MWh or ca. EUR30/MWh see Jón Vilhjálmsson and Jónas Hlynur Hallgrímsson, 'Raforkuverð og þróun samkeppni á raforkumarkaði' (Efla, verkfræðistofa 2019) 36 <https://www.stjornarradid.is/library/02-Rit--skyrslur-og-skrar/190410%20%C3%9Er%C3%B3un%20raforkuver%C3%B0s%20og%20samkeppni.pdf> accessed 7 November 2020.

[430] 'Raforkusæstrengur milli Íslands og Bretlands, kostnaðar- og ábatagreining' (n 368) 134.

[431] So-called levelized cost of electricity for new power plants in the utilization catagory of third phase of the Masterplan is expected to be ca. $30-$50/MWh see Guðni A Jóhannesson and others, 'Kortlagning á eftirspurn innlendra aðila eftir raforku næstu árin og mat á afgangsorku í íslenska raforkukerfinu. Skýrsla til iðnaðar- og viðskiptaráðherra' (Orkustofnun 2016) 9 <https://www.stjornarradid.is/media/atvinnuvegaraduneyti-media/media/acrobat/skyrsla_v3_raforkuthorf_fyrirtaekja_final-5--7.07.2016--final.pdf> accessed 15 November 2020.

An exemption would therefore be essential to allow the investors of the interconnector to have the opportunity to earn adequate returns to compensate for the risk that they would be taking.

c) The interconnector must be owned by a natural or legal person which is separate at least in terms of its legal form from the system operators in whose systems that interconnector will be built.

The ownership of the interconnector has not been decided, but it is very likely that the owners would be international institutional investors, possibly with some ownership from the vendors of the equipment or the engineering company taking on the project. These parties would most likely not have any links with energy producers or suppliers in Iceland or in GB and the interconnector would be in a fully separate and independent legal entity.

d) Charges are levied on users of that interconnector.

It is foreseen that the investment in the interconnector and its operating costs will be fully recovered from the revenues from the transmission from its users, and its economic foundation will be the price differential between the Icelandic and GB markets. No cost associated with the interconnector will be recovered through regulated transmission charges. The cost of the associated upgrades in the domestic transmission system will be covered by domestic transmission costs of electricity feeding the interconnector.

e) Since the partial market opening referred to in Article 19 of Directive 96/92/EC of the European Parliament and of the Council of 19 December 1996 concerning common rules for the internal market in electricity, no part of the capital or operating costs of the interconnector has been recovered from any component of charges made for the use of transmission or distribution systems linked by the interconnector.

It is foreseen that the owners of the interconnector will not have any ownership in the transmission or distribution systems in Iceland or in GB directly or indirectly linked to the interconnector, and no parts of the interconnector investment or its operating costs will be recovered through revenues from their use.

f) The exemption must not be to the detriment of competition or the effective functioning of the internal market in electricity, or the efficient functioning of the regulated system to which the interconnector is linked.

The electricity import into GB will slightly reduce market concentration, which has fallen in the last couple of decades[432], but the imported electricity from Iceland will not be a large share of the market. The expected 1,000 MW/8.3TWh, will represent ca. 2% of the power and 3% of the electricity production in GB, respectively.[433] Depending on how the interconnector is operated, its share of peak electricity supply and flexible electricity supply in GB could be higher than of the total production, but in any case, its market share will not be significant.[434]

The situation in Iceland is more complicated in this regard. The exported electricity would be a much larger part of the market or roughly 30% of the annual electricity production. Normally, National Regulations Agencies do not want to see price increases in the market, and the same could go for the competition authorities. Currently, the price discovery in the Icelandic market is limited as there is no power market akin to Nord Pool or EEX and most of the electricity to the large industrial users are done on a bilateral basis. Landsvirkjun publishes wholesale prices,[435] and retail prices are transparent and easily comparable,[436] but even relatively small users can ask for quotations. The National Regulator and the Competition Authority might set conditions for the access to the interconnector and possibly require conditions such that at least part of its capacity would be allocated in an open, competitive, and transparent manner in order to enhance the competition in the market. To prevent

[432] The Herfindahl-Hirschman Index for domestic, industrial and commercial electricity sales market concentration in the UK has fallen from ca. 10,000 in 1989 to around 1,000 in 2019 'Special Feature – Competition in UK Electricity Markets' (Department for Business, Energy & Industrial Strategy 2020) 85 <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/920639/Competition_in_UK_Electricity_Markets.pdf> accessed 15 October 2020.

[433] Vanessa Martin and George Creasey, 'UK Electricity April to June 2020' (*Electricty Statistics*) 24 <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/920610/Electricity_September_2020.pdf> accessed 17 October 2020.

[434] See discussion on peak and flexible power in GB 'Regulatory Arrangements for East West Cable One Ltd's Two Proposed GB-Irish Electricity Interconnectors' (*Ofgem*, 2 July 2008) 24 <https://www.ofgem.gov.uk/sites/default/files/docs/2008/07/ewc-exemption-consultation-for-ew1-and-ew2_0.pdf> accessed 16 November 2020.

[435] 'Heildsöluverð birt fyrir árið 2020' (*Landsvirkjun*, 19 August 2020) <https://www.landsvirkjun.is/fyrirtaekid/fjolmidlatorg/frettir/frett/heildsoluverd-birt-fyrir-arid-2020/> accessed 17 November 2020.

[436] 'Þú velur hvar þú kaupir raforku' (*Aurbjörg*) <https://aurbjorg.is/#/rafmagn> accessed 18 November 2020.

hoarding of capacity,[437] capacity allocations might be subject to so-called Use-it-or-lose-it conditions, such that if it is sold, it must be used. Otherwise, it will be resold.[438] It is likely that the electricity sold through long term power purchase agreement, such as CfD, so the interconnector capacity will be captive from the beginning, but even if a small part of the capacity of the interconnector would be in play, it could increase liquidity and competition in the Icelandic electricity market.

Even if the terms of the electricity sale are not clear, but it is very likely that the interconnector project could be constructed in such a way that it would satisfy conditions for exemptions according to Article 17 of Regulation 714/2009[439] with some requirements regarding enhancement of competition in the Icelandic market.[440]

7. Conclusion

Energy, including electricity, has been for a long time mostly outside of international legal frameworks. This has mainly been because energy was considered a matter of nations' sovereignty, and state-owned enterprises usually handled energy matters. In recent decades and years, this has been gradually changing. Market forces have impacted the development of the legal framework, including requirements for "unbundling" and increased competition. Higher awareness to combat climate change with renewable energy has also had an impact. Following this development, alongside advances in technology, the benefits of cross-border trade in electricity have come more into focus.

The establishment of the ECT, its investment protection regime and enhanced rules for access by expanding Article V of GATT, and further discussions and development under the WTO framework in the Doha round, have also contributed to the development of international trade in electricity, although there are still some steps to be taken.

The legislation in Iceland has followed the international trends in the development of legal framework for electricity, including "unbundling", and has mostly

[437] Although most likely not an issue with the Icelandic interconnector, transmission congestion can be gamed for profit, see Bethany McLean and Peter Elkind, *The Smartest Guys in the Room: The Amazing Rise and Scandalous Fall of Enron* (Portfolio 2003) 264–283.

[438] Mark Bartholomew, 'The UK Electricity Market - From Pool to Exchange' in Martha M Roggenkamp and François Boisseleau (eds), *The Regulation of Power Exchanges in Europe* (Intersentia 2005) 89.

[439] Now cf. Article 63 of Regulation 2019/943

[440] If 10% of the capacity of the interconnector would be dynamic, this would represent roughly 20% of the current general electricity market in Iceland.

mirrored the EU legislation. From the legal perspective most of the legal elements for the interconnector project is in place in Iceland, although some additional laws would need to be implemented.

The legal framework for international trade in electricity is not comprehensive, but EU law for cross-border transmission and electricity trade has developed significantly. Guidelines for third party access, network codes, and the rules for the investment and operations of interconnectors establish good foundations for creating the internal market in electricity. Financial support for projects, like the PCI, and the supranational coordination within the EU, have accelerated this development.

The interconnection of the Icelandic electricity market to other markets remains a political question in Iceland. Still, if a decision to that extent is made, the legal framework for the interconnection to other countries within the EEA is available. This interconnection would call for a political decision to implement further associated EU legislation in Iceland. This decision would relate to several topics that are political, such as which options to produce electricity should be used, and which not, and the industrial policy in Iceland.

and the protection of the interconnector investment could be based on the ECT.

Due to the size of the interconnection project compared to the Icelandic electricity system and the economy, the interconnection would need to be on a merchant basis, i.e. not regulated. The off take of the electricity, at least to a large degree, would need to be secured. A merchant interconnector would require an exemption under the EU framework, but it is likely it would be given subject to certain conditions.

If it is decided to export electricity from Iceland, the connection to GB would be logical as it poses the shortest distance. UK is aiming towards a higher share of renewable energy in its electricity mix and this would fit to their climate policy. The export of “green” electricity from Iceland might need to compete with other “green” projects like offshore wind in the North Sea. Still, Iceland has the advantage of controllable base load, which is valuable when the share of intermittent power, like wind, is increasing.

The UK also has a lot of experience with interconnectors and have developed a separate legal framework (cap-and-floor) for them in addition to the EU system. The UK has left the EU has recently negotiated a trade and cooperation agreement with the EU which refers in many cases to WTO law. This agreement sees energy trade

continue with the EU as before, but new terms for interconnectors will be negotiated and the UK is no longer subject to EU law.

Given the tradition and history of interconnectors to the UK, it is likely that the framework will not change very much, but this remains to be seen. In any case it is clear the interconnector from Iceland to the UK would not be subject to the approval of ACER. The WTO framework does currently not secure access to the physical transmission infrastructure, but the ECT should facilitate it. Once connected, the seller of the electricity should enjoy zero tariffs and the MFN provisions of the WTO.

As a long term off-take for the electricity is needed to make the project bankable, a bespoke contract for the interconnector might be necessary, perhaps something similar as was done for the Hinkley Point power plant. There should not be legal obstacles under WTO law for the UK to pay a premium for the electricity as it would be coming from renewable sources, but this is still a matter of some debate. In any case it is unlikely that any member would object to it.

The broad framework for upgrading of the electric transmission system in Iceland to feed the interconnector is available, but significant planning and permitting procedures are to be done. This would also depend on the landing point for the interconnector.

Irrespective of enabling legal frameworks, the question regarding the Iceland-UK interconnector is a highly political one, at least in Iceland, and then it would be a question of demand for the electricity, prices and structure on the UK end. In the end the decision on the project would boil down to the economic feasibility, risks and returns.

Conceivably, the export of electricity from Iceland could go to another WTO member like the US. This is a much longer distance with higher associated costs, so it is an unlikely alternative anytime soon. What a more distant future might hold with an introduction of low-cost superconductivity interconnectors remains to be seen. Perhaps Buckminster Fuller's dream of interconnected global electricity grid will become true.

In any case, new interconnectors are being planned and built and with ever more need for electricity, especially renewable, the world will become more interconnected and the trade in electricity will grow. Further development of the international legal framework for electricity trade, including within the WTO, would contribute to this development.

Appendix 1 (Interconnectors)

Existing and future interconnector projects to the UK[441]

As with other major infrastructure projects future interconnectors face a range of challenges that can impact on timing of delivery. The estimated delivery dates shown below reflects Ofgem's understanding of developers existing delivery plans for future interconnectors.

PROJECT NAME	DEVELOPERS	CONNECTING COUNTRY	CAPACITY	CAP AND FLOOR REGIME?	EXEMPTION?	DELIVERY DATE/ ESTIMATED DELIVERY DATE
IFA	National Grid Interconnector Holdings (NGIH) and RTE	France	2000MW	No	No	1986
Moyle	Mutual Energy	Ireland	500MW*	No	No	2002
BritNed	NGIH and TenneT	Netherlands	1000MW	No	Yes (Second Package)	2011
EWIC	EirGrid	Ireland	500MW	No	No	2012
ElecLink	Star Capital Partners Limited and Groupe Eurotunnel	France	1000MW	No	Yes (Third Package)	2019
NEMO	NGIH and Elia	Belgium	1000MW	Yes	No	2019
NSN	NGIH andStatnett	Norway	1400MW	Yes	No	2020
FAB Link	Transmission Investment and RTE	France	1400MW	Yes	No	2022
IFA2	NGIH and RTE	France	100GMW	Yes	No	2020
Viking	NGIH and Energinet.dk	Denmark	1400MW	Yes	No	2022
Greenlink	Element Power	Ireland	500MW	Yes	No	2021

* Moyle has been operating at around half of its normal 500MW capacity due to subsea cable faults since 2012.

[441] 'Electricity Interconnectors' (n 33).

Appendix 2 (Comparison between EU and WTO institutions)

	EU	WTO	Parallels and Differences
Executive	Commission?	No	WTO has no executive body
Secretariat	Council Secretariat	WTO Secretariat	WTO Secretariat has no *right* to set the agenda
Legislature	Council of Ministers and European Parliament (occasionally Commission e.g. Article 86 (ex 90))	General Council (GC) can make some decisions; normally ministerial meetings have to act	EU can use QMV sometimes. WTO normally requires consensus—all big players have *de facto* veto
Constituent assembly	IGCs	Ministerial meetings	Both need unanimity but EU more scope for deals
Court	ECJ (CM). ECJ is final independent court with formal power to interpret EC Law.	Appellate Body (Panels) Appellate Body interprets *de facto* .	Formally ECJ is aboveCouncil of Ministers. WTO GC has right to overturn AB rulings, but *de facto* AB is final.
Opt outs?	All *acquis* should be accepted by all members, except for exceptionally agreed opt-outs.	Single undertaking (except for plurilateral agreements); new members negotiate schedules (*"acquis"*) on entry.	GATT allowed plurilateral agree-ments; WTO tries to avoid.Precise commitment sched-ules differ by Members
Nature of rules	Treaty and secondary laws	Treaty rules*	WTO cannot really make secondary law

* The role of the *Codex Alimentarius standards* under SPS agreement is exceptional

Table. 2: The EU and the WTO: An Institutional Comparison[442]

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