



The UK and Germany's legal approach to air pollution – a functionalist comparative analysis.

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ABSTRACT

In this paper, a comparative law approach is used to analyse how UK and German law respond to the issue of air pollution. Firstly, the sources of law connected to the legal approaches are laid out, particularly regarding the NEC Directive 2016/2284/EU. Once juxtaposed, a functionalist type II comparison is used to examine how German and UK law approach air pollution, and how they seek to comply with international goals, especially those in the NEC Directive. It is concluded that, despite differences in legal family, Germany and the UK share a considerable amount of similarities when it comes to air pollution law. Both states implemented the targets of the NEC Directive into national legislation while also producing legislation to establish responsibility of various bodies to reduce air pollution, monitor emissions and effects, and adhere to EU limits. Legal structures underpinning environmental law of the two states differ; in Germany, a civil law state, codified statutes play a significant role in the application of law, whereas in the UK, a common law state, case law is of primary importance. This paper finds the EU to be the primary force drawing the legal systems together, yet the differences found are unsurprising due to the pre-existing legal systems and cultures. It is left open as to how the UK will act without the EU's oversight and legal forcing to attain its target values and limits, potentially retaining the EU's influence for a long time to come.

Key words: NEC Directive 2016/2284/EU; Air Pollution; Comparative Environmental Law; German law; UK law.

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1. Introduction

Despite progress in recent decades, air pollution remains a threat to public and environmental health (1) (2) (3) (4). As pollutants are readily transported away from the point source, and long-distance transfer is possible, the effects of air pollution are detached from the polluter and air pollution constitutes not only a local issue but a national and international one too. Thus, it requires international cooperation (5). This brings us to international environmental law, and an opportunity for comparative law to provide fresh insights to the issue. Due to the far-reaching health and environmental implications, this is a topic that must be addressed with high importance and continued attention.

In order to control international air pollution, the Member States of the European Union (EU) work closely together with other United Nations Economic Commission for Europe (UNECE) member countries. In 1979 the UNECE Convention on Long-Range Transboundary Air Pollution was adopted (6). As a party of the Air Conventions protocols, the EU has transposed the reduction commitments into EU law

with the use of EU directives.

In 2013 the European Commission passed the Clean Air Policy Package (CAPP) which aims to substantially reduce air pollution across the EU member states. Its goal is to reduce the impacts of harmful emissions from industry, traffic, energy plants, and agriculture on human health and the environment (7). Two priorities are apparent: firstly, the policy package aimed to achieve full compliance with existing legislation by 2020, and secondly it set a pathway for the EU to meet long term objectives (7). The CAPP of 2013 is made up of 4 parts: the Clean Air Program for Europe, the Directive on National Emission Ceilings (8), the Medium Combustion Plant Directive (9), and a proposal to transpose the international emission reduction for 2020 into EU Law which the EU has committed to under the 2012 Gothenburg Protocol of the Convention on Long-Range Transboundary Air Pollution. In addition to the CAPP, both were directed by the EU's 2008 Ambient Air Directive (10) in an effort to 'avoid, prevent or reduce' air pollution's harmful effects to human health and the environment, as well as increase monitoring and public access to information.

Of the directives in the CAPP, the new National Emissions reductions Commitments Directive of 2016 (8) (NEC 2016/2284) is the main legislative instrument to achieve the commitments of the EU Clean Air Programme and CAPP 2013 (11) and will be most closely examined in this paper. It includes the revision and replacement of the Directive 2001/81/EG (12) of the European Parliament and the European Council which established the National Emission Ceilings regime with the NEC 2016 Directive (Art. 21, Directive 2016/2284/EU, 2016). The NEC 2016 Directive sets goals for each member state (Art. 4 and Annex II, Directive 2016/2284/EU). The directive promotes the use of emission reduction commitments with set reduction obligations as a percentage of emissions from 2005, the baseline year, for 2020 and 2030, whereas the Emission Ceilings produce a fixed maximum. It aims to reduce concentration limits according to the LRTAP Convention (8) and sets the long-term goal of reconciling air quality with World Health Organization standards (8). Article 6 sets out the requirement of National air pollution control programmes which are to be created, adopted, and implemented by each state. Articles 9 and 10 stipulate the monitoring requirements and reporting of air pollution programmes and inventories for each state while article 14 ensures that this information should be freely accessible to the public.

Both states have been brought to the EU court for failing to meet their requirements (13) (14). In fact, the United Kingdom (UK) government and its bodies have been repeatedly taken to court by the activist organization Client Earth over matters relating to air pollution and air pollution reduction strategy, and have lost three times (14) (15). Thus, problems relating to air pollution seem far from being solved for the two states and examination of the legal responses is relevant.

This research will investigate the domestic legal systems of the UK and Germany to examine how they respond to the issue of air pollution, particularly focusing on how they implemented legislation to comply with the EU set levels as well as how and why the responses differed.

2. Research Method

The primary research question is:

- How do the UK and German legal systems respond to the issue of air pollution and why?

This leads us to the sub questions of why the responses differ, or why they are similar, and what differences in legal structure may have led to these differences? Our objectives therefore include an identification of legal response, identification of differences and similarities, and the tentative explorative analysis of why these responses differ or not. The research follows the functionalist approach of

legal comparison presented by Zweigert and Kötz (16) which is supported as a suitable approach for Comparative Environmental Law (17). This method assumes that the two states have sufficiently similar ground for a comparison to be made, and that the legal systems face the same issues. As Germany and the UK shared a feature, their membership of the EU, this is a type II functionalist comparison.

Firstly, we lay out the essentials, meaning the essential legal tools, sources of law, or mechanisms existing in each country's approach to meet the goals of the NEC Directive (Section 3). This includes purely domestic legislation as well as acts which implement EU law. Primary sources were used as much as possible. Direct sources of law were referred to when creating the report chapters of each country's legal approach. Following the recommended method of Zweigert and Kötz, this is done as objectively as possible, without critical analysis. We proceed to juxtapose these sources of law (Section 4) and discuss why the systems meet the same functions in different ways (Section 5).

Although this method is popular in comparative law, there are some limitations that need to be acknowledged. Firstly, due to the use of case-by-case precedent in UK law, focusing on a small selection of statutes provides limited information. This is because one function, such as that of air pollution reduction, is solved in multiple pieces of legislation (spanning a large time frame and across many departments) which work together in unison to form a system. Here we would strongly agree with Pierre Lepaule's criticism of the functionalist method in that "a legal system is a unity, the whole of which expresses itself in each part; the same blood runs in the whole organism. Hence, each part must necessarily be seen in its relation to the whole" as discussed in *Environmental Law Across Cultures* (17). To only focus on one source of implementation seems quite short sighted, especially since most implementations are using structures and principles from previous acts. This complexity makes summarising the UK's response to the EU directives on air pollution very challenging and consequently limits the comparison. Similarly, even though the information on the legal sources is direct and accurate, we have limited information on real life enforcement and application in both countries.

Lastly, although attempting to produce an objective study following the method of functionalism, "it is impossible to compare without having a point of perspective from which one compares" (18 p. 24). Therefore, it is important to address potential bias. The authors of this paper are two students, one from the UK and one from Germany. Any comparison made is centred in our understanding of what a legal system does and should do, which is influenced by our nationalities. Situations in educational background and

beliefs influenced which sources we looked at and how we looked at them, as well as what we decided to compare and deem as relevant. Thus, this study cannot claim to produce an objective or truly scientific result but aims to highlight some dynamics in the legal systems' responses and tentatively discuss why they are this way.

3. Results

3.1 Country A: Germany

3.1.1 Germany's Legal System

Germany has a civil law system and a codified federal constitution: the German Basic Law (GG). The main domestic sources of law are regulations passed by the EU, the German Basic Law, and codified laws. Germany has a parliamentary system of governance. Laws are proposed by the Federal Parliament, the government, or the Federal council. The general legislative process then depends on which body introduced the bill. Three readings are required and at the end of the third reading the final decision on the bill is made. A law is generally passed by a majority of votes (Art. 42, section 2 GG) and then promulgated by the president. Germany is a parliamentary and federal democracy and has 16 federal states: the "Bundesländer".

There is no principal regulatory body regarding the environment. The federal states' authorities deal with everyday measures and are guided by their particular state Environmental Ministry. The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) is responsible for federal agencies' activities and the Federal Environmental Agency (UBA) exercises responsibility over private sector emissions trading. Under the Emission Control Act, permits can be granted for industrial facilities through an emission control permit.

In Germany, EU regulations have immediate effect and EU directives are implemented. The NEC 2016 Directive was implemented into national legislation by means of the 43. Federal Immission Control Act (43. BImSchG) concerning national reduction commitments regarding certain air pollutants (19). Germany approaches the reduction of air pollutants in compliance with the NEC 2016 Directive with several Federal Immission Control Ordinances (BImSchV) linked to the 43. BImSchG. Additionally, Germany has passed a National Clean Air Program and an administrative legislation connected to the 43. BImSchG.

In the following, we lay out the different sources of law connected to the realization of the emission reduction goals set in the NEC Directive.

	Germany	UK
Legal System	Civil Law	English Common Law
Constitutional Law	Written constitution: German Basic Law	No codified constitution however some acts are considered constitutional.
Institution	<ul style="list-style-type: none"> - No principal regulatory body - State Environmental Ministries - Federal Ministry for the Environment, Nature Conservation and Nuclear Safety - Federal Environmental Agency 	Department for Environment, Food and Rural Affairs.
Acts relating to the NEC Directive	<ul style="list-style-type: none"> - National Clean Air Program - 43. Federal Immission Control Act (43. BImSchG) - Federal Immission Control Ordinances (BImSchG) - TA Luft 	<ul style="list-style-type: none"> - Clean Air Act - Environmental Protection Act - Environment Act - National Emissions Ceilings Regulations of 2002
Progress	<ul style="list-style-type: none"> - Continued reduction of pollutant emissions - Slow progress - Breach of air quality requirement for PM10 and NO2 - Referred to the European Court of Justice 	<ul style="list-style-type: none"> - Continued reduction of pollutant emissions - Air quality breaches in some locations

Table 1: Table of Results.

3.1.2 Legal Strategy for Air Pollution Control

Constitutional Law

Article 20 a of the German Basic Law (GG) states: “Mindful also of its responsibility toward future generations, the state shall protect the natural bases of life by legislation and, in accordance with law and justice, by executive and judicial action, all within the framework of the constitutional order” and contains two state objectives (Art. 20 a GG). One of these states that all state authorities are obliged to the preservation of natural livelihood (Art. 20 a GG). These state objectives are directly applicable guiding principles directed at all types of state authority (20). State objectives are part of objective constitutional law however, one cannot derive subjective rights of individuals from these two state objectives. Consequently, there is no subjective, actionable right to a certain legislative action (21).

Nevertheless, state objectives form a basis for interpretation when it comes to jurisdiction, administration, and legislation and is also a legal duty of the state (20). In Germany, environmental protection is primarily exercised by regulatory authorities who apply environmental administrative law. Constitutional Law forms the basis for interpretation of environmental administrative law as administrative law is substantiated constitutional law.

The assignment of legislative power is of utmost importance when it comes to environmental law, as it regulates who passes laws and who practices laws in the Federal Government and federal states. The federal states have legislative power (Art. 30, 70 Section 1 GG) unless it is explicitly assigned to the Federal Government. The Federal Government forms main guiding principles when it comes to environmental law e.g., the BImSchG. However, it does not have a general legislative power for environmental law. Therefore, the federal states have the legislative power if the Federal Government is not in charge. In this paper, we will focus on Federal State law and regulations.

Nationales Luftreinhalteprogramm

The National Clean Air Program adopted by the German government was passed in May 2019 and clarifies which measures must be taken by Germany in order to meet the standards set in the NEC Directive 2016/2284/EU (22). Its main goal is to further improve the air quality by 2030 by focusing on large-scale air pollution as in the National Clean Air Programme of Germany, 2019 (22). The National Air Quality Program is not directly linked to local measures, e.g. statutory limits in city centres (22).

BImSchG

The BImSchG is a law which aims at protecting the

environment from harmful impacts through air pollution, noise emission and similar occurrences. Several legislative decrees are linked to the BImSchG.

The 1. BImSchV is a legislative decree concerning small and medium sized combustion plants and aims at reducing emissions produced by such combustion plants (23). It focuses on the regulation of combustion plants which use solid fuels such as firewood, wooden pellets and similar solid fuels, as solid fuels are a significant source of particulate matter and other air pollutants (23).

The 13. BImSchV was passed in May 2013 in order to implement the EU Directive 2010/75/EU concerning industrial emissions into national law (24). The legislative decree aims at reducing industrial emissions and sets limits to emissions caused by large combustion plants with a rated thermal input of 50 MW (24) (§ 1). It affects generation of electricity such as all coal-fired power stations, gas power plants and engine oil power plants (24) (§ 8). In addition, limits are set for block heating plants, gas turbine plants and plants with internal combustion engines (24) (§§ 4, 9). Limits are set for dust, heavy metals, carbon monoxide, nitrogen oxides and sulphur oxides, formaldehyde, and methane (24) (§§ 4, 13). Furthermore, the legislative decree determines details concerning the measuring and monitoring of these emissions and the ongoing reporting (24) (Section 3).

The „Technische Anleitung zur Reinhaltung der Luft“ (TA Luft) is an administrative regulation of the BImSchG. Local authorities must observe the TA Luft when approving the construction and operation of plants requiring an operating permit (25). It specifies the approving process of such industrial plants. The administrative regulation has two main sections. One section concerns the immissions and contains statutory provisions concerning the protection of neighbouring states, as well as it determines how and with what methods emission levels set by the EU are considered (25). Another section contains requirements for precautionary measures against harmful environmental effects (25). It also sets appropriate emission levels (25).

3.1.3 Practical methods regulating or reducing air pollution

The Environment Agencies of the federal states issue permits on the basis of the 43. BImSchG. The Industrial Emissions Directive 2010 (26) requires the application of the best available techniques in Germany as well in order to ensure environmental protection.

3.1.4 Progress

According to the EU Environmental Implementation Review 2019 on Germany, Germany has achieved to continue reductions in 2014 to 2016 for three of five pollutants (27). The review states that Germany

must put in additional efforts to meet the reduction commitments of the NEC Directive 2016/2284/EU, following persistent breaches of air quality requirement for PM10 and NO2 (27). Regarding NO2 and the Directive 2008/50/EC, Germany has already been referred to the European Court of Justice (27).

3.2 Country B: the United Kingdom

3.2.1 The UK Legal System

UK air pollution laws stem from international agreements, EU legislation, and domestic law. Legislation, strategies, and objectives exist covering the entirety of the UK of Great Britain and Northern Ireland, via UK law, but responsibility for meeting air quality limits is devolved into national administrations. Where the governing bodies and legal strategies divide, this paper will only investigate matters in English law, a common law system, administered in the legal jurisdiction of England and Wales (28).

The UK has an uncodified constitution, which is amended using precedent and case-by-case reasoning (28). Constitutional principles such as parliamentary sovereignty, the rule of law, and democracy, are recognized by the Supreme Court within significant acts noted as constitutional acts (28). Laws are formed by passing legislation in Parliament. Bills must be passed by Parliament before becoming a new Act of Parliament, a form of primary legislation with legal standing (29). Both houses of Parliament must vote in favour for a bill to be passed. Parliament consists of the House of Commons and the House of Lords (28).

The responsible body for environmental care is the Department of Food, Environment and Rural Affairs (DEFRA), a ministerial department with 33 agencies and public bodies (30). The department's Secretary of State is given duties regarding air pollution within the Acts of Parliament and Statutory Instruments (National Emissions Ceilings Regulations 2018 § 3 (31)). DEFRA drafts and develops environmental policy and carries a monitoring and regulatory role. Permits and enforcement also come under the Environment Agency (EA), a non-departmental public body created in the Environment Act 1995 c.25 Part I (32) which is sponsored by DEFRA.

Most EU directives are implemented by Acts of Parliament and following Statutory Instruments (33). These are a common form of secondary or delegated legislation, formed in response to an Act of Parliament to produce laws regarding matters in the Act, enabling enforcement, amending existing laws and setting the date for when provisions of an act come into effect (34). The power to make a Statutory Instrument is designated to ministers or other bodies in the Act of Parliament they are addressing. They must be considered by the House of Commons and House of Lords, but motions successfully preventing

the passing of Statutory Instruments are rare (34). The NEC Directive 2001/81/EC (12) was transferred into UK law via the National Emissions Ceilings Regulations of 2002 (35). It was then replaced by the Ambient Air Quality Directive 2008 (10), which set limits for concentrations for outdoor air of major health detrimental pollutants. The Air Quality Standards Regulations 2010 (36) (a Statutory Instrument) was published to implement the Ambient Air Quality Directive as well as the air quality daughter Directive 2004/107/EC. The NEC Regulation 2018 (31) was published to implement the NEC 2016 Directive. As required in the NEC 2016 Directive, a National Air Pollution Control Programme (37) was published, setting out measures to meet the emission reduction commitments. The EMEP/EEA regulations are used to monitor and report air pollution.

3.2.2 Legal Strategy for Air Pollution Control

The Clean Air Act

An early piece of legislation responding to the issue of air pollution in the UK is the Clean Air Act (38), introduced in 1956 in response to the widespread smog of the 1950's, notably the Great Smog of London 1952 (39). The following Clean Air Acts of 1968 and 1993 consolidate and amend the Act (40). Its primary concern is the prohibition and limitation of dark smoke from chimneys, both household and industrial, unless granted exempt by the Secretary of State (§ 1.3). Part III § 18 – 19 gives local authorities the ability to declare a Smoke Control Area, where emissions are strictly prohibited (§ 20), and gives the Secretary of State the power to require the creation of smoke control orders.

The Environmental Protection Act

The Environmental Protection Act 1990 (41) Part III on Statutory Nuisances and Clean Air sets a structure for authority on emissions and environmental damage by designating air pollution a statutory nuisance, allowing environmental conflicts to be dealt with using the Tort law of nuisance. It assigns local authorities the duty to inspect areas, detect statutory nuisances, and take steps reasonable when a complaint of a statutory nuisance is made.

The Environment Act 1995

The Environment Act (32) (Chapter 1 § 1) established and gave powers to agencies for environmental management. Part IV, called for the devolved administrations to produce a National Air Quality Strategy by the Secretary of State, and the establishment of Air Quality Management Areas (§83). The National Air Quality Strategies sets out objectives, complying with EU objectives, and recognises necessary action. Local authorities are responsible for reviewing air

quality and implementing proposed measures (§83). When the National Air Quality Objectives are not met or appear to be unlikely within the relevant period, an Air Quality Management Area must be declared, and a Local Air Quality Action Plan is required (§83.1). The subsequent EU obligations are met within the National Air Quality Objectives, so in theory the sum of each authoritative district complying to local limit values will remain within the EU limits nationally.

3.2.3 Practical methods regulating or reducing air pollution

England operates with an integrated Environmental Permitting and compliance regime as in the Environmental Permitting Regulations 2016 (42), regulated by the EA. This forms the application of the EU Industrial Emissions Directive 2010 (26) and introduces the EU Best Available Technologies concept which minimises environmental effects and is required for an industrial installation. This replaced the previous, less stringent Best Available Means principle. The UK Best Available Techniques regime will be used after Brexit (43). In § 4.2 c of the Town and Country Planning Regulations, air pollution is recognised as a factor in Environmental Impact Assessments (44). The UK regulations amend the EU Environmental Impact Assessment Directive (45). The UK follows the Pollutant-Release and Transfer Register as in the 2003 Kiev Protocol of the UNECE. Market-based instruments are popular, including the voluntary Climate Change Agreement scheme and the UK Emission Trading Scheme. Companies can receive benefits including Climate Change Levy Charge reductions (46). Strategies and government programmes (37) (47) (43) suggest a prominent use of soft approaches to encourage air pollution reducing behaviours.

3.2.4 Progress

Despite air quality breaches in urban areas, especially regarding Nitrous Oxides (48) (13), the UK has been successful in significantly reducing air pollutant emissions and in meeting its emissions ceilings for most selected pollutants (49) (50) (43 pp. 97-99). DEFRA has however been on the receiving end of domestic legal action, namely the cases led by the environmental charity Client Earth over the UK's reduction measures (14).

3.2.5. The Effects of Brexit

EU laws continued to operate until the end of the transition period on the 31st of December 2020 (51) (52). European directives passed after the referendum continued to be implemented (31) and the UK remained liable to its set objectives (52). Government sources claim that much of EU law is in the process of being directly actively transposed into UK law as retained EU law (53). As repealing the European

Communities Act 1972 would leave some secondary legislation made under it not legally valid, legal gaps are being solved by converting EU law into UK law where practical, to be reviewed later (33).

It has been argued that current legislative framework is insufficient and requires updating as separation from the EU takes place (54) (51). There is considerable concern about whether the UK's systems will be robust, and how the UK will act without the EU's oversight and legal forcing to attain its target values and limits (54).

Environmental principles embedded in EU treaties need recognition to carry over EU air pollution law (particularly the preventative, precautionary, rectification at source and polluter pays principles) (54) (55). These are to be recognised, interpreted, and prepared into a statement by the Secretary of State under § 16-18 of the Environment Bill.

4. Analysis

4.1 Where does environmental duty come from?

Germany operates a civil law system with a written constitution. Article 20a GG gives responsibility towards future generations for the state to protect the natural basis of life by legislation, executive, and judicial action. The statements and objectives in Article 20a GG can be a basis for interpretation to give the German state the responsibility for environmental protection, and the ability to take legal action. Thus, the responsibilities proposed in the directives are supported by the Basic German Law.

The responsibilities of the state to protect the environment are not so clearly implied in UK law as in the German Basic Law. Instead of one constitution, environmental obligations have historically produced in a more ad hoc manner, tucked into smaller more specific pieces of legislation which target a specific issue without producing a wider transferrable abstract concept (56). The Environment Act 1995 and the Environment Protection Act 1990 established wider scale environmental protection and monitoring systems with direct references to environmental pollution as well as establishing power for the Secretary of State to make standards, limits, requirements, and obligations. From the establishment of government departments and government sponsored regulatory bodies such as the EA, the protection of the environment and the control of air pollution is established as a duty of the UK government via these Acts.

4.2 Assignment of power

The assignment of legislative power in the UK and in Germany both show a degree of fragmentation to smaller bodies, with a prominent overarching role of the state government. In Germany, the federal states have legislative power unless assigned to the federal government. The federal government forms main

guiding principles such as the BImSchV of Germany, but general legislative power remains with the federal states. In the UK, the legislative power for the passing of environmental laws is granted to departmental bodies such as DEFRA and the EA, within and often in answer to the Acts of Parliament. Local authorities do not have power to produce legislation but play an administrative, regulatory and enforcement role. The constituent countries of the UK also have some variation in their legislation on air pollution. This organisational structure represents a shared feature of the UK and Germany's approaches to environmental legislation.

4.3. Response to EU Directives

Following the NEC Directive 2016/2284/EU (8), Germany used the 43. BImSchG to implement the targets into national legislation. A National Clean Air Program was passed. The UK acted similarly, implementing the obligations set out in the directive into UK law via the National Emissions Ceilings Regulations of 2018 (31) as well as publishing a National Clean Air Program. On this level, the UK and Germany appear to have very similar legal responses to air pollution. The statutes in UK and German law responding to the EU directives fulfil the function for the citizen by establishing the responsibility of various bodies to reduce air pollution, monitor emissions, monitor effects, and adhere to EU limits.

5. Discussion

5.1. Similarities and Differences

On one hand, you could expect the legal system of Germany and the UK to meet the same function in the same way due to the nature of the issue. That is to say, both nations have undergone significant industrialisation, urbanisation, and conflict within the same time frame (when viewing them in a global context). As two developed European nations which have a similar population density, reasonably similar ways of living and similar reliance on fossil fuels for energy production (57), we could expect the legal systems to be presented with near-identical environmental issues, especially considering air pollution. It would follow that the legal approaches would be very similar if we were to believe the material issue is the lone legal formant that sets the development of legal response.

However, despite the similar presentation of the issue, law is also structurally dependent. Environmental law is not only about the material world but is additionally influenced by the culture and attitudes of the nation and its legal system (17 p. 33). The legal structures underpinning Environmental Law in Germany and the UK are very different. As previously stated, Germany operates a civil law system whereas the UK's legal system is in the common law fami-

ly. In a common law country case law is of primary importance whereas in a civil law country, codified statutes prevail. In English Law there is no comparable codification as the German codified legislative system. These codified statutes play a significant role when it comes to the application of law, and overall cases are decided on the basis of this codified legislative system. Case law, which is of primary importance in English Law, on the other hand, is stabilized with the use of *stare decisis*. Even judicial decisions from the past hundred years can be of importance in court. German law uses a rationalist philosophy and has a Basic Law with principles upon which environmental law can be built. UK environmental law previously avoided enshrining abstract policy principles. These differences in legal structure are one factor which leads the way to approach environmental issues differently.

Opposing this foundational difference of legal structure is the strong linkage of the two systems. Germany and the UK's legal strategies regarding air pollution are connected through international obligations, most notably the multiple EU directives mentioned above. By membership of the EU, both undergo (or underwent) Europeanisation of their laws to some extent (56 pp. 170-173). Not only do the directives give them similar legal obligations, time frames to achieve progress, and proposed policy, but also important principles are uploaded and downloaded from EU law. This is very shaping for UK law, as abstract principles such as the precautionary principle are introduced in this manner (56). If all goes ahead and these principles are retained in UK law through the transposing of EU law, then the UK's legal system could be shaped by its membership of the EU for a long time to come.

In addition to this, some of the implementation mechanisms are also similar, often again caused by EU legislation and procedures, such as the use of the EU Emission Trading Scheme and the Best Available Technology or Stand der Technik concept. They also share environmental permitting and monitoring standards produced by the EU such as the EMEP system of monitoring. These shared mechanisms link the UK and German law responses further than the directives alone and suggest that the two legal systems will continue to share features, based on the nature of implementation and regulatory standards already established in the EU.

Furthermore, both the UK and Germany have a system of one overarching structure placing some legislation and requirements which are then dealt with by devolved country administrations and smaller local councils or districts. The EU directives work in a top-down manner with legislations setting objectives beginning at the EU level, being implemented in a Federal Act, Act of Parliament or Statutory Instrument, then passing obligations to smaller geographical structures such as the devolved nations, local aut-

horitative administrations, and federal states. Thus, the operating of air pollution targets and the passing of responsibility is very comparable between the two states.

5.2. Critical Evaluation

Each nation achieved their NEC 2016 Directive target, although facing criticism for their National Air Pollution Control plans, as in the Client Earth cases (14), and regularly breaching air quality limits. Is this to say that the legal approaches are both equally successful? Or are they at fault for the breaching of air quality limits? A causal link between the implementation of the EU directives and the outcome is not possible as there are far too many factors which are not in the scope of this study. As Lees points out (56), not only do the legal systems differ, but the receiving of them and of methods deployed are different, as well as the pre-existing regulatory cultures. Soft methods such as in the National Air Pollution Control Programmes, voluntary schemes, and market-based schemes are received differently in each nation and have differing efficiencies (56). As they have differing efficiencies, their application will also vary. Where a strict legal regulation is necessary in one place, another option may be preferred, more easily applied, and equally efficient elsewhere. These mechanisms outside of the strictly legal mechanisms mean that a legal study alone could not comprehensively answer the question of why the legal responses differ, nor fully assess the efficiency of the legal strategies.

6. Conclusion

Although the UK and Germany have very different foundations of law, similarities in their approach to the issue of air pollution are present. The legal families of each nation are different yet, through membership of the EU, both nations share approaches to air pollution and incorporate some similar principles of environmental law whether in their constitution or not. The process of Europeanisation has brought the environmental laws regarding air pollution in the UK and Germany closer together. It could be said that the legal systems are expected to present a similar response as they face the same issue in a similar way. To some extent this is true, but it seems that the influence of the EU is the primary force drawing the legal systems together. The dependencies of each nation's response on its legal foundation and legal culture have been shifted due to membership of the EU and Europeanisation of their legal systems. So, while the similarities in their response are expected due to shared membership of the EU, the differences are also not surprising considering their pre-existing legal systems and legal cultures. Looking to the future, while Germany's legal response to the issue of air pollution continues to be overseen by the EU,

Brexit may represent a great shift for the UK's response. Without accountability to a higher body, the UK's air pollution response may diverge further from Germany's response in years to come.

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