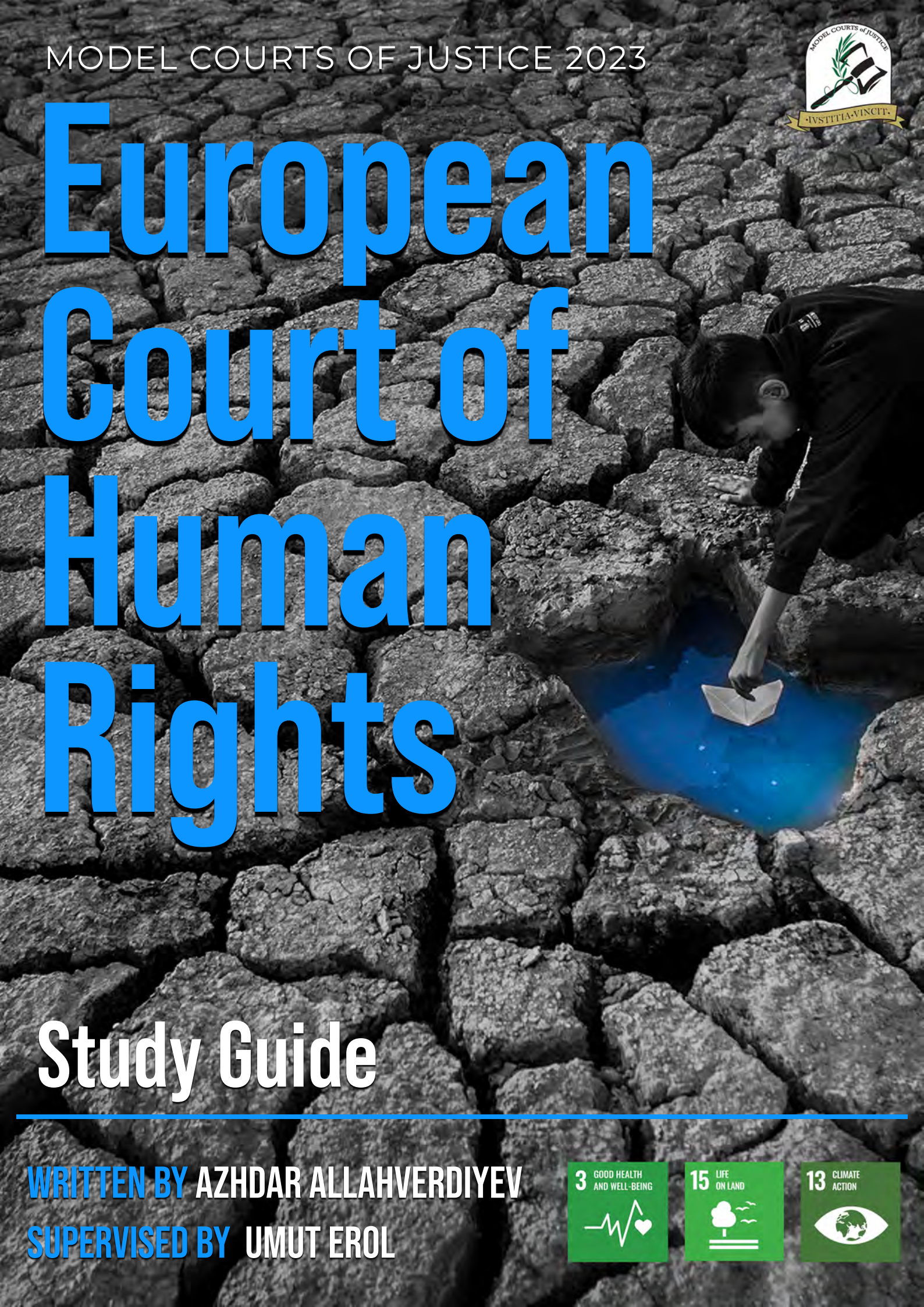
MODEL COURTS OF JUSTICE 2023

European Court of Human Rights

Study Guide

WRITTEN BY AZHDAR ALLAHVERDIYEV

SUPERVISED BY UMUT EROL



LETTER OF THE SECRETARY-GENERAL

Esteemed Participants,

It is my pleasure to welcome you all to the twelfth edition of the Model Courts of Justice as the Secretary-General. My name is Umut Erol, and I am a senior law student at Ankara University.

The participants of the Model Courts of Justice 2023 will be focusing on the fields environmental law, climate change law, and human rights law. The case that will be simulated is *'Duarte Agostinho and Others v. Portugal and Others*'. The judges and advocates of the Court will have a chance to elaborate on such essential and fundamental concepts of environmental and human rights law, and they will be deciding upon one of the potential landmark cases which will effect the climate protection in legal area.

I would like to first thank Mr. Azhdar Allahverdiyev for his great ambition and open-mindedness during the whole process. Second, I appreciate the trainee of the European Court of Human Rights, Mr. Eralp Aydınlıalp for his contribution to the preparation phase. Last, I would like to thank the Director-General of the Model Courts of Justice 2023 and my beloved partner, Miss Selin Özgören for enduring organizational excellence and professionalism with her wonderful organization team.

Before attending the sessions, I highly recommend all the participants read the Study Guide and Rules of Procedure and bring the printed versions of these documents with them while coming to the Conference.

If you have any questions or hesitations about the Conference, please do not hesitate to contact me at secretarygeneral@modelcj.org

Sincerely,

Umut Erol

Secretary-General of the Model Courts of Justice 2023

LETTER OF THE UNDER-SECRETARY-GENERAL

Most esteemed participants,

I am more than excited to welcome you all to the 12th annual session of the Model Courts of Justice 2023. I am Azhdar Allahverdiyev, and as a senior year law student at Ankara University, this year I am beyond pleased to serve as the Under-Secretary-General responsible for the European Court of Human Rights.

This year, our case, *Duarte Agostinho and Others v. Portugal and Others*, will primarily focus on climate change and its legal implications for the states. Our landmark case will mainly stand on whether a lack of action concerning climate change by the states constitutes a violation of the European Convention on Human Rights.

I would also like to express my gratitude to our Secretary-General, Mr. Umut Erol, for bestowing me with this amazing academic opportunity to prove myself through his availability, determined support, and excellent guidance. I would also like to thank my academic trainee, Erap Aydinlialp, for his unwavering work and contribution to our case. Finally, I am very grateful to our Director-General, Selin Özgören, and her industrious team for working so hard on an organizational level to make this conference possible.

Please do not hesitate to contact me, if you have any questions.

Azhdar Allahverdiyev

Under-Secretary-General responsible for the European Court of Human Rights

INDEX

2. Renewable Energy
3. Carbon Emissions
    a) *Direct Emissions*
    b) *Indirect Emissions*
        (1) Indirect Emissions-owned
        (2) Indirect Emissions-not owned
4. Climate Change
    a) *Natural Climate Change*
    b) *Human-made Climate Change*
    c) *History of the Climate Change*
    d) *Emergencies directly linked to the Climate Change*
    e) *The dilemma in Human Rights: Permanent Economic Growth vs Reversing Climate Change*

IV. CASE BEFORE THE COURT *(DUARTE AGOSTINHO AND OTHERS v. PORTUGAL AND OTHERS)*

1. Overview
    a) *The policy of the European Union Regarding the Climate Change*
    b) *Portuguese approach to fight the Climate Change*
2. Facts of the Case
3. Claims of the Parties
    a) Claims of Duarte Agostinho and Others
    b) Claims of Portugal and 32 Other Nations
4. Established Agenda

V. APPLICABLE LAW

1. Conventions and International Treaties
    a) *European Convention on Human Rights*
        (1) Article 2-Right to Life
        (2) Article 8-Right to Privacy
        (3) Article 14- Right to not experience discrimination

b) *Universal Declaration on Human Rights*
   (1) Article 3-Right to live
   (2) Article 7-Prohibition of discrimination
   (3) Article 12-Right to the Respect of Family Life and Privacy
c) *United Nations Convention on the Rights of the Child*
   (1) Article 3(1) - Obligation to take any decision concerning children be based on the paramount consideration of the best interests of the child
d) *1992 Rio Declaration on Environment and Development*
   (1) Principle 3 - Obligation to make decisions based on intergenerational equity
e) *2015 Paris Agreement*
   (1) Article 2(a)- Commitment to hold the rise of global temperatures below 2 degrees compared to pre-industrial levels

2. EU Law
   a) *European Climate Law- commitment to make the EU carbon-neutral by 2050*
   b) *Charter of Fundamental Rights of the European Union*
      (1) Article 2-Right to Life
      (2) Article 7- Right to Privacy
      (3) Article 21- Right to not experience a discrimination
      (4) Article 24(2)- Commitment to consider child's best interest as a priority when taking decisions relating to them

3. Relevant Domestic Laws
   a) *Portugal Climate Law no 98/2021*
   b) *Germany Climate Change Act*
   c) *The French Climate and Resilience Law*

VI. CASE LAW
   a) *Pavlov and others v. Russia*

VII. CONCLUSION

VIII. BIBLIOGRAPHY
   a) Books

b) Articles

c) Websites and Blogs

d) Cases, Codes, and Rules

I. INTRODUCTION TO HUMAN RIGHTS

Human rights are rights that we have simply because we are human; they are not granted by any state. We all have these universal rights, regardless of nationality, gender, national or ethnic origin, color, religion, language, or any other status. They range from the most basic, the right to life, to those that make life worthwhile, such as the rights to food, education, work, health, and liberty. The universality principle of human rights is the bedrock of international human rights law. This means that we all have equal access to our human rights. This principle, first emphasized in the Universal Declaration of Human Rights, is repeated in numerous international human rights conventions, declarations, and resolutions. Human rights are inalienable. They should not be taken away, except in specific situations and according to due process. For example, the right to liberty may be restricted if a person is found guilty of a crime by a court of law. [1]Human rights are inseparable. Civil, political, economic, social, and cultural rights are all inherent in the dignity of every human being.[2] As a result, they all have equal legal standing. There are no such things as "small" rights. There is no such thing as a human rights hierarchy. A series of international agreements after the most destructive war that humanity has ever seen, established a formal legal base for the formation of international human rights law. As a result, most countries have enacted constitutions and other types of legislation to protect basic human rights on the national level. In case of domestic failure to address human rights abuses, additional procedures exist at regional and international levels to enforce basic human rights standards at the local level such as the European Court of Human Rights which we will talk about extensively in this guide.[3]

[1] OHCHR, 'What Are Human Rights?' (2 November 2022) <https://www.ohchr.org/en/what-are-human-rights> accessed 2 November 2022.

[2] UNICEF, 'Human Rights' (*UNICEF*, 2015) <https://www.unicef.org/child-rights-convention/what-are-human-rights> accessed 2 November 2022.

[3] ibid.

a) *Origins of Human Rights*

In almost the entirety of written history, a government's treatment of its citizens was considered an internal affair. In other words, human rights were regarded as strictly within the jurisdiction of domestic law and entirely unthoughtful for supervision by international laws[4]. While this logic almost persisted until the end of WW2, we can observe that some cracks began to appear in that customary law even before then, albeit very limited in nature. For example, the very potent abolitionist movements of XIXth and XXth culminated in the Slavery Convention of 1926 which effectively banned slavery or the slave trade worldwide. However, it does not mean that in the ancient and medieval world protection of basic human rights did not exist. Whilst ancient human rights standards were not on par with modern ones, nonetheless, they played a crucial role in the evolution of human dignity over the centuries. To understand contemporary human rights law and its rigid standards better, we shall take a look at its historical evolution.[5]

Another landmark in human rights history is the promulgation of the Magna Carta in 1215, which introduced the raw concept of the "Rule of Law" and the basic idea of defined rights and liberties to all people, providing protection from arbitrary prosecution and incarceration. Prior to the Magna Carta, the rule of law, now recognized as a key principle for good governance in any modern democratic society, was viewed as divine justice, administered solely by the monarch or king, in this case, King John of England.[6] The English Bill of Rights represents an evolution of the concepts expressed in the Magna Carta. It was a law signed into law in 1689 by William III and Mary II, who became co-rulers in England after King James II was deposed. The bill outlined specific

[6] Marco Sutto, 'Human Rights Evolution, a Brief History.' 18.

constitutional, and civil rights, and eventually granted Parliament control over the monarchy. Many experts consider the English Bill of Rights to be the primary piece of legislation that laid the groundwork for England's constitutional monarchy. It is also credited with inspiring the United States Bill of Rights (1791). The Bill of Rights laid out certain basic rights for all Englishmen. These rights continue to apply today, not only in England and Wales but in each of the jurisdictions of the Commonwealth realms as well These rights, also known as first-generation rights, acknowledge the existence of certain things that the all-powerful rulers should not be able to do, as well as the fact that people should have some influence over policies affecting them. Personal liberty and protecting individuals from violations by the state were the two central ideas[7]. They serve negatively to protect the individual from excesses of the State. Took World War II as a catalyst to propel human rights onto the global stage and into the global conscience. The world was shocked by the unprecedented atrocities committed both during and after the war, such as Nazi Germany's extermination of over six million Jews, Sinti and Romani (gypsies), homosexuals, and people with disabilities. As a result, the concept of human rights emerged stronger than ever after World War II. Following World War II, the Nuremberg and Tokyo Trials introduced the relatively new concepts of *"crimes against peace"* and "*crimes against humanity."*[8] As a result, the concept of *international human rights* law emerged when the world decided that the promotion of human rights is the best insurance to fulfill the promise of "never again". To enforce that purpose UN charter created general requirements for the member states to respect human rights and established Human Rights Commission to supervise the compliance of the states and improve these rights. Although following the creation of the UN, numerous international treaties and declarations were adopted to protect and advance human rights, the real beacon document was the Universal Declaration of the Human Rights (1948), which singlehandedly spearheaded the creation of international human rights law and remains one of the most impactful documents in the human rights history[9]. It is very hard to not overstate its positive influence even 70 years later it was announced. The Universal Declaration of Human Rights (UDHR) is a watershed moment in human rights history. The Declaration, drafted by representatives from all regions of the world with

[7] Richard Bilder, 'An Overview of International Human Rights Law' (2004) 4 University of Wisconsin Law School 4.
[8] ibid.
[9] ibid.

diverse legal and cultural backgrounds, was proclaimed by the United Nations General Assembly in Paris on 10 December 1948 (General Assembly resolution 217 A) as a common standard of achievements for all peoples and all nations. It establishes fundamental human rights to be universally protected for the first time, and it has been translated into over 500 languages. The Universal Declaration of Human Rights is widely regarded as having inspired and paved the way for the adoption of more than seventy human rights treaties, which are now in force on a permanent

Universal Declaration of Human Rights consists of a preamble and 30 Articles setting forth basic human rights without any discrimination. The Declaration contained general definitions of two types of rights mentioned below:

1. Civil and Political Rights stated in Articles 3 to 21 such as a right to life, right to freedom, right to nationality, right to own property, right to freedom of opinion and expression, freedom of thought, conscience, and religion, bright to take part in the government etc.

2. Economic Social and Cultural rights are recognized in Articles 22 to 28. Some of those are the right to social security, right to education, right to participate, in the cultural life of the community, right to enjoy the arts and to share in scientific advancement and its benefits.[10]

Figure 1: Eleanor Roosewelt with the Universal Declaration of Human Rights[11]

[10] Md. Kamruzzaman, Shashi Kanto Das. The Evaluation of Human Rights: An Overview in Historical Perspective. American Journal ofService Science and Management. Vol. 3, No. 2, 2016, pp. 5-12.
[11] ibid.

2. Movements in Europe regarding Human Rights

We understand that we have the right to have all of our human rights respected. Because the UDHR, ECHR, and other treaties cover such a wide range of rights, we will examine them in the order in which they were developed and recognized regionally or by the international community. The most common way of categorizing these rights is into "first, second, and third generation" rights, which we will use for the time being. However, as we will see, such a classification has limited utility and can even be misleading at times. After all, these classifications are not precise. They are simply one method - among many - of classifying the various rights. First-generation rights emerged as a theory in the seventeenth and eighteenth centuries and were primarily motivated by political concerns. It had begun to be recognized that certain things should not be done by all-powerful rulers and that people should have some influence over policies that affected them. The two central ideas were personal liberty and protecting the individual from state violations. Civil and political rights are now detailed in the International Covenant on Civil and Political Rights (ICCPR) and the European Convention for the Protection of Human Rights and Fundamental Freedoms (ECHR), and they include rights such as the right to vote and the prohibition of torture. Many people, at least in "the West," have traditionally regarded these rights as the most important human rights. During the Cold War, the countries of the Soviet block were severely criticized for their disregard for civil and political rights. These countries responded by criticizing the western democracies, in turn, for ignoring key social and economic rights, which we shall look at next. There was at least an element of truth in both criticisms. It also illustrates how human rights are prone to political abuse.[12]

Second-generation rights pertain to how people live and work together, as well as the fundamental necessities of life. They are founded on the principles of equality and guaranteed access to basic social and economic goods, services, and opportunities. With the effects of early industrialization and the rise of the working class, they became increasingly a subject of international recognition. These sparked new demands and ideas about what it means to live a dignified life. People realized that human dignity required more than the minimal lack of interference from the state as proposed

[12] Council of Europe, 'The Evolution of Human Rights' (2017) <https://www.coe.int/en/web/compass/the-evolution-of-human-rights> accessed 10 November 2022.

by civil and political rights. Social, economic, and cultural rights are outlined in the International Covenant on Economic, Social, and Cultural Rights (ICESCR) and also in the European Social Charter of the Council of Europe. Social, economic, and cultural rights are based on the ideas of equality and guaranteed access to essential social and economic goods, services, and opportunities[13].

The list of internationally recognized human rights has not remained constant. Although none of the rights listed in the UDHR has been brought into serious question in over 60 years of its existence, new treaties and documents have clarified and further developed some of the basic concepts that were laid down in that original document: the right to development, right to peace, right to a healthy environment, to humanitarian assistance…These additions have been a result of a number of factors: they have partly come about as a response to changing ideas about human dignity, and partly as a result of new threats and opportunities emerging. In the case of the specific new category of rights that have been proposed as third-generation rights, these have been the consequence of a deeper understanding of the different types of obstacles that may stand in the way of realizing first and second-generation rights. The concept of solidarity underpins the third generation of rights, and the rights encompass collective rights of society or peoples, such as the right to sustainable development, peace, or a healthy environment. Conditions such as extreme poverty, war, and ecological and natural disasters have resulted in very limited progress in terms of human rights in much of the world. As a result, many people believe that the recognition of a new category of human rights is required: these rights would ensure the appropriate conditions for societies, particularly in the developing world, to be able to provide the already recognized first and second-generation rights.

There has, however, been some debate concerning this category of rights. Some experts object to the idea of these rights because they are ‘collective rights, in the sense of being held by communities or even whole states. They argue that human rights can only be held by individuals. The argument is more than merely verbal because some people fear such a change in terminology could provide a "justification" for certain repressive regimes to deny (individual) human rights in

[13] ibid.

the name of these collective human rights; for example, severely curtailing civil rights in order to secure "economic development".[14]

a)Establishment of Various Human Rights Reference Mechanisms (Cold-War Era):1945-1990

The Council of Europe is the continent's leading human rights organization.

It includes 46 member states, 27 of which are members of the European Union. All Council of Europe member states has signed up to the European Convention on Human Rights, a treaty designed to protect human rights, democracy, and the rule of law.

After the end of World War II, states were determined to ensure that such a tragedy would never happen again. Winston Churchill in his speech of 19 September 1946 in Zurich was the first to point out that there was a need for "a remedy which, as if by miracle, would transform the whole scene and in a few years make all Europe as free and happy as Switzerland is today. We must build a kind of United States of Europe". On 5 May 1949, in St James's Palace, London, the treaty constituting the Statute of the Council of Europe was signed by ten countries: Belgium, France, Luxembourg, the Netherlands, the United Kingdom, Ireland, Italy, Denmark, Norway, and Sweden. The Council of Europe was thus ready to start work. Its first sessions were held in Strasbourg, which was to become its permanent seat. In the initial flush of enthusiasm, the first major convention was drawn up: The European Convention on Human Rights and Fundamental Freedoms, signed in Rome on 4 November 1950 and coming into force on 3 September 1953. "The aim of the Council of Europe is to achieve greater unity among its Members for the purpose of safeguarding and realizing the ideals and principles that are their common heritage, and facilitating their economic and social progress," according to the Statute. These goals were to be achieved

[14] of Europe Council, 'The Evolution of Human Rights' (2017) <https://www.coe.int/en/web/compass/the-evolution-of-human-rights> accessed 10 November 2022.

"through the organs of the Council by discussion of issues of common concern and by agreements and joint action in economic, social, cultural, scientific, legal, and administrative matters, as well as in the maintenance and advancement of human rights and fundamental freedoms."[15]

Being the primary tool of the Council of Europe to enforce the protection of human rights among the signatories, the ECHR, preceded by the Hague Congress of Europe in 1948 and signed on 4 November 1950, entered into force on 3 September 1953. The genesis of the ECHR is generally framed as a major step in a European project taking a new start after the Second World War and the atrocities of Nazism and Fascism, as well as a means for the emerging West to distance itself from communism. Its international character made it a powerful instrument not only to achieve its goal of providing 'the legal and political means for deterring the future rise of any sort of fascism in Europe' (including a communist one) and establishing a safe democratic society[16]. It envisaged the establishment of a European Commission of Human Rights to monitor its implementation, as well as the establishment of a supranational European Court of Human Rights (ECtHR), which was established in 1959. This is commonly referred to as a "quasi-revolutionary idea" because, unlike the UDHR, it implied that the Convention was binding after ratification. Furthermore, the ECHR recognized the right to petition, empowering the individual against the state, in contrast to the UDHR, which did not initially retain the right to petition. It is customary to situate the ECHR in a Cold War context. To be sure, the Convention was not signed by any of the Eastern European countries under the Soviet yoke. The Soviet Union opposed it because of its unilateral focus on political rights, excluding social rights – basically a different view on the meaning of democracy. But it is easily overlooked that many West European countries also were less than lukewarm. The jurisdiction of the Court was not accepted by major states, including Italy, the UK, and France. Although presenting itself as a human rights champion, the latter only ratified the Convention in 1974. They proved very reluctant to give up national sovereignty, but not just as a principle. European states basically continued to view international law 'as being an issue subject to diplomatic calculations'.18 While readily willing to judge others, they simply refused to be judged

[15] Council of Europe, 'About the Council of Europe' (2011) <https://www.coe.int/en/web/yerevan/the-coe/about coe#:~:text=Founded%20in%201949%2C%20the%20Council,action%20throughout%20the%20whole%20continent> accessed 10 November 2022.

[16] Patrick Pasture, 'The Invention of European Human Rights' [2018] Catholic University of Leuven/KU Leuven 20.

themselves: France, for example, while not having ratified the Convention, did sit in the ECtHR and even provided its president[17].

The Single European Act of 1986 answered contemporary challenges of the late Cold-War Era and included social rights as well, as it referred not only to the ECHR but also to the European Social Charter, advocating freedom, equality, and social justice.Though under-researched, social rights appear to have been a means through which the ECs/EU distinguished themselves from the United States. The EU would define itself as referring to 'the principles of liberty, democracy, and respect for human rights and fundamental freedoms and of the rule of law'.64 It declared human rights a condition for membership and developed instruments to promote them. This focus received further impetus after the integration of former communist countries which were once part of the Soviet bloc and the main target of European (western) Cold War human rights rhetoric.[18]

b) Post-Cold War Era:1990-Present

After the fall of the Berlin wall on November 9,1989, the CoE Secretary-General stated that the Council was the only organization capable of encompassing all the countries of Europe, once they had adopted democratic rules.

On November 6,1990, referring to his country's accession to the Council of Europe, the Hungarian Minister of Foreign Affairs said the event marked the first step in the re-establishment of the unity of the continent. Soon special programs were designed to help the European partners in the process of democratic transition and to become full members of the European democratic and legal community.

At the initiative of Francois Mitterand, the first summit of the heads of state and government of the Council of Europe's member states took place in Vienna on 8 and 9 October 1993. The Vienna Summit confirmed and extended the enlargement policy of the Council of Europe. It also laid the

[17] ibid.
[18] Patrick Pasture, 'The Invention of European Human Rights' [2018] Catholic University of Leuven/KU Leuven 20.

ground for Protocol 11 to the European Convention on Human Rights making its machinery more expeditious and effective.[19]

Thus, the democratization process in Central and Eastern Europe led to Hungary's accession in 1990, Poland's in 1991, Bulgaria's in 1992, and Estonia, Lithuania, Slovenia, and Romania in 1993. That of the Czech Republic and the Slovak Republic replaced Czechoslovakia's accession from 1991 to 1993. Latvia joined the Council of Europe on 10 February, Moldova and Albania on 13 July and Ukraine and the former Yugoslav Republic of Macedonia on November 9,1995, Croatia on 6 November 1996, Georgia on April 27, 1999, Armenia and Azerbaijan on January 25, 2001, Bosnia and Herzegovina on April 24, 2002, Serbia and Montenegro on April 3, 2003. These massive extensions had a massive impact on the post-cold war era. It partially ensured limitations of the state apparatus in these countries which just got independent from decades of brutal oppressive regimes. By doing so, this rapid integration prevented them from again falling into the autocracy when they were most vulnerable thus contributing to the peaceful 'Pax-Europeana' period. [20]

In general, the post-Cold War era presents a benign atmosphere for the conduct and promotion of global human rights. The new era marks a soothing cessation to the ideological rivalry that constrained and hindered human rights during the Cold War; holds the promise of a broad consensus on global human rights, before now non-existent; and, partly due to the democratic resurgence which has characterized this new ago gives center stage to human rights. These are invaluable opportunities for growth that the world needs to corral into concrete human rights gains. An important tool for achieving such gains is increased education about these rights. Education was 'the ultimate sanction' of human rights in the ideologically charged era of the Cold War.[21]

[19] Council of Europe, 'About the Council of Europe' (2011) <https://www.coe.int/en/web/yerevan/the-coe/about-coe#:~:text=Founded%20in%201949%2C%20the%20Council,action%20throughout%20the%20whole%20continent> accessed 10 November 2022.
[20] Council of Europe, 'About the Council of Europe' (2011) <https://www.coe.int/en/web/yerevan/the-coe/about-coe#:~:text=Founded%20in%201949%2C%20the%20Council,action%20throughout%20the%20whole%20continent> accessed 10 November 2022.
[21] Aka, Philip C. and Browne, Gloria J. (1999) "EDUCATION, HUMAN RIGHTS, AND THE POST-COLD WAR ERA," *NYLS Journal of Human Rights*: Vol. 15 : Iss. 3 , Article 2.

II. EUROPEAN COURT OF HUMAN RIGHTS

1. Historical Development

The European Court of Human Rights (the ECHR) is a judicial body established in 1959 to oversee the implementation of the Council of Europe's Convention for the Protection of Human Rights and Fundamental Freedoms (1950), also known as the European Convention on Human Rights. The convention requires signatories to guarantee various civil and political liberties, such as freedom of expression and religion, as well as the right to a fair trial. It is based in Strasbourg, France. In addition to outlining a set of civil and political rights and freedoms*, the Convention established a mechanism for Contracting States to enforce their obligations. [22] Individuals who believe their human rights have been violated and who are unable to remedy their claim through their national legal system may petition the ECHR to hear the case and render a verdict. The court, which also can hear cases brought by states, may award financial compensation, and its decisions often require changes in national law. In order to handle the growing number of cases more efficiently, the European Court of Human Rights and the European Commission of Human Rights, which was established in 1954, were merged in 1998 into a reconstituted court and enabled to hear individual cases without the prior assent of the individual's national government[23]. Despite these changes the ECHR's backlog continued to grow, prompting the adoption in 2010 of additional streamlining measures, which included prohibiting the court from hearing individual cases in which the applicant has not suffered a "significant disadvantage." The court's decisions are binding on all signatories[24]. As of 2015, the ECtHR had issued approximately 18,500 judgments, nearly half of which concerned only five member states (Turkey, Italy, Russia, Romania and Poland). Since 1959, the Court has found at least one violation of the Convention in 84% of cases. The most

[22] John Merrils, 'European Court of Human Rights' (*Britannica*, 2017) <https://www.britannica.com/topic/European-Court-of-Human-Rights> accessed 23 November 2022.
[23] Council of Europe, 'Council' (2014) <https://www.coe.int/en/web/tirana/european-court-of-human-rights> accessed 23 November 2022.
[24] Karina Weller, 'A Brief History of the European Court of Human Rights' (*each other*, 2016) <https://eachother.org.uk/brief-history-european-court-human-rights/> accessed 23 November 2022.

common violation (25% of all 2015 violations) was the right to a fair hearing, specifically excessive length of proceedings. In addition to that, whereas, the official languages of the Court are English and French, applications may be drafted in any one of the official languages of the Contracting States, and there are at present 41 official languages in these States.[25]The Court receives around 900 letters per day and some 250 international telephone calls a day. In terms of functionality, the European Court of Human Rights is evolving into a European quasi-constitutional court. It is less concerned with the exceptional cases that drew the attention of the Convention's founders and more concerned with becoming a broad-based, 'normal' institution.[26]

Figure 2: European Court of Human Rights[27]

[25] Council of Europe, 'Council' (2014) <https://www.coe.int/en/web/tirana/european-court-of-human-rights> accessed 23 November 2022.
[26] Wildhaber, Luzius. "The European Court of Human Rights: The Past, The Present, The Future." American University International Law Review 22, no. 4 (2007): 521-538.
[27] John Merrils, 'European Court of Human Rights' (*Britannica*, 2017) <https://www.britannica.com/topic/European-Court-of-Human-Rights> accessed 23 November 2022.

2. Structure

To handle multiple cases at once, the ECtHR is divided into five sections, or administrative entities, each with its own judicial chamber. Each section is led by a President, a Vice President, and a panel of judges. The Court's 47 judges are chosen by the Council of Europe's Parliamentary Assembly from a list of applicants proposed by the Member States.

Within the Court, the judges work in four different kinds of groups, or 'judicial formations'. Applications received by the Court will be allocated to one of these formations:

1. **Single Judge**: only rules on the admissibility of applications that are clearly inadmissible based on the material submitted by the applicant.

2. **Committee**: composed of 3 judges, committees rule on the admissibility of cases as well as the merits when the case concerns an issue covered by well-developed case law (the decision must be unanimous).

3. **Chamber**: composed of 7 judges, chambers primarily rule on admissibility and merits for cases that raise issues that have not been ruled on repeatedly (a decision may be made by a majority). Each chamber includes the Section President and the 'national judge' (the judge with the nationality of the State against which the application is lodged).

4. **Grand Chamber**: composed of 17 judges, the Grand Chamber hears a small, select number of cases that have been either referred to it (on appeal from a Chamber decision) or relinquished by a Chamber, usually when the case involves an important or novel question. Applications never go directly to the Grand Chamber. The Grand Chamber always includes the President and Vice-President of the Court, the five Section presidents, and the national judge.[28]

The European Court of Human Rights' judges are elected by the Council of Europe's Parliamentary Assembly, giving them democratic legitimacy. Judges must "be of high moral character and possess the qualifications required for appointment to high judicial office or be jurisconsults of recognized competence," according to the European Convention on Human Rights. To ensure that

[28] 'ECHR' (*International Justice Resource Center*, 2015) <https://ijrcenter.org/european-court-of-human-rights/> accessed 23 November 2022.

these standards are met, the election process is divided into two stages: the national selection procedure, in which each state party selects a list of three qualified candidates, and the Assembly's election procedure, in which a special parliamentary committee evaluates the qualifications of the three candidates, as well as the fairness of the national selection procedure, before the Assembly proceeds with the election. When selecting their three candidates, states should ensure that their national procedure is fair and transparent, for example by issuing public and open calls for candidates. All candidates must have appropriate legal qualifications and experience and must have an active knowledge of either English or French – the languages in which Court judgments are drafted – and at least a passive knowledge of the other language.[29]

To ensure gender-balance on the Court, states are also asked to put forward at least one candidate from 'the under-represented sex' unless there are exceptional circumstances. As a result, around a third of the judges on today's Court are women.

To help ensure candidates are fully qualified, an advisory panel of experts offers governments confidential advice on potential candidates before the final list of three is sent to the Assembly. Following receipt of the list of candidates by the Assembly, the Committee on the Election of Judges of the European Court of Human Rights – a special parliamentary committee comprised of legal experts – assesses the fairness and transparency of the national procedure used to select them. It then conducts in-person interviews with each of the candidates and reviews their CVs, which are submitted in a standardised format, to determine whether all three are sufficiently qualified for the job. If the committee determines that all of the conditions have been met, it will make a recommendation to the Assembly on which candidate or candidates it believes are the strongest. If not, it may recommend that the state submit a new list. The Assembly – made up of 324 parliamentarians – then proceeds to vote on the candidates in a secret ballot, held during plenary sessions, in the light of the committee's recommendations. An absolute majority of votes cast is required in the first round. If this is not achieved, a second round is held and the candidate with the most votes is duly elected to serve on the Court for a single term of nine years.[30]

[29] ECHR, 'Election of Judges to the European Court of Human Rights' (2018) <https://website-pace.net/en_GB/web/as-cdh/main> accessed 23 November 2022.
[30] ECHR' (*International Justice Resource Center*, 2015) <https://ijrcenter.org/european-court-of-human-rights/> accessed 23 November 2022

3. Distinction of Judgment and Decision

A decision is usually given by a single judge, a Committee or a Chamber of the Court. It concerns only admissibility and not the merits of the case. Normally, a Chamber examines the admissibility and merits of an application at the same time; it will then deliver a judgment.

If judges disagree with the majority opinion at the decision stage, they may express their 'opposition views,' which include their reasons for disagreement. If they agree with the majority but want to express their reasons, they can write a 'consensus view,' which can be found at the end of the judgment.[31]

4. Proceedings before the Court

The Court's proceedings are mostly written; public hearings are uncommon. There is no fee to submit an application, and the applicant may apply for legal aid to cover expenses incurred later in the proceeding. Legal aid is not granted automatically, and awards are not made immediately but only at a later stage of the proceedings. While a lawyer is not required to file a complaint, applicants should have representation once the case has been declared admissible and must be represented by a lawyer at any hearing before the Court. Applications to the ECtHR are processed in two stages: admissibility and merits. The speed and course of the proceedings will be determined by the facts of the case. However, it could take months or even years for an applicant to receive a decision or judgment.

a) *Admissibly criteria*

Applicants may lodge an application with the Court if they consider that they have personally and directly been the victim of a violation of the rights and guarantees set out in the Convention or its

[31] ECHR' (*International Justice Resource Center*, 2015) <https://ijrcenter.org/european-court-of-human-rights/> accessed 23 November 2022

Protocols. The alleged violation must have been committed by one of the States bound by the Convention. Applicants do not need to be a national of one of the States bound by the Convention. The violation they are complaining of must simply have been committed by one of those States against a person within its "jurisdiction", which usually means on its territory. Applications to the European Court of Human Rights must comply with the requirements described in Article 47 of the Rules of Court. Applicants should be aware that the Court periodically modifies its rules and procedures; in 2014, it began applying stricter requirements for individual applications. To submit an application, applicants should use the application form, which is available online and must be filled out in its entirety. Copies of all relevant documents must be included along with the application, which must be submitted by postal mail. A substantial majority of the applications submitted to the Court are struck from the list or declared inadmissible because they fail to meet one or more of the admissibility criteria. The Court may choose not to examine an application that does not fulfill all of the requirements. [32]

When the Court receives an application, the Court must determine if it meets all of the admissibility requirements. An admissibility decision may be made by a single judge, a three-judge committee, or a seven-judge chamber. To be declared admissible, an application must meet the following criteria:

1. *Exhaustion of domestic remedies:*

As far as exhaustion of domestic remedies is concerned, you must use all remedies in your State which provide redress for the situation you are complaining about. This usually consists of a claim brought before a relevant civil, criminal or administrative court, followed by an appeal where applicable, and even a further appeal to a higher court such as a Supreme Court or Constitutional court, if one exists. In addition, you must comply with the applicable rules and procedures of national law. If your complaint could not have

[32] Egbert Myjert, 'The European Court of Human Rights General Information, Misconceptions and Venomous Remarks' (*ECHR*, 2007) <https://www.rechtspraak.nl/SiteCollectionDocuments/European-court-of-human-rights.pdf> accessed 23 November 2022.

been decided by the national courts because you failed to lodge it within the time-limit prescribed by national law, then your complaint before the Strasbourg Court may be declared inadmissible. And finally, when complaining before national courts, you must raise at least the substance of the Convention violation you are alleging before uECHR.

2. *Four-month application deadline (from the final domestic judicial decision:*

You must submit a completed application form before the end of the mandatory six-month time limit. Only submission of the completed application form interrupts the running of this four-month time-limit.

3. *Complaint against a State party to the European Convention on Human Rights:*

Your application may be declared inadmissible because of the respondent concerned:

- if it is brought against an individual;

- if it is brought against a state that has not ratified the Convention or its Protocols;

- or if it is brought directly against an international organisation, such as one of the European Union institutions, which has not yet acceded to the Convention. However, if your complaint is against an EU Member State in relation to its implementation of EU law, your application may be declared admissible.

4. Applicant suffered a significant disadvantage;

Your application may be declared inadmissible if you have suffered no significant disadvantage. This may be because of the insignificant financial element to your claim if, for example, you complain about non-enforcement of a judgment for EUR 34 or salary arrears for EUR 200. Violation of the right must attain a minimum level of severity to warrant consideration by an international court. However, there are two 'safeguard' clauses within this criterion: the first applies where respect for human rights requires an examination on the merits. Thus, in one case where the amount at stake was only EUR 17, the Court held that a judgment of principle was needed because this was the first case after a change in a national law. If an application fails to meet any of these requirements, it will be declared inadmissible and cannot proceed any further. There is no appeal from a decision of inadmissibility.[33]

b) Merits

If an application is not removed from the list or declared inadmissible earlier, it is assigned to one of the ECtHR's five sections and the State is notified of the complaint. Both parties will have the opportunity to submit observations to the Court at this time. These observations may include specific information requested by the Chamber or the President of the Section, as well as any other material deemed relevant by the parties. The Chamber has the option of considering admissibility and merits separately or concurrently, but it must notify the parties if it intends to do so. When a Chamber issues a judgment on the merits, there is a three-month period before the decision becomes final. During this period, either or both of the parties may request that the application be referred to the Grand Chamber. However, the Grand Chamber only hears a limited number of exceptional cases. If the Court ultimately decides a case in favor of the applicant, it may award just satisfaction (monetary compensation for the damages suffered) and require the State to cover the cost of bringing the case. If the Court finds that there has been no violation, then the applicant

[33] Council of Europe, 'Questions and Answers about ECHR' (2015) <watch europa, 'European Court of Human Rights' (2015) <https://www.europewatchdog.info/en/court/> accessed 23 November 2022.> accessed 23 November 2022.

is not liable for the State's legal expenses. The Committee of Ministers of the Council of Europe is responsible for enforcing the Court's judgments. States are bound by the decisions of the Court and must execute them accordingly. Often this means amending legislation to ensure that the violation does not continue to occur. However, the Court does not have the authority to overrule a national decision or annul national laws.[34]

c. Friendly Settlements

Prior to making a decision on the merits, the Court will make every effort to facilitate the formation of a friendly settlement. If an amicable settlement cannot be reached, the Court will issue a decision on the merits. In cases where the Chamber hearing the case decides to issue an admissibility decision alongside a judgment on the merits, the parties may include information about friendly settlements in their observations to the Court. The procedure before the Court is a litigation. Like in every other litigation, the parties are entitled to reach a settlement during the procedure. Theoretically, it can be initiated by either party, but in the vast majority of cases it is the Court who suggests to the parties to settle the case. In its motion the Court proposes a concrete compensation amount as well. If the parties accept it, they each sign a declaration. In one of them the state concerned acknowledges the human rights violation and undertakes to pay the compensation established. In the other the Applicant accepts the proposed sum and undertakes not to initiate another compensation procedure for the injustice suffered, since it has been remedied.

The most important change is that from now on the Court will not only offer the settlement to the Parties in "routine" cases, but this will become the main rule: the Court will try to use it in almost every case. [35] The parties will have 12 weeks to accept the friendly settlement and if they do not intend to do so, they will have another 12 weeks to put forward observations on the merits. The above practice will result in the acceleration of the proceedings and in less "meritorious" judgments. However, it has to be underlined that this does not affect the level of human rights protection itself, since the state concerned acknowledges the prejudice caused and it will pay

[34] ECHR' (*International Justice Resource Center*, 2015) <https://ijrcenter.org/european-court-of-human-rights/> accessed 23 November 2022.
[35] Carsai Daniel, 'The Friendly Settlement Procedure as a New Practice of the European Court of Human Rights' (2019) <https://drkarsai.hu/en/friendly-settlement-procedure/> accessed 23 November 2022.

compensation as well. It is believed that, the lack of a formal meritorious judgment will be more than compensated by the fact that our case ends much sooner.[36]

d. Interim Measures

The European Court of Human Rights may, under Rule 39 of its Rules of Court, indicate interim measures to any State party to the European Convention on Human Rights. Interim measures are urgent measures which, according to the Court's well-established practice, apply only where there is an imminent risk of irreparable harm. Such measures are decided in connection with proceedings before the Court without prejudging any subsequent decisions on the admissibility or merits of the case in question. In the majority of cases, the applicant requests the suspension of an expulsion or an extradition. The Court grants requests for interim measures only on an exceptional basis, when applicants would otherwise face a real risk of serious and irreversible harm. Such measures are then indicated to the respondent Government. However, it is also possible for the Court to indicate measures under Rule 39 to applicants. The Court's practice is to examine each request individually and in order of priority using a written procedure. . Applicants and governments are notified of the Court's interim measures decisions. Refusals to apply Rule 39 are not appealable. The duration of an interim measure is typically set to cover the duration of the Court's proceedings or a shorter period. The application of Rule 39 of the Rules of Court may be terminated at any time by a Court decision. Because such measures are related to the Court's proceedings, they may be lifted if the application is not maintained. In practice, interim measures are only used in a few cases, the majority of which involve expulsion and extradition. They usually entail suspending the applicant's expulsion or extradition for the duration. [37]

The most typical cases are those where, if the expulsion or extradition takes place, the applicants would fear for their lives (thus engaging Article 2 (right to life) of the European Convention on Human Rights) or would face ill-treatment prohibited by Article 3 (prohibition of torture or

[36] ECHR' (*International Justice Resource Center*, 2015) <https://ijrcenter.org/european-court-of-human-rights/> accessed 23 November 2022.
[37] Council of Europe, 'Questions and Answers about ECHR' (2015) <watch europa, 'European Court of Human Rights' (2015) <https://www.europewatchdog.info/en/court/> accessed 23 November 2022.> accessed 23 November 2022.

inhuman or degrading treatment) of the Convention6. More exceptionally, such measures may be indicated in response to certain requests concerning the right to a fair trial (Article 6 of the Convention), the right to respect for private and family life (Article 8 of the Convention) and freedom of expression (Article 10 of the Convention).[38]

In the Court's case-law as it currently stands, Rule 39 of the Rules of Court is not applied, for example, the following cases: to prevent the imminent demolition of property, imminent insolvency, or the enforcement of an obligation to do military service; to obtain the release of an applicant who is in prison pending the Court's decision as to the fairness of the proceedings; to ensure the holding of a referendum; to prevent the dissolution of a political party; or to freeze the adoption of constitutional amendments affecting the term of office of members of the judiciary. [39]

5. Effects of the ECHR judgment and its enforcement

When the Court delivers a judgment finding a violation, the Court transmits the file to the Committee of Ministers of the Council of Europe, which confers with the country concerned and the department responsible for the execution of judgments to decide how the judgment should be executed and how to prevent similar violations of the Convention in the future. This will result in general measures, especially amendments to legislation, and individual measures where necessary.[40]

6. Jurisdiction of the Court

Occasionally, the Court has included indications with relevance to the execution process concerning both individual and general measures. However, taking account of the institutional balance between the Court and the Committee of Ministers under the Convention, and of the States' responsibility in the execution process, the ultimate choice of the measures to be taken

[38] Egbert Myjert, 'The European Court of Human Rights General Information, Misconceptions and Venomous Remarks' (*ECHR*, 2007) <https://www.rechtspraak.nl/SiteCollectionDocuments/European-court-of-human-rights.pdf> accessed 23 November 2022.

[39] Council of Europe, 'Questions and Answers about ECHR' (2015) <watch europa, 'European Court of Human Rights' (2015) <https://www.europewatchdog.info/en/court/> accessed 23 November 2022.> accessed 23 November 2022.

[40] ECHR' (*International Justice Resource Center*, 2015) <https://ijrcenter.org/european-court-of-human-rights/> accessed 23 November 2022.

remains with the States under the supervision of the Committee of Ministers. In addition to that, Advisory jurisdiction will allow the highest courts in those States that are a party to Protocol 16 to refer questions to the Court on its interpretation of State obligations under the European Convention on Human Rights or its protocols. Protocol 16 brings the European Court's jurisdiction within the same practices as other regional human rights courts; the African Court on Human and Peoples' Rights and the Inter-American Court of Human Rights both may issue advisory opinions, as established in Article 4 of the Protocol to the African Charter on Human and Peoples' Rights on the Establishment of an African Court on Human and Peoples' Rights and Article 2(2) of the Statute of the Inter-American Court of Human Rights in conjunction with Article 64 of the American Convention on Human Rights, respectively. The 10th ratification of Protocol 16 comes in the midst of ongoing reforms of the European Court, including the recent Copenhagen Declaration.[41] The Copenhagen Declaration calls for reduction to the backlog of cases at the European Court, an increase in communication between States parties and the Court, and improvement in the domestic implementation of European Court judgments. . Protocol No. 16 to the Convention on the Rights of the Child (adopted 2 October 2013, enters into force 1 August 2018), CETS 214 (Protocol 16), art. 1 (3). A panel of five judges from the ECtHR Grand Chamber decides whether to accept the request for an advisory opinion and must provide reasons for refusing a request under the Protocol. Id., at art. 2 (1). If the panel grants the request, the Grand Chamber will issue and publish the advisory opinion as well as the reasoning behind it, and any judge who disagrees with that opinion may issue a separate one. Id. at arts. 2(2), 4(1), 4(2), 4(3). (4). The ECtHR's advisory opinion is not legally binding on the state. The panel must include a judge from the requesting court's country, and the country from which the request originated has the right to participate in the proceedings under the Protocol. If the relevant State's European Court judge is unable to serve on the panel, the President of the ECtHR will select a judge from a list provided by the State. Id. at art. 2 (3). The State that made the request may submit written comments and

[41] 'EUROPEAN COURT OF HUMAN RIGHTS TO IMPLEMENT ADVISORY JURISDICTION' (*International Justice Resource Center*, 2018) <https://ijrcenter.org/2018/04/24/european-court-of-human-rights-to-implement-advisory-jurisdiction/> accessed 23 November 2022.

attend the hearing. Id. at art. 3. The President of the ECtHR may also invite other States or individuals to submit comments or participate in the hearing.[42]

III. KEY CONCEPTS

1. Fossil Fuels

Fossil energy sources, including oil, coal and natural gas, are non-renewable resources that formed when prehistoric plants and animals died and were gradually buried by layers of rock. Over millions of years, different types of fossil fuels formed -- depending on what combination of organic matter was present, how long it was buried and what temperature and pressure conditions existed as time passed. [43]Fossil fuels include coal, oil, and natural gas. Coal is a material that is typically found in sedimentary rock deposits where layers of rock and dead plant and animal matter are piled up. More than half of the weight of a piece of[44] coal must come from fossilized plants. Oil was discovered as a solid material between layers of sedimentary rock, such as shale. This material is heated to create the thick oil that can be used to make gasoline. Natural gas is commonly discovered in pockets above oil deposits. It can also be found in non-oil-containing sedimentary rock layers. Methane is the primary component of natural gas. According to the National

[42] Council of Europe, 'Questions and Answers about ECHR' (2015) <watch europa, 'European Court of Human Rights' (2015) <https://www.europewatchdog.info/en/court/> accessed 23 November 2022.> accessed 23 November 2022.
[43] Energy Department, 'Fossil Fuels' (*Fossil*) <https://www.energy.gov/fossil> accessed 10 July 2023.
[44] ibid.

Academies of Sciences, coal, oil, and natural gas account for 81% of total energy consumption in the United States. This is the energy used to heat and power homes and businesses, as well as to power automobiles and factories. Unfortunately, fossil fuels are a finite resource, and waiting millions of years for new coal, oil, and natural gas deposits to form is not an option. In addition, fossil fuels are responsible for nearly three-fourths of human-caused emissions over the last 20 years.[45] When fossil fuels are burned, large amounts of carbon dioxide, a greenhouse gas, are released into the atmosphere. Greenhouse gases trap heat in our atmosphere, which contributes to global warming. Already, the average global temperature has risen by 1 degree Celsius. Warming above 1.5°C threatens additional sea-level rise, extreme weather, biodiversity loss, and species extinction, as well as food scarcity, worsening health, and poverty for millions of people around the world.[46]

a) Coal

Coal is one of the world's most basic energy resources. Its use in human history can be traced back to 1500 BCE, when this black resource was discovered in China However, it was not until the Industrial Revolution of the 18th and 19th centuries that large-scale excavation and widespread use of coal resources occurred on a global scale. During that period of technological reformation, coal was the dominant fuel for powering the new industries. As a result, the coal market was greatly expanded, and it has continued to grow ever since, with occasional temporary fluctuations. Coal is still an important part of the world's primary energy mix today. Coal provided 29% of global primary energy needs, 41% of global electricity, and an essential input into 44% of global industrial production in 2015. Coal's role is expected to remain unchanged over the next 20 years due to its low cost and widespread availability[47]. Coal is defined as having more than 50 percent by weight (or 70 percent by volume) carbonaceous matter produced by the compaction and hardening of altered plant remains—namely, peat deposits. Different varieties of coal arise because

[45] National Geographic Society, 'Fossil Fuels' (*National Geographic*, 16 June 2023) <https://education.nationalgeographic.org/resource/fossil-fuels/> accessed 10 July 2023.
[46] WU X.F and Chen G.Q, 'Coal Use Embodied in Globalized World Economy: From Source to Sink through Supply Chain' (2018) Volume 81, Part 1, Economics School, Zhongnan University of Economics and Law, Wuhan 430073, PR China 978.
[47] ibid.

of differences in the kinds of plant material (coal type), degree of coalification (coal rank), and range of impurities (coal grade). Mining operations are risky. Every year, hundreds of coal miners are killed or seriously injured. Roof falls, rock bursts, and fires and explosions are all major mine hazards. The latter occur when flammable gases trapped in coal (such as methane) are released during mining operations and accidentally ignited. Methane can be extracted from coal beds prior to mining using hydraulic fracturing (fracking), which involves injecting high-pressure fluids underground to open fissures in rock, allowing trapped gas or crude oil to escape into pipes that bring the material to the surface. Methane extraction was expected to lead to safer mines and provide a source of natural gas that had long been wasted. However, enthusiasm for this technology has been tempered with the knowledge that fracking has also been associated with groundwater contamination.[48] However, with the widespread coal use, the environmental pollution caused by coal mining and combustion has become an increasing concern [5]. Issues such as fog and haze, acid rain, and groundwater contamination have long been linked to coal. What's more, coal has a relatively high carbon content, and coal consumption is now regarded as the leading source of anthropogenic greenhouse gas emissions causing global warming threat [6]. In 2014, coal-related CO2 emissions reached 15 Gt, nearly half of global total emissions [7]. The use of coal has therefore become the focus of both energy and environmental strategies, and has attracted an enormous amount of research attention.[49]

Anthracite, bituminous, subbituminous, and lignite coal are the four main types or ranks of coal. The ranking is determined by the types and amounts of carbon in the coal, as well as the amount of heat energy the coal can produce. The amount of pressure and heat that acted on the plants over time determines the rank of a coal deposit.[50]

Anthracite contains 86%–97% carbon and generally has the highest heating value of all ranks of coal. Anthracite accounted for less than 1% of the coal mined in the United States in 2021. All of

[48] C Kopp Otto, 'Coal' (*Britannica*, 3 July 2023) <https://www.britannica.com/science/coal-fossil-fuel> accessed 10 July 2023.
[49] WU X.F and Chen G.Q, 'Coal Use Embodied in Globalized World Economy: From Source to Sink through Supply Chain' (2018) Volume 81, Part 1, Economics School, Zhongnan University of Economics and Law, Wuhan 430073, PR China 978.
[50] EIA, 'Coal Types' (*EIA coals*, 19 October 2022) <https://www.eia.gov/energyexplained/coal/> accessed 10 July 2023.

the anthracite mines in the United States are in northeastern Pennsylvania. In the United States, anthracite is mainly used by the metals industry.[51]

Bituminous coal contains 45%–86% carbon. Bituminous coal in the United States is between 100 million and 300 million years old. Bituminous coal is the most abundant rank of coal found in the United States, and it accounted for about 45% of total U.S. coal production in 2021. Bituminous coal is used to generate electricity and is an important fuel and raw material for making coking coal or use in the iron and steel industry. Bituminous coal was produced in at least 16 states in 2021, but five states accounted for about 78% of total bituminous production: West Virginia (30%), Pennsylvania (16%), Illinois (14%), Kentucky (10%), and Indiana (7%).[52]

Subbituminous coal typically contains 35%–45% carbon, and it has a lower heating value than bituminous coal. Most subbituminous coal in the United States is at least 100 million years old. About 46% of total U.S. coal production in 2021 was subbituminous and about 88% was produced in Wyoming and 8% in Montana. The remainder was produced in Alaska, Colorado, and New Mexico.[53]

Lignite contains 25%–35% carbon and has the lowest energy content of all coal ranks. Lignite coal deposits tend to be relatively young and were not subjected to extreme heat or pressure. Lignite is crumbly and has high moisture content, which contributes to its low heating value. Lignite accounted for 8% of total U.S. coal production in 2021. About 56% was mined in North Dakota and about 36% was mined in Texas. The other 8% was produced in Louisiana, Mississippi, and Montana. Lignite is mostly used to generate electricity. A facility in North Dakota also converts lignite to synthetic natural gas that is sent in natural gas pipelines to consumers in the eastern United States.[54]

[51] ibid.

[52] EIA, 'Coal Types' (*EIA coals*, 19 October 2022) <https://www.eia.gov/energyexplained/coal/> accessed 10 July 2023.
[53] ibid.
[54] ibid.

Figure 3: Coal[55]

b) Natural Gas

Natural gas is a colorless, highly flammable gaseous hydrocarbon primarily composed of methane and ethane. It is also known as methane gas or natural methane gas. It is a type of petroleum that is commonly found alongside crude oil. Natural gas is a fossil fuel used to generate electricity, heat homes, cook food, and power some vehicles. [56]It is used as a chemical feedstock in the manufacture of plastics and is required for the production of a variety of other chemical products such as fertilizers and dyes. The first discoveries of natural gas seeps were made in Iran between 6000 and 2000 BCE. Many early writers described the natural petroleum seeps in the Middle East, especially in the Baku region of what is now Azerbaijan. The gas seeps, probably first ignited by lightning, provided the fuel for the "eternal fires" of the fire-worshipping religion of the ancient Persians.[57]

[55] ibid.
[56] Riva, Joseph P. , Carruthers, John E. , Waddams, A.L. , Atwater, Gordon I. and Solomon, Lee H.. "natural gas". *Encyclopedia Britannica*, 30 Jun. 2023, https://www.britannica.com/science/natural-gas. Accessed 10 July 2023.
[57] ibid.

Natural gas is frequently found dissolved in oil at high pressures in a reservoir, and it can also exist as a gas cap above the oil. The pressure of natural gas exerted on the subterranean oil reservoir in many cases provides the drive to force oil to the surface. This type of natural gas is known as associated gas; it is frequently regarded as the gaseous phase of crude oil and typically contains some light liquids such as propane and butane. As a result, associated gas is sometimes referred to as "wet gas.[58]" There are also reservoirs containing only gas and no oil. This gas is known as nonassociated gas. Nonassociated gas is derived from reservoirs that are not linked to any known source.[59] Geologists often use seismic surveys on land and in the ocean to find the right places to drill natural gas and oil wells. Seismic surveys create and measure seismic waves in the earth to get information on the geology of rock formations. Seismic surveys on land may use a *thumper truck*, which has a vibrating pad that pounds the ground to create seismic waves in the underlying rock. Sometimes small amounts of explosives are used. Seismic surveys conducted in the ocean use blasts of sound that create sonic waves to explore the geology beneath the ocean floor.[60]

c) Oil

This primary fuel accounts for roughly one-third of the world's primary energy. Oil is primarily composed of carbon and hydrogen, with trace elements added. Because oil is primarily composed of carbon and hydrogen atoms.[61] Crude oil's chemical composition varies greatly depending on where it was drilled and under what conditions it was formed. Conventional oil is trapped or reservoired beneath the ground in the tiny pore spaces of porous and permeable rock. Unconventional oil, primarily shale oil, is held tightly in non-permeable shale deposits, making extraction more difficult and necessitating hydraulic fracturing. In most cases, extraction requires drilling a well into a reservoir containing crude oil. [62]Depending on how much access to the deposit is required, the well can be vertical, directional, or horizontal. Directional and horizontal drilling allows more of the well to be in the deposit, increasing oil flow. Following that, the oil is extracted

[58] EIA, 'Natural Gas Explained' (EIA Natural Gas, 27 December 2022) <https://www.eia.gov/energyexplained/natural-gas/> accessed 10 July 2023.
[59] ibid.
[60] ibid.
[61] University of Calgary, 'Energy Education' (*Energy Educatiom*) <https://energyeducation.ca/encyclopedia/Oil> accessed 14 July 2023.
[62] ibid.

and refined. It can be distilled or subjected to hydrocarbon cracking to produce useful products and fuels.[63] In the United States, gasoline is the most popular petroleum product. In 2021, finished motor gasoline consumption averaged about 8.8 million b/d (369 million gallons per day), accounting for roughly 44% of total US petroleum consumption. Although oil is a vital fuel at the moment, the production of carbon dioxide from the combustion of crude oil and its refined products contributes to climate change. In addition to the carbon dioxide and other emissions produced by the combustion of oil products, the production, transportation, refining, and drilling processes all have their own environmental consequences. Some of the chemicals produced contribute to smog, while others are greenhouse gases that contribute to global warming.[64] The destruction of land used during extraction, as well as the possibility of an oil spill, can both destroy potentially significant ecological areas.[65] Additionally, control and trade of oil resources present many geopolitical tensions between nations and, on a more local level, between stakeholder groups and communities which in turn makes oil the single greatest catalyst behind the energy wars around the world.

The important role that oil plays in modern industrial society justifies describing this century as the oil age. Although other forms of energy can, at a price, replace oil, the importance of petroleum to our economy and way of life makes it essential that we have an understanding of the possible future availability of oil and the costs of alternatives. [66]Energy sources for industrial and domestic power and for personal and commercial transportation are available at a price and technologies are available to utilize them; similarly petroleum as a basis for petrochemicals will be available for a long time but if the availability of petroleum as a prime source of energy is questionable after a few decades, the economic, technological and political implications are sufficiently important to merit some critical consideration of oil's future. The inevitable conclusions seem to be that for the next few decades we are dependent on conventional crude oil and that in order to achieve economic expansion no barriers should be put in the way of its development[67]. At present large tax and tariff

[63] ibid.
[64] ibid.
[65] ibid.
[66] Warman, H. R. "The Future of Oil." *The Geographical Journal*, vol. 138, no. 3, 1972, pp. 287–97. *JSTOR*, https://doi.org/10.2307/1795436. Accessed 15 July 2023.
[67] ibid.

revenues play a predominant role in the price structure of oil and oil products.[68] It is important that in the future a reasonable balance should be kept to ensure that oil can fill the gap before other energy sources become available. Perhaps the most obvious conclusion is that the pressures of shortage and changes of source will inevitably lead to continued price increases.[69]

2. Renewable Energy

Renewable energy is defined as energy derived from natural sources that is replenished at a faster rate than it is consumed. Sunlight and wind are two examples of such constantly replenishing sources. Renewable energy sources abound and are all around us. Generating renewable energy creates far lower emissions than burning fossil fuels. Transitioning from fossil fuels, which currently account for the lion's share of emissions, to renewable energy is key to addressing the climate crisis.[70] Renewable energy is booming as innovation lowers costs and begins to deliver on the promise of a clean energy future. Solar and wind generation in the world are breaking records and being integrated into the national power grid without compromising reliability. This means that renewables are increasingly replacing 'dirty' fossil fuels in the power sector, resulting in lower carbon and other types of pollution emissions.[71] However, not all 'renewable' energy sources are environmentally friendly. When considering the impact on wildlife, climate change, and other issues, biomass and large hydroelectric dams create difficult trade-offs.[72] While renewable energy is often thought of as a new technology, harnessing nature's power has long been used for heating, transportation, lighting, and more. Wind has powered boats to sail the seas and windmills to grind grain. The sun has provided warmth during the day and helped kindle fires to last into the evening.

Unfortunately, many industries around the world continue to rely on fossil fuels for electricity generation. These fuels are, without a doubt, very effective in terms of power production quality,

[68] Sorrell Steve and others, 'Global Oil Depletion: A Review of the Evidence', (2010) 38 5290
[69] ibid.
[70] UN, 'What Is Renewable Energy?' <https://www.un.org/en/climatechange/what-is-renewable-energy> accessed 14 July 2023.
[71] "Renewable Energy: The Clean Facts" (Renewable Energy Definition - Sources, Clean Alternatives, June 1, 2022) <https://www.nrdc.org/stories/renewable-energy-clean-facts#sec-whatis>accessed 4 July 2023.
[72] ibid.

but they are not advantageous in the long run. Fossil fuels will run out one day, and industries must transition to renewable energy sources as soon as possible. The most important feature of renewable energy is its abundant supply. It is limitless. [73]Renewable energy sources are clean energy sources that have a much lower environmental impact than traditional fossil energy technologies. The majority of renewable energy investments go toward materials and personnel to build and maintain the facilities, rather than expensive energy imports. The sustainable nature of wind, hydropower, geothermal, solar and biomass highly encourage the energy supply companies to utilize them. Moreover, people can setup small solar panels over their homes to tackle their own load demands. [74]Alternative energy sources will be around for a long time. They have become an essential component of the energy portfolio. The goal of using renewable energy is to mitigate the negative environmental effects associated with nonrenewable energy sources such as coal, oil, and natural gas. Choosing a renewable energy source will not only result in long-term cost savings, but will also help protect the environment from the risks of fossil fuel emissions[75].

3. Carbon Emissions

Carbon dioxide (the CO2) is a colorless, odorless, and non-poisonous gas produced by the combustion of carbon and the respiration of living organisms[76]. It is a greenhouse gas. The release of greenhouse gases and/or their precursors into the atmosphere over a specific area and time period is referred to as emissions. Carbon dioxide emissions, also known as CO2 emissions, are caused by the combustion of fossil fuels and the production of cement; they include carbon dioxide produced during the consumption of solid, liquid, and gas fuels, as well as gas flaring. Carbon dioxide emissions, primarily from the combustion of fossil fuels, have risen dramatically since the start of the industrial revolution. Most of the world's greenhouse gas emissions come from a relatively small number of countries. China, the United States, and the nations that make up the

[73] ibid.
[74] Panwar NL, Kaushik SC and Kothari S, "Role of Renewable Energy Sources in Environmental Protection: A Review" (2011) 15 Renewable and Sustainable Energy Reviews 1513 <http://dx.doi.org/10.1016/j.rser.2010.11.037>
[75] ibid.
[76] "Glossary:Carbon Dioxide Emissions - Statistics Explained" (*Glossary:Carbon dioxide emissions - Statistics Explained*) https://ec.europa.eu/eurostat/statistics-explained/index.php?

European Union are the three largest emitters on an absolute basis. Per capita greenhouse gas emissions are highest in the United States and Russia.[77] Carbon dioxide is also a greenhouse gas produced as a byproduct of human activities. Burning fossil fuels—coal, oil, and natural gas—is the number one source of global CO2 emissions. In 2009, the world got more than 80% of its energy from fossil fuels. Sixteen countries got 99% or more of their energy from fossil fuels. Electricity, heat production, and transportation are the biggest sources of global CO2 emissions. Broken down by fuel type, the single largest source of global CO2 emissions is the consumption of coal, followed by petroleum, then natural gas. CO2, like other greenhouse gases, is found naturally in Earth's atmosphere.[78] Scientists believe that the concentration of CO2 in Earth's atmosphere remained relatively stable for thousands of years at roughly 280 parts per million (ppm). However, since the Industrial Revolution in the 18th century, human activity has significantly increased the atmospheric concentration. Today, the concentration of CO2 in the atmosphere stands at about 390ppm—an increase of over 30%. Carbon emissions are dangerous in that they threaten the livelihood of our planet, animals, humans, and ultimately, life as we know it. [79]The amount of carbon emissions trapped in our atmosphere causes global warming, which causes climate change, symptoms of which include melting of the polar ice caps, the rising of sea levels, the disturbance of animals' natural habitats, extreme weather events, and so many more negative side effects that are dangerous to the planet, to human and animal life, and to our future. Globally, the growth in carbon emissions is largely from industry, transport and energy supply, while residential and commercial buildings, forestry/deforestation and agricultural sectors also contribute substantial quantities of carbon dioxide, methane and other greenhouse gases. There are currently two types of carbon-emissions: Direct emissions and indirect emissions[80].

[77] "Global Carbon Emissions" (*Global Carbon Emissions*) <https://education.nationalgeographic.org/resource/global-co2-emissions> accessed 4 July 2023.
[78] ibid.
[79] Stephanie Osmanski, "How Do Carbon Emissions Affect the Environment?" (*Green Matters*, March 30, 2020) https://www.greenmatters.com/p/how-do-carbon-emissions-affect-environment accessed 4 July 2023.
[80] Stephanie Osmanski, "How Do Carbon Emissions Affect the Environment?" (*Green Matters*, March 30, 2020) <https://www.greenmatters.com/p/how-do-carbon-emissions-affect-environment>.

a) Direct Emissions

Carbon emissions have an international reach. For decades, experts have warned that inaction will result in severe hunger, mass migration due to flooding, the collapse of financial markets, and a slew of other socioeconomic disasters. [81]If businesses were worried about COVID-19, climate change will make them nervous. As a result, leaders and executives are paying more attention to sustainability and revising their mission and purpose. Sustainability is a business imperative and should not be viewed as a subset of corporate social responsibility. Businesses must reduce their environmental impact. One of the most significant ways to do this is by reducing their carbon footprint, and this starts with monitoring carbon emissions. This comprehensive guide explains emission scopes 1, 2 & 3 (as defined by the GHG Protocol), and how Plan A helps companies become carbon neutral.[82] Fugitive emissions are leaks from greenhouse gases (e.g. refrigeration, air conditioning units). It is important to note that refrigerant gases are a thousand times more dangerous than CO_2 emissions. Companies are encouraged to report these emissions[83].

Process emissions are released during industrial processes, and on-site manufacturing (e.g. production of CO_2 during cement manufacturing, factory fumes, chemicals).[84]

b) Indirect Emissions

(1) Indirect Emissions-owned

Scope 2 emissions are those caused by the generation of purchased energy from a utility provider. In other words, all GHG emissions into the atmosphere caused by the use of purchased electricity, steam, heat, and cooling. Electricity will be the sole source of scope 2 emissions for the vast majority of businesses. Simply put, the energy consumed is divided into two categories: Scope 2

[81] "What Are Scopes 1, 2 and 3 of Carbon Emissions?" (*Plan A Academy*) <https://plana.earth/academy/what-are-scope-1-2-3-emissions>
[82] ibid.
[83] "Complete Guide to Understanding Scope 1, 2, and 3 Emissions | ClimatePartner" (*ClimatePartner*) <https://www.climatepartner.com/en/scope-1-2-3-complete-guide>
[84] "What Are Scopes 1, 2 and 3 of Carbon Emissions?" (*Plan A Academy*) <https://plana.earth/academy/what-are-scope-1-2-3-emissions>.

includes the electricity used by the end user. Scope 3 is concerned with the energy consumed by utilities during transmission and distribution.[85]

(2) Indirect Emissions-not owned

Scope 3 emissions include all indirect emissions that occur in the reporting company's value chain, including both upstream and downstream emissions. In other words, emissions are linked to the operations of the company. Scope 3 emissions are classified into 15 categories according to the GHG protocol.[86]

Upstream activities are classified into several categories: for many businesses, business travel is one of the most important to report (e.g. air travel, rail, underground and light rail, taxis, buses and business mileage using private vehicles). Employee commuting must also be reported because it results in emissions from travel to and from work. It can be reduced by using public transportation and working from home. Waste generated during operations is waste that is sent to landfills and wastewater treatment facilities. Methane (CH4) and nitrous oxide (N2O) emissions from waste disposal are more damaging than CO2 emissions.[87]

Downstream activities are the investments are mostly included for financial institutions, but other organizations can still include them in their reporting. GHG accounting classifies investments into four categories: equity investments, debt investments, project finance, managed investments, and client services. Franchises are businesses operating under a licence to sell or distribute another company's goods or services within a certain location. Franchisees (e.g. companies that operate franchises and pay a fee to the franchisor) should include emissions, from operations under their control.[88]

[85] Marcia Assuncao, "Direct and Indirect Emissions: Mapping of SCOPES 1, 2 and 3 According to the GHG Protocol" (*Global Climate Initiatives*, April 16, 2022) <https://globalclimateinitiatives.com/en/e-brochures-knowledge/direct-and-indirect-emissions/>.
[86] "What Are Scopes 1, 2 and 3 of Carbon Emissions?" (*Plan A Academy*) <https://plana.earth/academy/what-are-scope-1-2-3-emissions>.
[87] ibid.
[88] "What Are Scopes 1, 2 and 3 of Carbon Emissions?" (*Plan A Academy*) <https://plana.earth/academy/what-are-scope-1-2-3-emissions>.

4. Climate Change

Long-term changes in temperature and weather patterns are referred to as climate change. These changes could be natural, such as variations in the solar cycle. However, since the 1800s, human activities have been the primary cause of climate change, owing primarily to the use of fossil fuels such as coal, oil, and gas. [89]Carbon dioxide and methane are two examples of greenhouse gas emissions that are causing climate change. These are caused by using gasoline to drive a car or coal to heat a building, for example. Clearing land and forests can also result in the release of carbon dioxide. [90]Garbage landfills are a major source of methane emissions. Among the major emitters are energy, industry, transportation, buildings, agriculture, and land use. The mechanics of the Earth's climate system are straightforward. The planet cools when energy from the sun is reflected off the earth and back into space (mostly by clouds and ice), or when the earth's atmosphere releases energy. The planet warms when it absorbs the sun's energy or when atmospheric gases prevent heat released by the earth from radiating into space (the greenhouse effect).[91] A variety of natural and human-made factors can have an impact on the Earth's climate system. Although many people use the word "global warming" interchangeably with the climate change. However, it only showcases one side of the climate change. Land animals will find it more difficult to find food and water in a warmer world. Polar bears, for example, may become extinct as the ice on which they rely melts, and elephants may struggle to find the 150-300 litres of water they require each day. **[92]**

a) Human-made Climate Change

The climate of the Earth has changed over time. There have been seven cycles of glacial advance and retreat over the last 650,000 years, with the abrupt end of the last ice age about 11,700 years ago marking the beginning of the modern climate era—and of human civilization. The majority of these climate changes are caused by very small changes in Earth's orbit, which alter the amount of

[89] "What Is Climate Change? A Really Simple Guide" (*BBC News*) <https://www.bbc.com/news/science-environment-24021772>.
[90] United Nations, 'What Is Climate Change?' <https://www.un.org/en/climatechange/what-is-climate-change> accessed 15 July 2023.
[91] "What Is Climate Change?" (*NASA*) <http://www.nasa.gov/audience/forstudents/k-4/stories/nasa-knows/what-is-climate-change-k4.html>.
[92] "Causes of Climate Change | US EPA" (*US EPA*, April 15, 2021) <https://www.epa.gov/climatechange-science/causes-climate-change>.

energy our planet receives from the sun. Human activities have released large amounts of carbon dioxide and other greenhouse gases into the atmosphere since the Industrial Revolution, altering the earth's climate. Natural processes such as changes in solar energy and volcanic eruptions also have an impact on the earth's climate. [93]They do not, however, explain the warming that we have observed over the last century. Scientists have pieced together a record of the earth's climate by analyzing ice cores, tree rings, glacier lengths, pollen remains, and ocean sediments, as well as studying changes in the earth's orbit around the sun. 2 This record demonstrates that the climate naturally varies over a wide range of time scales, but this variability does not account for the observed warming since the 1950s. Rather, it is highly likely (> 95%) that human activities were the primary cause of the warming. Greenland, Antarctica, and tropical mountain glacier ice cores show that the Earth's climate responds to changes in greenhouse gas levels. Tree rings, ocean sediments, coral reefs, and sedimentary rock layers all contain ancient evidence. This ancient evidence, known as paleoclimate evidence, shows that current warming is roughly ten times faster than the average rate of ice-age recovery warming. The IPCC stated in its summary for policymakers in its 2013 fifth assessment report that it is *'extremely likely that more than half of the observed increase in global average surface temperature'* from 1951 to 2010 was caused by human activity. 'Extremely likely' meant that there was a 95% to 100% chance that humans were responsible for more than half of modern warming. In the last 150 years, modern civilization's industrial activities have increased atmospheric carbon dioxide levels from 280 parts per million to 414 parts per million. The panel also concluded that human-produced greenhouse gases such as carbon dioxide, methane, and nitrous oxide are responsible for much of the observed increase in Earth's temperatures over the last 50 years[94]. Despite widespread scientific agreement, there is a significant partisan divide in the world regarding belief in, and attitudes toward, human-caused climate change. One of the most prominent explanations for this phenomenon is directional 'motivated reasoning,' in which new information is processed in the service of reaching a predetermined, desired conclusion.

[93] "What Is the Evidence for Human-Caused Climate Change?" (*Caltech Science Exchange*) <http://scienceexchange.caltech.edu/topics/sustainability/evidence-climate-change>.
[94] Rosamund Pearce, "Analysis: Why Scientists Think 100% of Global Warming Is Due to Humans - Carbon Brief" (*Carbon Brief*, December 13, 2017) <https://www.carbonbrief.org/analysis-why-scientists-think-100-of-global-warming-is-due-to-humans/>.

Although climate change poses a significant scientific challenge, it also poses a significant political challenge[95]. Given the magnitude of its impact on humanity and the public policies required to address it, climate change is unavoidably political. However, the politicization of climate change has resulted in polarized views that are impeding public policy. Addressing climate change necessitates public policies as well as international cooperation . This, in turn, is dependent on public attitudes toward climate change [2]. The partisan divide has been a significant barrier to gaining public support, and closing it requires an understanding of the psychological processes that drive opinion formation.[96]

b) Natural Climate Change

Long before humans existed, the earth experienced periods of warming and cooling. The sun's intensity, volcanic eruptions, and changes in naturally occurring greenhouse gas concentrations are all factors that can contribute to climate change. We can categorize natural climate change in few categories: [97]

1) Solar Cycles: The sun's magnetic field flips every 11 years, causing an 11-year cycle of solar brightening and dimming. However, the variation is minor and has no effect on the Earth's climate. "Grand solar minima," decades-long periods of reduced solar activity that have occurred 25 times in the last 11,000 years, are more significant. The Maunder minimum, which took place between 1645 and 1715, saw solar energy fall by 0.04% to 0.08% below the modern average.[98]
2) Volcanic sulfur(eruptions); The Ilopango volcano in El Salvador erupted so violently in the year 539 or 540 A.D. that its eruption plume reached high into the stratosphere. Cold summers, drought, famine, and plague wreaked havoc on societies all over the world. Ilopango caused a 2 degree Celsius drop that lasted 20 years. More recently, the 1991

[95] Robin Bayes and James N Druckman, "Motivated Reasoning and Climate Change" (2021) 42 Current Opinion in Behavioral Sciences 27 <http://dx.doi.org/10.1016/j.cobeha.2021.02.009>.
[96] ibid.
[97] "How Earth's Climate Changes Naturally (and Why Things Are Different Now)" (*Quanta Magazine*, July 21, 2020) <https://www.quantamagazine.org/how-earths-climate-changes-naturally-and-why-things-are-different-now-20200721/>.721/>.
[98] ibid.

Pinatubo eruption in the Philippines cooled the global climate by 0.6 degrees Celsius for 15 months. The primary impact of volcanoes on the climate is short-term cooling. Volcanic eruptions generate clouds of dust and ash that block some sunlight. Because the ash particles are relatively heavy, they fall to the ground within three months, resulting in a very short-lived cooling effect. However, sulfur dioxide is also present in volcanic debris. This gas combines in the atmosphere with water vapor and dust to form sulfate aerosols, which reflect sunlight away from the Earth's surface. These aerosols are lighter than ash particles and can last for a year or more in the atmosphere.[99]

3) Earth Orbital Wobbles: Earth's orbit wobbles as the sun, the moon and other planets change their relative positions. These cyclical wobbles, called Milankovitch cycles, cause the amount of sunlight to vary at middle latitudes by up to 25% and cause the climate to oscillate. These cycles have operated throughout time, yielding the alternating layers of sediment you see in cliffs and road cuts. However, orbital changes are so gradual that they are only visible after thousands of years, not decades or centuries. The Every year, the earth completes one full orbit around the sun. It is angled at 23.5° to the perpendicular plane of its orbital path. Changes in the earth's tilt can cause small but climatically significant changes in the strength of the seasons; more tilt means warmer summers and colder winters; less tilt means cooler summers and milder winters. Milankovitch cycles sent the planet into and out of ice ages during the Pleistocene epoch, which ended about 11,700 years ago. Today, Earth is approaching another minimum of northern sunlight, which means that if human carbon dioxide emissions continue, we will enter another ice age within the next 1,500 years[100].
4) Plate Tectonics: The movement of land masses on Earth's crust can gradually change the weathering thermostat. For the last 50 million years or so, the planet has been cooling as plate tectonic collisions thrust up chemically reactive rock like basalt and volcanic ash in the warm, wet tropics, increasing the rate of reactions that draw carbon dioxide from the atmosphere. Furthermore, the construction of the Himalayas, Andes, Alps, and other

[99] ibid.
[100] "How Earth's Climate Changes Naturally (and Why Things Are Different Now)" (*Quanta Magazine*, July 21, 2020) <https://www.quantamagazine.org/how-earths-climate-changes-naturally-and-why-things-are-different-now-20200721/>.

mountains over the last 20 million years has more than doubled erosion rates, accelerating weathering. Another factor contributing to the cooling trend was the separation of South America and Tasmania from Antarctica 35.7 million years ago, which resulted in the formation of a new ocean current around Antarctica. This boosted ocean circulation and carbon dioxide-consuming plankton, causing Antarctica's ice sheets to expand significantly. [101]

5) Evolutionary Changes: The evolution of new forms of life has occasionally reset the Earth's thermostat. Photosynthetic cyanobacteria, which first appeared 3 billion years ago, began terraforming the planet by emitting oxygen. As they proliferated, oxygen levels in the atmosphere eventually rose 2.4 billion years ago, while methane and carbon dioxide levels fell. For the next 200 million years, the Earth experienced a series of "snowball" climates. Another series of snowball climates began 717 million years ago with the evolution of ocean life larger than microbes, because the organisms began raining detritus into the deep ocean, exporting carbon from the atmosphere into the abyss and eventually burying it. When the first land plants appeared 230 million years later, in the Ordovician period, they began to form the terrestrial biosphere, burying carbon on continents and extracting land nutrients that washed into the oceans, boosting life there as well. These changes most likely triggered the 445 million-year-old ice age.[102]

c) History of the Climate Change

Climate change refers to long-term changes in the Earth's climate and weather patterns. It took nearly a century of research and data to persuade the vast majority of scientists that human activity could alter our entire planet's climate.[103] Experiments suggesting that human-produced carbon dioxide (CO2) and other gases could accumulate in the atmosphere and insulate the Earth were

[101] "How Earth's Climate Changes Naturally (and Why Things Are Different Now)" (*Quanta Magazine*, July 21, 2020) <https://www.quantamagazine.org/how-earths-climate-changes-naturally-and-why-things-are-different-now-20200721/>.
[102] ibid.
[103] "What Is Climate Change?" (*What Is Climate Change?*, September 1, 2021) <https://www.nrdc.org/stories/what-climate-change>.

met with more curiosity than concern in the 1800s.[104] CO2 readings would provide some of the first data to support the global warming theory by the late 1950s. An abundance of data, along with climate modeling and real-world weather events, would eventually show not only that global warming was real, but that it also had a slew of disastrous consequences. Carbon, it turns out, is crucial to comprehending climate change. Plant respiration and weathering absorb carbon, which is expelled when an animal exhales. When combined with hydrogen, it forms a hydrocarbon that can be burned to generate both heat and energy in industry and vehicles.[105] It is a key component in the production of two of the most important greenhouse gases (GHG): carbon dioxide (CO2) from combustion and methane (CH4) from a variety of sources such as rice cultivation, animal waste, natural gas extraction, and wetlands[106]. Svante Arrhenius, a Swedish chemist, developed the first model that took into account the influence of carbon dioxide in the atmosphere in 1896. In 1938, steam engineer Callendar took a break from his day job and began collecting data from 147 weather stations around the world. He discovered that global temperatures had risen 0.3°C over the previous 50 years by doing all of his calculations by hand. Callendar contended that CO2 emissions from industry were to blame for global warming. Other scientists, however, were skeptical that humans could have an impact on such a large system as the climate. Despite his crude methods, Callendar's estimates of global warming were remarkably accurate and in line with current assessments.[107]

A new type of climate concern emerged in the early 1970s: global cooling. As people became more concerned about the pollutants they were emitting into the atmosphere, some scientists hypothesized that the pollution could block sunlight and cool the Earth. In fact, the Earth did cool slightly between 1940 and 1970 due to a postwar surge in aerosol pollutants, which reflected sunlight away from the planet.[108] The early 1980s would see a significant rise in global temperatures. Many experts point to 1988 as a watershed event that thrust global warming into the spotlight. 1988 was the hottest summer on record (although many since then have been hotter). As

[104] "What Is Climate Change?" (*What Is Climate Change?*, September 1, 2021) <https://www.nrdc.org/stories/what-climate-change>.
[105] "A Brief History of Climate Change Discoveries" (*A brief history of climate change discoveries*) <http://www.discover.ukri.org/a-brief-history-of-climate-change-discoveries/>
[106] ibid.
[107] ibid.
[108] "Climate Change History" (*HISTORY*) <https://www.history.com/topics/natural-disasters-and-environment/history-of-climate-change>.

global warming became accepted as a real phenomenon, scientists investigated the potential consequences of a warming climate. Predictions included severe heat waves, droughts, and stronger hurricanes caused by rising sea surface temperatures. [109]

d) Emergencies directly linked to the Climate Change

Everyone's food and water security is threatened by climate change. Climate change is a direct cause of soil degradation, which reduces the amount of carbon that the earth can hold. Today, 500 million people live in erosion-affected areas, and up to 30% of food is lost or wasted as a result. Meanwhile, climate change reduces the quantity and quality of water available for drinking and agriculture.[110] Crops that have thrived for centuries are struggling to survive in many regions, putting food security at risk. Such consequences disproportionately affect the poor and vulnerable.[111] Global warming is likely to widen the gap in economic output between the world's richest and poorest countries. Climate-related disasters and weather extremes have always been a part of our planet's system. However, as the world warms, they become more frequent and intense. Heatwaves, droughts, typhoons, and hurricanes are wreaking havoc on every continent, causing widespread devastation. 90% of disasters are now classified as weather- and climate-related, costing the global economy 520 billion USD per year and pushing 26 million people into poverty as a result.[112] Climate change poses a significant risk to international peace and security. Climate change increases competition for resources such as land, food, and water, causing socioeconomic tensions and, in some cases, mass displacement. Climate change is a risk multiplier, exacerbating already-existing problems. Droughts in Africa and Latin America are a direct cause of political unrest and violence.[113] In the absence of action, the World Bank estimates that more than 140 million people in Sub-Saharan Africa, Latin America, and South Asia will be forced to migrate

[109] "Climate Change History" (*HISTORY*) <https://www.history.com/topics/natural-disasters-and-environment/history-of-climate-change>.
[110] UN, 'The Climate Crisis – A Race We Can Win' <https://www.un.org/en/un75/climate-crisis-race-we-can-win#:~:text=Rising%20temperatures%20are%20fueling%20environmental,disruption%2C%20conflict%2C%20and%20terrorism> accessed 15 July 2023.
[111] ibid.
[112] UNEP, "Facts about the Climate Emergency" (*UNEP - UN Environment Programme*) <http://www.unep.org/facts-about-climate-emergency>.
[113] ibid.

within their regions by 2050.[114] The effects of climate change on natural disasters are likely to increase the number of humanitarian crises. Furthermore, it will undoubtedly have an impact on the population's long-term general health, particularly among the most vulnerable. As global temperatures rise, ambulatory care organizations and hospitals will face foreseeable health risks. These dangers include the geographic spread of infectious (particularly zoonotic) diseases, an increase in cardiac and respiratory illnesses, and a slew of other health concerns. Some of these risks have been described in detail for the majority of developed countries as well as some developing countries.[115] Every country in the world will face a threat to their health-care system. However, because developed countries have a more robust response capacity to adapt to these potential new risks, risks and their consequences are likely to be reduced [8]. All of this, however, is contingent on the ability to identify risks, organize response systems, and implement procedures that reduce risks and their impact on the population [4]. There are significant disparities in hospital response around the world, including the percentage of countries' health expenditure, bed density, hospital size and surface area, hospital status (public and private), hospital organization, and funding. According to a study conducted in 12 U.S. cities, the effects of temperature on hospital admissions occur primarily within a few days of exposure [12]. [116]Low temperatures constrict blood vessels, increasing blood pressure and thus the risk of stroke and other cardiovascular events. High temperatures dilate blood vessels, increasing cardiac output and the risk of decompensated heart failure. Extreme temperatures stress the cardiovascular system, increasing the risk of heart attack. In terms of respiratory implications, it has been demonstrated that as pollution levels rise, the frequency of ED admissions for asthma and chronic obstructive pulmonary disease (COPD) rises . Climate change is relevant because it has been shown to increase pollution. Many climate change effects are thought to be detrimental to respiratory health and to increase the frequency and severity of respiratory diseases such as asthma in the general population.[117]

[114] ibid.
[115] Ghazali D and others, “Climate Change Impacts on Disaster and Emergency Medicine Focusing on Mitigation Disruptive Effects: An International Perspective” (2018) 15 International Journal of Environmental Research and Public Health 1379 <http://dx.doi.org/10.3390/ijerph15071379>
[116] ibid.
[117] ibid.

e. The dilemma in Human Rights: Permanent Economic Growth vs Reversing Climate Change

The question of whether economic growth can be sustained while addressing climate change and remaining within broader environmental limits is still being debated. Different points of view exist, ranging from the belief that economic growth is unconstrained by environmental constraints to the belief that sustained economic growth is simply incompatible with environmental constraints. How economic growth is defined in the first place is critical in determining how well it can coexist with efforts to combat climate change. Economic growth is commonly measured as the rate of change in output, or, more specifically, in real GDP. Real GDP is a measure of the market value of all final goods and services produced in an economy in a given year, adjusted for inflation, and is used as an indicator of a country's material living standards. These measurements, however, exclude the value of the natural environment to people, as well as other aspects of human wellbeing that are difficult to quantify, and as a result, alternative measures of wellbeing have been proposed.[118]

Economic growth has generally been linked to rising greenhouse gas emissions since the Industrial Revolution. A shift from fossil-fuel-based to low-carbon energy sources can help sustain the same or even higher levels of output while lowering emissions, allowing growth to be decoupled from emissions. General technological advancement can also help decouple growth from emissions by lowering the initial input energy or other material required for production. The ongoing digital transformation of the economy via the advancement of information and communication technology (ICT) may also benefit decoupling.[119]

Many high-income countries have shown signs of decoupling their economic growth from emissions in recent decades, even when offshore production is considered. The reasons for this have included a shift away from coal and toward low-carbon energy, explicit climate change

[118] "Can We Have Economic Growth and Tackle Climate Change at the Same Time? - Grantham Research Institute on Climate Change and the Environment" (Grantham Research Institute on climate change and the environment) <https://www.lse.ac.uk/granthaminstitute/explainers/can-we-have-economic-growth-and-tackle-climate-change-at-the-same-time/>.
[119] ibid.

policies, and a shift away from manufacturing and toward less carbon-intensive, service-based industries, to varying degrees in different countries.[120]

Economic growth has taken precedence over environmental protection on the grounds that improving people's living standards now must take precedence over preserving nature for future generations. However, this way of thinking fails when the destruction of natural capital reaches such a level that it stifles growth. The critical question is whether runaway climate change eliminates the growth-versus-environment dichotomy, forcing them to be viewed as two sides of the same coin. At the global level, the answer is an unequivocal yes, and at the country level, the answer is qualified yes.[121]

Because decades of environmental destruction have made countries extremely vulnerable to shocks, the perspective on growth and poverty reduction on one side versus environmental protection and climate action on the other needs to change. Poorer countries and populations are disproportionately affected. Climate action is not only complementary to poverty reduction; in some ways, it is a prerequisite for the latter. When one-third of Pakistan is submerged and 10% of GDP is lost, constructing flood defenses becomes synonymous with poverty alleviation. To stabilize climate change, all countries must contribute to achieving global net zero emissions. If countries continue on their current path, global temperatures will rise by more than 3 degrees Celsius above pre-industrial levels, rendering poverty reduction obsolete. The case for poorer countries investing in mitigation strengthens as renewable energy technologies become more competitive than fossil fuels and rich countries increase low-cost financing of climate investments.[122]

Most scientists do not think degrowth propositions advanced in the literature will be pursued and therefore focus on the main challenges that must be tackled to achieve decoupling. Unprecedented efforts are required to achieve green growth. But hoping for humanity to sacrifice growth appears unrealistic. Degrowth scholars, argue that the global economy must be scaled down, and that systemic change and redistribution are required to do so and address the "fairy tales of eternal

[120] ibid.
[121] "The Truth about Climate Action versus Economic Growth | Brookings" (Brookings, April 4, 2023) <https://www.brookings.edu/articles/the-truth-about-climate-action-versus-economic-growth/>.
[122] ibid.

economic growth," as campaigner Greta Thunberg told world leaders in 2019. This academic debate on extreme positions is largely theoretical on some levels. Developing countries will want to grow and will put policies in place to do so. Deeper GDP cuts in rich countries are also theoretical: economic growth is critical for welfare and issues such as debt sustainability, pensions, and social security. A contracting or 'degrowing' economy could have serious consequences. To decouple GHG emissions and GDP growth, a massive increase in green investment and a significant shift in investment are required. According to the IEA's (2021b) net-zero pathway, global energy capital investments must increase from a current yearly average of about $2 trillion to $5 trillion (2019 prices) by 2030, then remain nearly constant until 2050.[123]

Global GHG emissions must be rapidly reduced in order to avoid global warming of more than 1.5°C above pre-industrial levels. It will be difficult to achieve this without sacrificing economic prosperity: so far, decoupling GHG emissions from GDP growth has been slow or non-existent. This is interpreted as justification for degrowth scholars to advocate for a radical overhaul of our economic system. However, this approach appears to be unrealistic. Demanding lower, let alone negative, growth would imply that large parts of the world would be unable to develop, or would do so only at the expense of even harsher degrowth in developed countries. This advice will obviously not be followed by low-income countries, and the idea of redistributing income from rich to poor countries is also unrealistic.[124]

[123] "Can Climate Change Be Tackled without Ditching Economic Growth?" (Bruegel | The Brussels-based economic think tank, July 3, 2023) <https://www.bruegel.org/working-paper/can-climate-change-be-tackled-without-ditching-economic-growth>.
[124] ibid.

IV. CASE BEFORE THE COURT (DUARTE AGOSTINHO AND OTHERS v. PORTUGAL AND OTHERS)

1. Overview

a) The policy of the European Union Regarding the Climate Change

According to European climate legislation, EU countries must reduce greenhouse gas emissions by at least 55% by 2030. Their goal is for the EU to be carbon neutral by 2050. To achieve climate neutrality, EU countries must drastically reduce their greenhouse gas emissions by 2050 and find ways to compensate for the remaining and unavoidable emissions in order to achieve a net-zero emissions balance.

The European Climate Law, a key component of the European Green Deal, was adopted by the Council in June 2021.[125] It obligates EU countries to meet both the 2030 and 2050 climate goals. Climate-related projects will receive 30% of the EU's long-term budget for 2021-2027 and Next Generation EU, respectively. To ensure a fair climate transition, the EU has implemented a just transition mechanism, which aims to provide financial and technical assistance to the regions most affected by the transition to a low-carbon economy. To that end, up to €90 billion will be mobilized.[126] However, it is becoming increasingly clear that acute challenges to policy coherence and effectiveness—applying to emerging policy on adaptation as well as mitigation—are ahead in a Europe that is becoming more polarized between its more environmentally conscious and less environmentally conscious citizens. Members of the European Union, as well as those in Central and Eastern Europe, have made significant concessions to safeguard their fossil-fuel-intensive industries. Despite the fact that the 2015 Paris Agreement provides an important opportunity to 'ratchet up' the ambition of EU policy is proving difficult to seize[127]. Since the late 1990s, the European Union (the EU) has amassed a string of seemingly impressive climate policy

[125] 'Climate Change: What the EU Is Doing' (07.02.02023) <https://www.consilium.europa.eu/en/policies/climate-change/#:~:text=Under%20the%20European%20climate%20law,climate%2Dneutral%20EU%20by%202050> accessed 15 July 2023.
[126] ibid.
[127] Tim Rayner and Andrew Jordan, "Climate Change Policy in the European Union" [2016] Oxford Research Encyclopedia of Climate Science <http://dx.doi.org/10.1093/acrefore/9780190228620.013.47>.

accomplishments, lending credence to the oft-heard claim that it is a global leader in the field. For example, it has devised novel approaches to sharing the effort required to reduce emissions among its Member States and across economic sectors.[128] In order to combat climate change, the EU develops and implements policies and strategies, as well as taking the lead in international climate negotiations. Conferences such as the 26th United Nations Conference of the Parties on Climate Change (COP26) in Glasgow from October 31 to November 12, 2021, demonstrate participation and strive for action to combat climate change and assist vulnerable nations. The EU is committed to ensuring the proper implementation of the Paris Agreement (the international climate change treaty established at COP21). It aims to promote low-carbon technologies while also protecting and improving environmental quality.[129]

Climate change, environmental degradation, and resource depletion are some of the current issues, and society as a whole is becoming more aware of them. Governmental institutions have made significant strides in environmental improvement in recent years. This is the case with the European Commission, which plays a critical role in the fight against climate change by developing and implementing various policies and strategies.[130]

b) Portuguese Approach to fight the Climate Change

Portugal is still among the top-performing countries in this year's CCPI, climbing two spots to 14th. The country improves its rating in the category of GHG Emissions, now at a medium and up 16 spots from a year ago. It also receives a medium in the categories of Energy Use, Renewable Energy, and Climate Policy. In February 2022, Portugal implemented a climate law named *'Lei de Bases do Clima'*, which includes an increase in the 2030 target of reducing GHG emissions by 55% compared to 2005 levels, as well as the possibility of reaching net zero by 2045 rather than 2050. Furthermore, the climate law includes the intention to strategically assess legislative measures and major public investments for their contribution to meeting climate targets. While the CCPI experts applaud the climate law, they point out that it falls short in some

[128] Tim Rayner and Andrew Jordan, "Climate Change Policy in the European Union" [2016] Oxford Research Encyclopedia of Climate Science <http://dx.doi.org/10.1093/acrefore/9780190228620.013.47>.
[129] Javier Cifuentes-Faura, 'European Union Policies and Their Role in Combating Climate Change over the Years' (2022) 15 Air Quality, Atmosphere & Health 1333.
[130] ibid.

areas, such as ending fossil fuel subsidies in 2030. [131]They also believe that the law's implementation and enforcement are critical to Portugal's climate ambitions. To achieve a well-below-2°C trajectory, Portugal must strengthen its policies to decarbonize the power sector and promote energy efficiency and renewable energy deployment. The country must halt the expansion of intensive agriculture and monoculture, as well as protect forests, biodiversity, and fertile land.[132]

Following OECD Development Assistance Committee (the DAC) policy guidelines on the mainstreaming of environment and climate change into development cooperation, Portugal has been consistently strengthening and refining its action in this regard, including the incorporation of these guidelines into existing mechanisms such as the Interministerial Commission for Cooperation and the mandatory prior assessment by Cames IP on the quality, relevance, and adequacy of development cooperation.[133] From the pioneering provisions in the 1976 Constitution (Article 66) to the new Basic Law on Climate, Portugal has a very strong legal framework for protecting human rights and the environment," as the UN expert stated in the previous statements. Furthermore, significant steps have been taken, including the closure of the last coal-fired power plants, achieving 99 percent access to safe drinking water, and establishing an Environmental Fund with a budget of more than €1.1 billion in 2022.[134] Portugal has enormous solar potential but ranks 13th in the EU in terms of solar energy generation. Since 2012, wind energy production in Portugal has increased by only 2% per year, compared to more than 20% globally. Recycling rates have fallen short of EU targets, urban air pollution – primarily from traffic – exceeds healthy levels, and many low-income Portuguese continue to live in inefficient buildings.[135]

[131] "Portugal – Climate Performance Ranking 2023 | Climate Change Performance Index" (Climate Change Performance Index | The Climate Change Performance Index (CCPI) is a scoring system designed to enhance transparency in international climate politics., November 14, 2022) <https://ccpi.org/country/prt/> accessed 15 July 2023.
[132] ibid.
[133] "Home" (Portugal | Integrating Environmental and Climate Action into Development Co-operation : Reporting on DAC Members' High-Level Meeting Commitments | OECD iLibrary, January 1, 1887) <https://www.oecd-ilibrary.org/sites/d0f27d0f-en/index.html?itemId=/content/component/d0f27d0f-en>
[134] ibid.
[135] ibid.

2. Facts of the Case

- Six Portuguese youth filed a complaint with the European Court of Human Rights against 33 countries on September 2, 2020. The complaint claims that the respondents violated human rights by failing to take adequate climate change action, and it seeks an order requiring them to take more aggressive action.[136]

- The complaint is based on European Convention on Human Rights Articles 2, 8, and 14, which protect the right to life, the right to privacy, and the right not to face discrimination. The complainants contend that the effects of climate change in Portugal, such as forest fires, endanger their right to life; that their right to privacy includes their physical and mental well-being, which is jeopardized by heatwaves that force them to spend more time indoors; and that, as young people, they are vulnerable to the worst effects of climate change.[137]

- Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Germany, Greece, Denmark, Estonia, Finland, France, Croatia, Hungary, Ireland, Italy, Lithuania, Luxembourg, Latvia, Malta, the Netherlands, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, and Sweden are named as defendants, along with Norway, Russia, Switzerland, Turkey, Ukraine, and the United Kingdom. The complainants claim that the respondents have failed to meet their human rights obligations by refusing to agree to emission cuts that will limit temperature rise to 1.5 degrees Celsius, as stipulated in the Paris Agreement.[138]

[136] "Duarte Agostinho and Others v. Portugal and 32 Other States - Climate Change Litigation" (Climate Change Litigation) <http://climatecasechart.com/non-us-case/youth-for-climate-justice-v-austria-et-al/> accessed 20 July 2023.
[137] ibid.
[138] ibid.

- On November 30, 2020, The European Court of Human Rights fast-tracked and communicated the case to 33 defendant countries, requiring them to respond by the end of February 2021. According to the Global Legal Action Network (the GLAN), who are supporting the case, only a tiny minority of cases before the Court are fast-tracked and communicated.[139]

- On February 4, 2021, the Court denied the defendant governments' motion to overturn its fast-tracking decision. The governments had asked the court to overturn the case's priority treatment and hear only arguments on the admissibility of the case. The Court denied these motions in a letter to the parties and gave the defendants until May 27, 2021 to file a defense on both admissibility and the merits of the case.[140]

- The Court also extended the deadline for third-party interventions until May 6, 2021. Among the seven third-party interventions, Amnesty International intervened in the case on May 5, 2021, and submitted written observations to the European Court of Human Rights. The submission backs up the claimants' position by presenting legal arguments to the Court demonstrating that international law requires states to respect, and not allow companies under their jurisdiction to violate, the human rights of people living outside their borders.[141]

- On May 19, 2021, the European Commission filed a new intervention with the European Court of Human Rights, submitting written observations. Noting the severe impact of environmental degradation and climate change on human rights, the Commissioner contends that international environmental and children's rights law instruments should play an important role in defining the scope of states' obligations to prevent human rights violations caused by environmental harm. The Commission defends EU policy in the field of environmental protection on the basis of sound legal reasoning and scientific evidence. The term 'climate emergency' expresses the political will to meet the Paris Agreement's

[139] ibid.
[140] ibid.
[141] ibid.

obligations. According to the Commissioner, *'the increasing number of climate change-related applications provide the Court with a unique opportunity to continue to forge the legal path towards a more complete implementation of the Convention and to offer real-life protection to individuals affected by environmental degradation and climate change'*.[142]

- The claimants received the respondent governments' respective defenses on August 14, 2021. However, the claimants have decided not to make them public based on legal advice. The claimants have until January 12, 2022 to respond to the defenses of the governments.

- The Chamber of the European Court of Human Rights relinquished jurisdiction to the Grand Chamber on June 30, 2022. Because the case raises a serious question affecting the interpretation of the Convention (Article 30 ECHR), it will now be heard by the ECtHR's Grand Chamber of 17 judges.

- The case will be heard in the European Court of Human Rights on 27 September 2023.

[142] ibid.

3. CLAIMS OF THE PARTIES

a) Claims of Duarte Agostinho and Others

- The applicants argue that the forest fires that Portugal has been experiencing every year for several years, since 2017, are a direct result of this global warming. The complainants claim that they are at risk of health problems as a result of these fires and that they have experienced sleep disorders, allergies, and breathing difficulties, all exacerbated by very high temperatures during the hot season, in the wake of or during forest fires. During the forest fires that occurred several times a year sometimes, they were unable to spend time outside, to play or exercise, and schools were temporarily closed.[143]

- Applicants emphasize that the climate disorder generates very strong storms in winter and claim that their home, located in Lisbon, is very close to the sea and potentially at risk of being devastated by such storms.[144]

- The applicants also claim to be anxious about natural disasters such as forest fires that have killed more than a hundred people, which have already occurred in their neighbourhood and which they have occasionally witnessed. Furthermore, their anxiety is linked to the prospect of living in an increasingly warmer climate throughout their lives, which would affect them, and the families that they might form in the future.[145]

[143] "HUDOC - European Court of Human Rights" (HUDOC - European Court of Human Rights) <https://hudoc.echr.coe.int/fre?i=001-206535>accessed 15 July 2023.
[144] ibid.
[145] ibid.

- The applicants also claim to be anxious about natural disasters such as forest fires that have killed more than a hundred people, which have already occurred in their neighbourhood and which they have occasionally witnessed. Furthermore, their anxiety is linked to the prospect of living in an increasingly warmer climate throughout their lives, which would affect them, and the families that they might form in the future.[146]

- The applicants allege that these 33 States have not complied with their positive obligations under articles 2 and 8 of the Convention, read in the light of the commitments made under the 2015 Paris Climate Agreement. (the COP21). They refer more specifically to the commitment under article 2 of the Agreement to contain the increase in global average temperature significantly below 2°C from pre-industrial levels and to continue efforts to limit the rise in temperature to 1.5°C compared to pre-industry levels, under the understanding that this would significantly reduce the risks and effects of climate change.[147]

- The complainants also alleged a violation of Article 14 in conjunction with Articles 2 and/or 8 of the Convention, arguing that global warming affects their generation more and that, given their age, the interference in their rights is more pronounced than that of previous generations, given the continued deterioration of climate conditions over time.[148]

- Given that four applicants are children, they argued that the above-mentioned provisions of the Convention should be read in the light of Article 3 (1) of the United Nations Convention on the Rights of the Child, which requires that any decision concerning them be based on the primary consideration of the best interests of the child. They are also based on the principle of intergenerational equity contained in several international instruments, including the 1992 Rio Declaration on Environment and Development, the Preamble to the

[146] ibid.
[147] ibid.
[148] ibid.

Paris Agreement and the 1992 United Nations Framework Convention on Climate Change, according to which the right to development must be realized in a way that equitably meets the development and environmental needs of present and future generations. They believe that there is no objective and reasonable justification for placing the burden of climate change on younger generations as a result of the adoption of inadequate measures to reduce warming.[149]

- The first three claimants also complained about the difficulty, given the increasing drought peaks, of continuing to grow vegetables in their garden and to extract water from the well on their family property. Recurring forest fires in recent years have caused damage to their family property, including ashes emissions.[150]

b) Claims of Portugal and 32 Other Nations

- Respondent party Portugal claims that it is very unjust and scientifically unsubstantiated to blame Portugal's inaction on climate change for the forest fires, as the Iberian Peninsula historically has been very prone to forest fires due to unique weather conditions in this region.

- Respondent parties also allege that, when it comes to combating climate change, the EU countries have done more than any country or region on the planet, as it was only bloc which managed to decrease C02 emissions more than 32 percent since 1990.

- Respondent parties claim that they are strictly bound by Paris Climate Agreement and they have clear vision to become carbon-neutral by 2050.

- Respondent parties argued that contrary to the claims of the applicant party, who make interpretation of the ECHR convention article rules too loosely, there are no violations of

[149] ibid.
[150] ibid.

the articles of the convention as states are doing their best to mitigate the impact of the climate change without further creating instability through radical changes in their respective societies,

- Respondent states claim that European countries have the highest child development index in the world, so it is highly unlikely that in the case of climate change intergenerational equity is breached by any of the states and the burden is placed on children.

4. ESTABLISHED AGENDA OF THE COURT

- Do the applicants fall within the jurisdiction of the respondent States within the meaning of article 1 of the Convention as interpreted by the Court, taking into account, inter alia, the commitments made as a result of the ratification or signature of the 2015 Paris Agreement to reduce polluting emissions in order to contain global warming significantly below 2 °C compared to pre-industrial levels and to continue the action taken to limit the temperature rise to 1.5 °C?

- More specifically, are the facts denounced capable of raising the responsibility of the respondent States, taken individually or collectively on the basis of their national or, as the case may be, European policies and regulations, aimed at measures to reduce the carbon footprint of their economies, including as a result of activities carried out abroad (see, for example, Banković et al. v. Belgium and others (dec.) [GC], No. 52207/99, ECHR 2001-XII; Ilaşcu and others v. Moldova and Russia [GC], No. 48787/99, ECHR 2004-VII; and M.N. et al. v. Belgium [GC] (Dec.), No. 3599/18, 5 May 2020)?

- If so, can the applicants be regarded as current or potential victims, within the meaning of article 34 of the Convention as interpreted by the Court, of a violation of one of the rights

of the Covenant invoked in the present case as a result of greenhouse gas emissions from the 33 responding States?

- In particular, whether the applicants have directly or indirectly and seriously suffered the consequences of the alleged inadequate action or inaction of the respondent States to the above-mentioned 1.5oC target (see, for example, *Caron et al. c. France (Dec.), No. 48629/08, 29 June 2010*; *Cordella et al. v. Italy, Nos. 54414/13 and 54264/15, 24 January 2019; and Aly Bernard* et al. and *Greenpeace – Luxembourg v. Luxembourg (Dec.), No. 29197/95, 29 June 1999*)

- If the answer to Question No. 2 is affirmative, has there been a violation of Articles 2, 3 and 8 of the Convention, taken in isolation and combined with Article 14, as well as Article 1 of Protocol No. 1 to the Covenant?

- In particular, in view of their discretion in the field of the environment, have the responding States fulfilled their obligations under the provisions of the Convention invoked, read in the light of the relevant provisions and principles, such as the precautionary principles and the principles of intergenerational equity, contained in international environmental law, including international treaties to which they are parties, including:

  – by adopting appropriate regulation and implementing it by means of adequate and sufficient measures to the objective of limiting the temperature rise to 1.5 °C (see, for example, *Tătar v. Romania, No. 67021/01, §§ 109 and 120, 27 January 2009*, and *Greenpeace E.V. et al. v. Germany (Dec.), No. 18215/06, 19 May 2009*; and

  Building their climate change mitigation regulations on appropriate surveys and studies ensuring effective public participation, as provided for in the 1998 Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (see, for example, *Tătar v. Romania, No. 67021/01, § 118, 27 January 2009*)?

V. APPLICABLE LAW

1. Conventions and International Treaties

a. European Convention on Human Rights

(1) Article 2-Right to Life

Everyone's right to life shall be protected by law. No one shall be deprived of his life intentionally save in the execution of a sentence of a court following his conviction of a crime for which this penalty is provided by law. 2. Deprivation of life shall not be regarded as inflicted in contravention of this Article when it results from the use of force which is no more than absolutely necessary: (a) in defence of any person from unlawful violence; (b) in order to effect a lawful arrest or to prevent the escape of a person lawfully detained;[151]

This means that no one, not even the government, can attempt to end your life. It also implies that the government should take appropriate measures to protect life by enacting laws to protect you and, in some cases, taking steps to protect you if your life is in danger. When making decisions that could put your life in danger or affect your life expectancy, public officials should also consider your right to life. If a member of your family is killed in circumstances involving the state, you may be entitled to an investigation. In addition, the state is required to investigate suspicious deaths and deaths in custody.[152]

[151] "European Convention on Human Rights - ECHR Official Texts - ECHR - ECHR / CEDH" (European Convention on Human Rights - ECHR Official Texts - ECHR - ECHR / CEDH) <https://www.echr.coe.int/european-convention-on-human-rights>.
[152] "Article 2: Right to Life | Equality and Human Rights Commission" (Article 2: Right to life | Equality and Human Rights Commission) <https://www.equalityhumanrights.com/en/human-rights-act/article-2-right-life>.

(2) Article 8-Right to Privacy

1. *Everyone has the right to respect for his private and family life, his home and his correspondence.*

   2. There shall be no interference by a public authority with the exercise of this right except such as is in accordance with the law and is necessary in a democratic society in the interests of national security, public safety or the economic well-being of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights and freedoms of others.[153]

The concept of 'private life' has been interpreted very broadly by the courts. It addresses issues such as your right to choose your sexual orientation, lifestyle, and appearance. It also includes the right to choose who sees and touches you. This means that public authorities cannot, for example, leave you undressed in a crowded ward or take a blood sample without your permission. The concept of private life also includes the right to develop your personal identity as well as the right to form friendships and other relationships. This includes the right to participate in necessary economic, social, cultural, and recreational activities. In some cases, public authorities may be required to assist you in exercising your right to a private life, including your ability to participate in society. This right means that the media and others cannot interfere with your life. It also implies that personal information about you (such as official records, photographs, letters, diaries, and medical records) should be kept secure and not shared without your permission, except in limited circumstances.[154]

(3) Article 14- Right to not experience discrimination

The enjoyment of the rights and freedoms set forth in this Convention shall be secured without discrimination on any ground such as sex, race, colour, language, religion, political or other

[153] "European Convention on Human Rights - ECHR Official Texts - ECHR - ECHR / CEDH" (European Convention on Human Rights - ECHR Official Texts - ECHR - ECHR / CEDH) <https://www.echr.coe.int/european-convention-on-human-rights> accessed 17 July 2023.

[154] "Article 8: Respect for Your Private and Family Life | Equality and Human Rights Commission" (Article 8: Respect for your private and family life | Equality and Human Rights Commission) <https://www.equalityhumanrights.com/en/human-rights-act/article-8-respect-your-private-and-family-life> accessed 17 July 2023.

opinion, national or social origin, association with a national minority, property, birth or other status.[155]

Discrimination occurs when you are treated unfairly in comparison to another person in a comparable situation, and this treatment cannot be objectively and reasonably justified. Discrimination can also occur if you are disadvantaged because you are treated the same as another person despite your different circumstances (for example, if you are disabled or pregnant). Article 14 is based on the fundamental principle that all of us, regardless of race or gender, have the same human rights and should have equal access to them. The Human Rights Act's anti-discrimination provision is not "stand-alone." To invoke this right, you must demonstrate that discrimination has interfered with your enjoyment of one or more of the Act's other rights. You do not, however, need to demonstrate that this other human right was violated.[156]

b) Universal Declaration on Human Rights

(1) Article 3-Right to live

Everyone has the right to life, liberty and security of person.[157]

(2) Article 7-Prohibition of discrimination

All are equal before the law and are entitled without any discrimination to equal protection of the law. All are entitled to equal protection against any discrimination in violation of this Declaration and against any incitement to such discrimination.[158]

(3) Article 12-Right to the Respect of Family Life and Privacy

[155] "European Convention on Human Rights - ECHR Official Texts - ECHR - ECHR / CEDH" (European Convention on Human Rights - ECHR Official Texts - ECHR - ECHR / CEDH) <https://www.echr.coe.int/european-convention-on-human-rights> accessed 17 July 2023.
[156] "Article 14: Protection from Discrimination | Equality and Human Rights Commission" (Article 14: Protection from discrimination | Equality and Human Rights Commission) <https://www.equalityhumanrights.com/en/human-rights-act/article-14-protection-discrimination> accessed 17 July 2023.
[157] "Universal Declaration of Human Rights" (OHCHR) <https://www.ohchr.org/en/universal-declaration-of-human-rights> accessed 17 July 2023.
[158] ibid.

No one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks upon his honour and reputation. Everyone has the right to the protection of the law against such interference or attacks.[159]

c) United Nations Convention on the Rights of the Child

(1) Article 3(1) - Obligation to take any decision concerning children be based on the paramount consideration of the best interests of the child

In all actions concerning children, whether undertaken by public or private social welfare institutions, courts of law, administrative authorities or legislative bodies, the best interests of the child shall be a primary consideration.[160]

d) 1992 Rio Declaration on Environment and Development

(1) Principle 3 - Obligation to make decisions based on intergenerational equity

The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.[161]

e) 2015 Paris Agreement

(1) Article 2(a)- Commitment to hold the rise of global temperatures below 2 degrees compared to pre-industrial levels

[159] ibid.
[160] "UN Convention On The Rights Of The Child | Save the Children UK" (UN Convention On The Rights Of The Child | Save the Children UK) <https://www.savethechildren.org.uk/what-we-do/childrens-rights/united-nations-convention-of-the-rights-of-the-child> accessed 18 July 2023.
[161] "Cultural Rights" (Cultural Rights) <https://culturalrights.net/en/documentos.php?c=18&p=195#:~:text=The%20Rio%20Declaration%20states%20that,and%20key%20sectors%20of%20societies.>. accessed 18 July 2023.

Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change;[162]

3. European Union Law

a) European Climate Law- commitment to make the EU carbon-neutral by 2050

The Commission has, in its communication of 28 November 2018entitled 'A Clean Planet for all – A European strategic long-term vision for a prosperous, modern, competitive and climate-neutral economy', presented a vision for achieving net-zero greenhouse gas emissions in the Union by 2050 through a socially-fair and cost-efficient transition.[163]

b) Charter of Fundamental Rights of the European Union

(1) Article 2-Right to Life

Everyone has the right to life. No one shall be condemned to the death penalty, or executed.[164]

(2) Article 7- Right to Privacy

Everyone has the right to respect for his or her private and family life, home and communications.[165]

(3) Article 21- Right to not experience a discrimination

---

[162] "Https://Unfccc.Int/Process-and-Meetings/the-Paris-Agreement" <https://unfccc.int/process-and-meetings/the-paris-agreement>.
[163] "European Climate Law" (Climate Action) <https://climate.ec.europa.eu/eu-action/european-green-deal/european-climate-law_en> accessed 18 July 2023.
[164] "EU Charter of Fundamental Rights" (European Commission) https://commission.europa.eu/aid-development-cooperation-fundamental-rights/your-rights-eu/eu-charter-fundamental-rights_en accessed 18 July 2023.
[165] ibid.

Any discrimination based on any ground such as sex, race, colour, ethnic or social origin, genetic features, language, religion or belief, political or any other opinion, membership of a national minority, property, birth, disability, age or sexual orientation shall be prohibited. Within the scope of application of the Treaties and without prejudice to any of their specific provisions, any discrimination on grounds of nationality shall be prohibited.[166]

(4) Article 24(2)- Commitment to consider child's best interest as a priority when taking decisions relating to them

In all actions relating to children, whether taken by public authorities or private institutions, the child's best interests must be a primary consideration.[167]

5. Relevant Domestic Laws

a) Portugal Climate Law no 98/2021

The Government shall create and implement a category of tax deductions - Green IRS - that benefits taxpayers that acquire, consume or use environmentally sustainable goods and services.

The existence of a financial instrument whose purpose is to support climate policies, contributing to the fulfilment of national and international targets and commitments, must also be ensured.

The public and private agents and institutions, in their financing decisions should start taking into account the climate risk and the climate impact. The non-consideration of climate risk and climate impact in the short, medium and long term will be considered a breach of fiduciary duties…[168]

---

166 ibid.
167 ibid.
168 "Framework Climate Law No 98/2021 - Climate Change Laws of the World" (Framework climate law no 98/2021 - Climate Change Laws of the World) <https://climate-laws.org/document/framework-climate-law-no-98-2021_2801> accessed 18 July 2023.

b) Germany Climate Change Act

The purpose of this Act is to provide protection from the effects of worldwide climate change by ensuring achievement of the national climate targets and compliance with the European targets. The ecological, social and economic impacts shall be taken into consideration. The basis of the Act is the obligation according to the Paris Agreement, under the United Nations Framework Convention on Climate Change, to limit the increase in the global average temperature to well below two degrees Celsius and, if possible, to 1.5 degrees Celsius, above the pre-industrial level so as to minimise the effects of worldwide climate change, as well as the commitment made by the Federal Republic of Germany at the United Nations Climate Action Summit in New York on 23 September 2019 to pursue the long-term goal of greenhouse gas neutrality by 2050…[169]

c) The French Climate and Resilience Law

In accordance with the Paris Agreement adopted on 12 December 2015 and ratified on 5 October 2016, and within the framework of the Green Pact for Europe, the State recalls its commitment to meet the greenhouse gas emission reduction targets, as they will result, inter alia, from the forthcoming revision of Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 concerning binding annual reductions in greenhouse-gas emissions by Member States from 2021 to 2030 contributing to climate action, in order to comply with the commitments made under the Paris agreement and amending Regulation(EU) No. 525/2013…[170]

[169] "Federal Climate Protection Act and to Change Further Regulations ("Bundesklimaschutzgesetz" or "KSG") - Climate Change Laws of the World" (Federal Climate Protection Act and to change further regulations ("Bundesklimaschutzgesetz" or "KSG") - Climate Change Laws of the World) <https://climate-laws.org/document/federal-climate-protection-act-and-to-change-further-regulations-bundesklimaschutzgesetz-or-ksg_c1c2> accessed 18 July 2023.

[170] "Law No 2021-1104 on the Fight against Climate Change and the Reinforcement of Resilience in the Face of Its Effects - Climate Change Laws of the World" (Law No 2021-1104 on the fight against climate change and the reinforcement of resilience in the face of its effects - Climate Change Laws of the World) <https://climate-laws.org/documents/law-no-2021-1104-on-the-fight-against-climate-change-and-the-reinforcement-of-resilience-in-the-face-of-its-effects_5af0> accessed 18 July 2023.

VI. CASE LAW

1. Pavlov and others v. Russia

The present application concerns the alleged failure by the public authorities to take timely and effective action to protect the applicants' right under Article 8 from the alleged third-party breaches and to remedy them (Moreno Gómez v. Spain, no. 4143/02, § 57, ECHR 2004-X). The Court observes from the official reports that industrial air pollution was named as the main contributing factor to the overall environmental deterioration in Lipetsk. The authorities issued operating permits to the industrial undertakings in the city, regulated their activities, conducted environmental assessments and carried out inspections. The environmental situation complained of was not the result of a sudden and unexpected turn of events, but was, on the contrary, long-standing and well known and the domestic authorities were aware of the continuing environmental problems and applied certain sanctions in order to improve them (see, for similar reasoning, Fadeyeva, cited above, § 90). The Court therefore concludes that the authorities in the present case were in a position to evaluate the pollution hazards and take adequate measures to prevent or reduce them. The combination of these factors shows a sufficient link between the pollutant emissions and the State to raise an issue of the State's positive obligation under Article 8 of the Convention (see Hatton and Others, cited above, § 98, and Fadeyeva, cited above, § 92). Accordingly, the applicants' complaint should be examined from the standpoint of the State's duty to take reasonable and appropriate measures to secure their rights under Article 8 § 1 of the Convention (see Fadeyeva, cited above, § 89).

. It remains to be determined whether the State, in securing the applicants' rights, has struck, within its margin of appreciation, a fair balance between the competing interests of the applicants and the community as a whole, as required by paragraph 2 of Article 8 of the Convention.

The Court notes that one part of the applicants' complaint about the failure of the authorities to regulate the operations of the NLSP and other industrial undertakings was that sanitary protection zones had not been established around the main plants and factories operating in Lipetsk.

The Court further notes that the creation of sanitary protection zones within which pollution may officially exceed safe levels is required under Russian law and that their main purpose is to separate residential areas from sources of pollution. In the absence of an established sanitary

protection zone, the industrial undertaking must be closed down or significantly restructured (see Fadeyeva, cited above, §§ 116-17).

It appears from the judgment of the District Court of 19 January 2009 that at the time when it was adopted, fifty out of sixty-nine undertakings in Lipetsk developed project documentation on the creation of sanitary protection zones and that forty-two of those projects were approved (see paragraph 10 above). Furthermore, it appears from the Government's submissions that in 1999 the municipal authorities formed a working group to oversee the undertakings' progress in creating sanitary protection zones and that that group was disbanded fourteen years later, in 2013, when all the major industrial undertakings had developed projects to create sanitary protection zones (see paragraph 31 above). Thus, for example, Lipetskcement and Lipetsk Quarry Management Company had their projects approved in 2009, the NLSP in 2015 and Svobodniy Sokol Pipe Company in 2019 (see paragraph 30 above). The 2019 and 2020 State reports stated that the Lipetsk CPA continued to supervise the creation of the sanitary protection zones (see paragraph 48 above). It is not however clear from the Government's submissions whether at the time the sanitary protection zones were in fact defined or whether they were still a "work in progress", subject to approval by State regulatory bodies (see paragraph 30 above). No additional information was submitted to the Court on this matter.

The Court is mindful of the fact that the creation of a sanitary protection zone is a long process that, like any complex multi-sectoral project, requires financial, logistical, technical resources and dutiful cooperation and efforts of the parties involved in it, including the State authorities. In the present case, it appears that it took the undertakings in Lipetsk a considerable period of time and administrative efforts to develop project documentation and have it approved. Even then, in the Court's view, such delays would not be possible without some inertia on the part of the authorities and their lenience in enforcing the regulations pertaining to the creation of sanitary protection zones. For example, even though the NLSP was named as one the main pollutants of the atmospheric air in Lipetsk in the early 2000s and has had that status for years, including to the present day (see paragraphs 17 and 26 above), its final project documentation for the creation of a sanitary protection zone was only developed in 2015 and submitted for the approval of the Russian CPA in 2019; no cogent reason was submitted to the Court for this delay. The Court also notes that none of the undertakings in question (except the Svobodny Sokol plant) were ordered to

suspend their operations or close for a violation of the relevant environmental regulations or failure to create a sanitary protection zone, as required by domestic law (see paragraph 80 above).

The Court notes that the uninterrupted operation of the NLSP and other industrial undertakings was important for the regional and national economy and aimed at achieving a fair balance between the competing interests of the applicants and the community, having regard to the consequences of a severe economic crisis the respondent State had to cope with during the relevant time. Furthermore, the Court reiterates that even where, as in the present case and unlike in cases of direct interference by the State, the domestic authorities did not comply with some aspect of the domestic legal regime, domestic legality is one but not the principal factor to be taken into account in assessing whether the State has fulfilled its positive duty, and the Court has held that the State can choose other means they see as appropriate to ensure "respect for private life" (see Fadeyeva, cited above, §§ 96-98).

In respect of the latter, the Court notes that little environmental protection and control measures in respect of the NLSP's operations, in particular, were taken by the national (federal) authorities in 2000-2005 (see paragraphs 10 and 22 above). By contrast, the judgment of the District Court of 19 January 2009, the Government's relevant observations and the regional reports demonstrate that, from approximately 2004-2005, the municipal authorities were taking measures, in accordance with the relevant legislation, to reduce air pollution in Lipetsk. Those included planned or unannounced assessments, fines, warnings, notices of violations and administrative or disciplinary proceedings (see paragraphs 11, 39 and 40 above). The Court observes that while the District Court recognised that air pollution in all of Lipetsk was high, it listed the comprehensive measures taken by the authorities to tackle it, concluding that the latter had not failed in their obligation to protect the environment (see paragraph 11 above).

At the same time the Court observes that the domestic court limited itself to merely establishing that the measures were taken by the authorities, without addressing a central issue in the proceedings of whether those measures were in fact effective and capable of remedying the adverse consequences of industrial pollution for the applicants, in the light of the State environmental reports. For example, it omitted to determine whether the pollution had reduced or was projected to reduce as a result of those measures and whether they were indeed sufficient to prevent further

degradation of air quality and to reduce health risks linked to industrial pollution that the applicants, as residents of Lipetsk, were reportedly exposed to. The Court considers that some of the points in this line of inquiry of the domestic court could have been (i) whether, as a result of different inspections or administrative proceedings, the polluting undertakings introduced improvements of their equipment or to their technological processes; (ii) why the permitted emissions levels were not observed by them; and (iii) whether the funding allocated by the authorities for the protection of the environment or the fines imposed on the polluting undertakings were proportionate to the environmental damage that was inflicted. It does not appear from the text of the domestic court's judgment that the applicants' interest in living in a safe environment was duly taken into consideration and that it had been fairly balanced against the general economic interest of the region.

The Court reiterates that it is mindful of its subsidiary role in deciding what is necessary for achieving one of the aims mentioned in Article 8 § 2 of the Convention (see paragraph 76 above), however in the present case, for reasons stated in paragraph 85 above, it appears that it cannot benefit from a prior assessment by the national courts of the balancing of the competing interests at stake and therefore will proceed to such an assessment on its own, taking account of the information available to the domestic court at the material time and all subsequent developments.

The Court observes that the data concerning air pollution (see paragraphs 15-23 above and Appendix IV, Table 1) show that before 2009 (when the applicants' case was examined by the District Court) and at least before 2014 (when the level of air pollution was classified as "low" for the first time in many years (see Appendix IV, Table 1)), the measures taken by the authorities did not have a significant effect on the reduction of industrial emissions or concentrations of harmful substances in the atmospheric air of Lipetsk, or other types of pollution. For example, it was noted in the 2007 environmental report that NLSP had been responsible for 88% of the city's total emissions, it had not complied with licensing requirements concerning the quality of its operational wastewater and had not established limits on its emissions in 2000-2005 (see paragraph 22 above). The report further stated that polluted drinking water was the main health risk factor in 2005 and that residents of Lipetsk consumed drinking water polluted with chemicals or heavy metals many times their safe limits (ibid). Furthermore, the 2011 regional environmental report identified the continuing use of outdated dust and gas purification equipment by the

industrial undertakings as one of the main reasons for the excessive harmful emissions generated by them (see paragraph 24 above). It further stated that the presence of several harmful substances exceeding the permissible levels in the air increased the risks of developing or aggravating respiratory, cardiovascular kidney and liver diseases of residents of Lipetsk and benzopyrene (the excessive concentrations of which were consistently detected in the air of Lipetsk in 2009-2013 (see Appendix IV, Table 4)) had been found to have cancerogenic effect. The Court also notes that the fines imposed on the polluting undertakings with the aim of inducing their management to take the relevant remedial or protective measures appear to have been rather small in the light of the levels of pollution reported, and it cannot be said that they had any punitive and/or expected effect on the polluters (see paragraph 11 above). At the same time, more severe sanctions, such as the closure or suspension of operations, were not routinely imposed, as indicated above. The Court considers that all these factors, seen against the background of data on high levels of air pollution in 1999-2013, are indicative of insufficiency of the measures taken by the authorities during that period in so far as they aimed at ensuring the private industry compliance with the relevant environmental standards and addressing poor environmental conditions to which the applicants were exposed.

Although the exact date would be difficult to define in view of the scope of the problem and the range of measures taken, the Court does not overlook the significant fact that from 2014 onwards the average annual concentrations of the main four of about forty toxic pollutants in Lipetsk (dust, nitrogen dioxide, phenol and formaldehyde) did not exceed the applicable average daily MPL in 2015-2018 (see Appendix III, Table 4) and the average annual concentrations of dust, carbon monoxide, nitrogen dioxide, phenol, formaldehyde, sulphur dioxide and nitric oxide in the atmospheric air of Lipetsk were within the acceptable limits in 2020 (see paragraph 46 above). The average annual concentrations of benzopyrene, which was declared as a potential carcinogen in the 2011 official report, was consistently below the MPL from 2014 onwards (see Appendix IV, Table 4). The Court notes that the MPL was increased by the regulatory bodies in 2017 and 2021 for nitrogen dioxide and in 2017 for phenol and formaldehyde and reduced for dust at the same time (see Appendix II). The Court also takes notes of the information that residents of Lipetsk at present are provided with drinking water of satisfactory quality (see paragraph 37 above).

The Court also notes that after 2017 federal environmental protection programmes were adopted and implemented in conjunction with regional programmes. Thus, the Court notes with satisfaction that within the framework of Clean Air project, the NLSP, Lipetskcement and the Lipetsk thermal power station upgraded some of their essential equipment, and each carried out other technical improvements on their premises (see paragraphs 32 and 48 above). Furthermore, subsidies were allocated for the purchase of purification equipment by five asphalt plants (see paragraph 35 above). Some of the other industrial undertakings also carried out improvements of their equipment and introduced reusable energy schemes (see paragraph 25 above). Those specific remedial measures either already made it possible to bring harmful emissions to lower levels or were predicted to contribute to their continuing reduction (see paragraphs 32 and 39 above). The air monitoring system in Lipetsk and its region was upgraded to ensure more accurate and complete measurements of emissions (see paragraph 35 above). Furthermore, a dedicated working group was created in 2017 at regional level to address transport-generated emissions; clean and energy-efficient public buses were bought, and the construction of appropriate infrastructure was planned to ensure their use (see paragraph 36 above). In addition, clean-up work on the watershed adjacent to the NLSP's waste outlet took place, and the construction of additional water treatment facilities began (see paragraph 35 above); essential interventions were made by the regional authorities in respect of urban, industrial and hazardous waste (see paragraphs 25, 34 and 38 above). Lastly, the Court finds it significant that there has been a substantial increase in the funds allocated by the State for the support of environmental programmes in Lipetsk from about the equivalent of an average of EUR 4 million a year in 2002-2018 to about an average of EUR 37 million a year in 2018-2024, which should, without a doubt, reinforce the implementation of respective the relevant measures and promote further effective management of air quality and the environmental situation in Lipetsk (see paragraphs 11 and 35 (2002-2018 funding) and 32 (2018-2024 funding) above).

The Court reiterates that it is not its task to determine what precise practical steps should have been taken in the present situation to reduce pollution in a more efficient way. However, it is within its jurisdiction to assess whether the State approached the problem with due diligence and gave consideration to all the competing interests (see Fadeyeva, cited above, § 128). In view of all the above factors and in the light of the information on dynamics of the air pollution in 1999-2013

and 2014-2021, the Court considers that the measures taken jointly in Lipetsk in 2014 and onwards by the federal and regional authorities and the private industrial sector under the State monitoring have established and promoted a gradual shift to lower concentrations of harmful emissions in the atmospheric air and a reduction in water and soil pollution (see paragraphs 32 (v) - 37 above).

The Court accordingly finds that the entirety of the material submitted by the parties and examined by the Court allows it to conclude that, at least between 5 May 1998 and the end of 2013, the authorities did not diligently address the unfavourable environmental situation in Lipetsk and thus failed in their positive obligation to protect the applicants' right to respect for private life, safeguarded by Article 8 of the Convention, during that period.

The Court is prepared to accept that the measures and policies implemented by the respondent State after 2013, have been more targeted (especially from 2018) and have led to tangible progress in recent years in reducing the levels of industrial emissions and improving the air quality and environmental conditions in Lipetsk. That being so, the Court is nevertheless mindful of the environmental pollution that remains to be addressed, such as, for example, the short-term peak concentrations of toxic substances exceeding the MPL (see Appendix III, Table 4 and Appendix IV, Tables 2 and 3). Furthermore, the 2019 State report shows, inter alia, that (i) Lipetsk was among three most polluted parts of the region, (ii) air pollution was identified as the leading health risk factor for residents and (iii) there was a decline in the quality of air in Lipetsk in recent years (see paragraph 26 above). In the light of this information, the Court considers that despite improvements identified above, the industrial air pollution in Lipetsk has not been sufficiently curbed, so as to prevent that the residents of the city be exposed to related health risks. The domestic authorities therefore failed to strike a fair balance in carrying out their positive obligations to secure the applicants' right to respect for their private life.

. The Court accordingly finds that there has been a violation Article 8 of the Convention in respect of all applicants.[171]

[171] ECHR, "HUDOC - European Court of Human Rights" (HUDOC - European Court of Human Rights) <https://hudoc.echr.coe.int/fre?i=001-219640> accessed 18 July 2023.

VII. CONCLUSION

Since the industrial revolution, humanity has faced a myriad of new challenges. The most existential of these issues is man-made climate change, a direct product of the industrial revolution, at least according to the general consensus among the scientists. According to them, it needs to be resolved as soon as possible, or human civilization might be on the brink of collapse. With the growing global economy and CO2 emissions, the climate change problem seems to be only going in an exacerbated direction. So far, only a very few rich countries have managed to decouple growth from carbon emissions, albeit with very limited success. That is why many citizens around the globe feel betrayed by their governments for not doing enough. As citizens feel more disconnected from their respective states, they are seeking alternative legal methods to force the government to act via legal means and obligations. For example, in the case of Duarte Agostinho and Others v. Portugal and 32 Other States, applicants filed a lawsuit in the ECHR against Portugal and the other 32 states, alleging that states are not doing enough to stop climate change and mitigate its effects. Moreover, applicants claim that states violated some of their fundamental human rights enshrined under the European Convention on Human Rights.

In this case, we will examine whether a connection can be made between climate change and the aforementioned articles of the European Convention on Human Rights. As climate change becomes more prevalent in the upcoming years, it will be pragmatic to expect many more lawsuits brought by citizens against governments around the globe.

VIII. BIBLIOGRAPHY

1. Books

- Marco Sutto, 'Human Rights Evolution, a Brief History.' 18.
- Md. Kamruzzaman, Shashi Kanto Das. The Evaluation of Human Rights: An Overview in Historical Perspective. American Journal of Service Science and Management. Vol. 3, No. 2, 2016, pp. 5-12.
- Wildhaber, Luzius. "The European Court of Human Rights: The Past, The Present, The Future." American University International Law Review 22, no. 4 (2007): 521-538.
- Warman, H. R. "The Future of Oil." The Geographical Journal, vol. 138, no. 3, 1972, pp. 287–97. JSTOR, https://doi.org/10.2307/1795436. Accessed 15 July 2023.

2. Articles

- Richard Bilder, 'An Overview of International Human Rights Law' (2004) 4 University of Wisconsin Law School 4.
- Patrick Pasture, 'The Invention of European Human Rights' [2018] Catholic University of Leuven/KU Leuven 20.
- Aka, Philip C. and Browne, Gloria J. (1999) "EDUCATION, HUMAN RIGHTS, AND THE POST-COLD WAR ERA," NYLS Journal of Human Rights: Vol. 15 : Iss. 3 , Article 2.
- Karina Weller, 'A Brief History of the European Court of Human Rights' (each other, 2016) <https://eachother.org.uk/brief-history-european-court-human-rights/> accessed 23 November 2022.

- John Merrils, 'European Court of Human Rights' (Britannica, 2017) <https://www.britannica.com/topic/European-Court-of-Human-Rights> accessed 23 November 2022.
- Egbert Myjert, 'The European Court of Human Rights General Information, Misconceptions and Venomous Remarks' (ECHR, 2007) <https://www.rechtspraak.nl/SiteCollectionDocuments/European-court-of-human-rights.pdf> accessed 23 November 2022.
- Carsai Daniel, 'The Friendly Settlement Procedure as a New Practice of the European Court of Human Rights' (2019) <https://drkarsai.hu/en/friendly-settlement-procedure/> accessed 23 November 2022.
- WU X.F and Chen G.Q, 'Coal Use Embodied in Globalized World Economy: From Source to Sink through Supply Chain' (2018) Volume 81, Part 1, Economics School, Zhongnan University of Economics and Law, Wuhan 430073, PR China 978.
- C Kopp Otto, 'Coal' (Britannica, 3 July 2023) <https://www.britannica.com/science/coal-fossil-fuel> accessed 10 July 2023.
- Riva, Joseph P. , Carruthers, John E. , Waddams, A.L. , Atwater, Gordon I. and Solomon, Lee H.. "natural gas". Encyclopedia Britannica, 30 Jun. 2023, https://www.britannica.com/science/natural-gas. Accessed 10 July 2023.
- Economides Michael J and Wood David A, 'The State of Natural Gas' (2009) 1 Cullen College of Engineering, University of Houston, 11611 Habersham Ln., Houston, TX 77024, USA 1.
- Sorrell Steve and others, 'Global Oil Depletion: A Review of the Evidence', (2010) 38 5290
- Stephanie Osmanski, "How Do Carbon Emissions Affect the Environment?" (Green Matters, March 30, 2020) <https://www.greenmatters.com/p/how-do-carbon-emissions-affect-environment>.

- Marcia Assuncao, "Direct and Indirect Emissions: Mapping of SCOPES 1, 2 and 3 According to the GHG Protocol" (Global Climate Initiatives, April 16, 2022) <https://globalclimateinitiatives.com/en/e-brochures-knowledge/direct-and-indirect-emissions/>.
- Rosamund Pearce, "Analysis: Why Scientists Think 100% of Global Warming Is Due to Humans - Carbon Brief" (Carbon Brief, December 13, 2017) <https://www.carbonbrief.org/analysis-why-scientists-think-100-of-global-warming-is-due-to-humans/>.
- Robin Bayes and James N Druckman, "Motivated Reasoning and Climate Change" (2021) 42 Current Opinion in Behavioral Sciences 27 <http://dx.doi.org/10.1016/j.cobeha.2021.02.009>.
- Ghazali D and others, "Climate Change Impacts on Disaster and Emergency Medicine Focusing on Mitigation Disruptive Effects: An International Perspective" (2018) 15 International Journal of Environmental Research and Public Health 1379 http://dx.doi.org/10.3390/ijerph15071379
- "Can We Have Economic Growth and Tackle Climate Change at the Same Time? - Grantham Research Institute on Climate Change and the Environment" (Grantham Research Institute on climate change and the environment) <https://www.lse.ac.uk/granthaminstitute/explainers/can-we-have-economic-growth-and-tackle-climate-change-at-the-same-time/>.
- Tim Rayner and Andrew Jordan, "Climate Change Policy in the European Union" [2016] Oxford Research Encyclopedia of Climate Science <http://dx.doi.org/10.1093/acrefore/9780190228620.013.47>.
- Javier Cifuentes-Faura, 'European Union Policies and Their Role in Combating Climate Change over the Years' (2022) 15 Air Quality, Atmosphere & Health 1333.

3. Websites and Blogs

- OHCHR, 'What Are Human Rights?' (2 November 2022) <https://www.ohchr.org/en/what-are-human-rights> accessed 2 November 2022.
- UNICEF, 'Human Rights' (UNICEF, 2015) <https://www.unicef.org/child-rights-convention/what-are-human-rights> accessed 2 November 2022.
- Council of Europe, 'The Evolution of Human Rights' (2017) <https://www.coe.int/en/web/compass/the-evolution-of-human-rights> accessed 10 November 2022.
- Council of Europe, 'About the Council of Europe' (2011) <https://www.coe.int/en/web/yerevan/the-coe/about-coe#:~:text=Founded%20in%201949%2C%20the%20Council,action%20throughout%20the%20whole%20continent> accessed 10 November 2022.
- Council of Europe, 'Council' (2014) <https://www.coe.int/en/web/tirana/european-court-of-human-rights> accessed 23 November 2022.
- 'ECHR' (International Justice Resource Center, 2015) <https://ijrcenter.org/european-court-of-human-rights/> accessed 23 November 2022.
- ECHR, 'Election of Judges to the European Court of Human Rights' (2018) <https://website-pace.net/en_GB/web/as-cdh/main> accessed 23 November 2022.
- ECHR' (International Justice Resource Center, 2015) <https://ijrcenter.org/european-court-of-human-rights/> accessed 23 November 2022
- Council of Europe, 'Questions and Answers about ECHR' (2015) <watch europa, 'European Court of Human Rights' (2015) <https://www.europewatchdog.info/en/court/> accessed 23 November 2022.> accessed 23 November 2022.
- 'EUROPEAN COURT OF HUMAN RIGHTS TO IMPLEMENT ADVISORY JURISDICTION' (International Justice Resource Center, 2018)

<https://ijrcenter.org/2018/04/24/european-court-of-human-rights-to-implement-advisory-jurisdiction/> accessed 23 November 2022.

- Energy Department, 'Fossil Fuels' (Fossil) <https://www.energy.gov/fossil> accessed 10 July 2023.
- National Geographic Scoeity, 'Fossil Fuels' (National Geographic, 16 June 2023) <https://education.nationalgeographic.org/resource/fossil-fuels/> accessed 10 July 2023.
- EIA, 'Coal Types' (EIA coals, 19 October 2022) <https://www.eia.gov/energyexplained/coal/> accessed 10 July 2023.
- EIA, 'Natural Gas Explained' (EIA Natural Gas, 27 December 2022) <https://www.eia.gov/energyexplained/natural-gas/> accessed 10 July 2023.
- Alternative Fuels Data Center, 'Natural Gas Fuel Basics' <https://afdc.energy.gov/fuels/natural_gas_basics.html> accessed 10 July 2023.
- University of Calgary, 'Energy Education' (Energy Educatiom) <https://energyeducation.ca/encyclopedia/Oil> accessed 14 July 2023.
- UN, 'What Is Renewable Energy?' <https://www.un.org/en/climatechange/what-is-renewable-energy> accessed 14 July 2023.
- Renewable Energy: The Clean Facts" (Renewable Energy Definition - Sources, Clean Alternatives, June 1, 2022) https://www.nrdc.org/stories/renewable-energy-clean-facts#sec-whatis
- Glossary: Carbon Dioxide Emissions - Statistics Explained" (Glossary:Carbon dioxide emissions - Statistics Explained) <https://ec.europa.eu/eurostat/statistics-explained/index.php?
- "Global Carbon Emissions" (Global Carbon Emissions) <https://education.nationalgeographic.org/resource/global-co2-emissions>.
- "What Are Scopes 1, 2 and 3 of Carbon Emissions?" (Plan A Academy) https://plana.earth/academy/what-are-scope-1-2-3-emissions
- "Complete Guide to Understanding Scope 1, 2, and 3 Emissions | ClimatePartner" (ClimatePartner) https://www.climatepartner.com/en/scope-1-2-3-complete-guide

- United Nations, 'What Is Climate Change?' <https://www.un.org/en/climatechange/what-is-climate-change> accessed 15 July 2023.
- "What Is Climate Change? A Really Simple Guide" (BBC News) <https://www.bbc.com/news/science-environment-24021772>.
- What Is Climate Change?" (NASA) <http://www.nasa.gov/audience/forstudents/k-4/stories/nasa-knows/what-is-climate-change-k4.html>.
- "Causes of Climate Change | US EPA" (US EPA, April 15, 2021) https://www.epa.gov/climatechange-science/causes-climate-change
- "What Is the Evidence for Human-Caused Climate Change?" (Caltech Science Exchange) <http://scienceexchange.caltech.edu/topics/sustainability/evidence-climate-change>.
- "How Earth's Climate Changes Naturally (and Why Things Are Different Now)" (Quanta Magazine, July 21, 2020) <https://www.quantamagazine.org/how-earths-climate-changes-naturally-and-why-things-are-different-now-20200"How Earth's Climate Changes Naturally (and Why Things Are Different Now)" (Quanta Magazine, July 21,
- <https://www.quantamagazine.org/how-earths-climate-changes-naturally-and-why-things-are-different-now-20200721/>.721/>.
- What Is Climate Change?" (What Is Climate Change?, September 1, 2021) <https://www.nrdc.org/stories/what-climate-change>.
- "A Brief History of Climate Change Discoveries" (A brief history of climate change discoveries) http://www.discover.ukri.org/a-brief-history-of-climate-change-discoveries/
- "Climate Change History" (HISTORY) <https://www.history.com/topics/natural-disasters-and-environment/history-of-climate-change>.
- UN, 'The Climate Crisis – A Race We Can Win' <https://www.un.org/en/un75/climate-crisis-race-we-can-win#:~:text=Rising%20temperatures%20are%20fueling%20environmental,disruption%2C%20conflict%2C%20and%20terrorism> accessed 15 July 2023.

- UNEP, "Facts about the Climate Emergency" (UNEP - UN Environment Programme) <http://www.unep.org/facts-about-climate-emergency>.
- "The Truth about Climate Action versus Economic Growth | Brookings" (Brookings, April 4, 2023) <https://www.brookings.edu/articles/the-truth-about-climate-action-versus-economic-growth/>.
- 'Climate Change: What the EU Is Doing' (07.02.02023) <https://www.consilium.europa.eu/en/policies/climate-change/#:~:text=Under%20the%20European%20climate%20law,climate%2Dneutral%20EU%20by%202050> accessed 15 July 2023.
- "Portugal – Climate Performance Ranking 2023 | Climate Change Performance Index" (Climate Change Performance Index | The Climate Change Performance Index (CCPI) is a scoring system designed to enhance transparency in international climate politics., November 14, 2022) <https://ccpi.org/country/prt/>.
- "Home" (Portugal | Integrating Environmental and Climate Action into Development Co-operation : Reporting on DAC Members' High-Level Meeting Commitments | OECD iLibrary, January 1, 1887) https://www.oecd-ilibrary.org/sites/d0f27d0f-en/index.html?itemId=/content/component/d0f27d0f-en
- "Duarte Agostinho and Others v. Portugal and 32 Other States - Climate Change Litigation" (Climate Change Litigation) <http://climatecasechart.com/non-us-case/youth-for-climate-justice-v-austria-et-al/>.
- "Article 2: Right to Life | Equality and Human Rights Commission" (Article 2: Right to life | Equality and Human Rights Commission) <https://www.equalityhumanrights.com/en/human-rights-act/article-2-right-life>.
- Article 8: Respect for Your Private and Family Life | Equality and Human Rights Commission" (Article 8: Respect for your private and family life | Equality and Human Rights Commission)
- "Article 14: Protection from Discrimination | Equality and Human Rights Commission" (Article 14: Protection from discrimination | Equality and Human Rights Commission)

4. Cases, Codes, and Rules

- "HUDOC - European Court of Human Rights" (HUDOC - European Court of Human Rights) <https://hudoc.echr.coe.int/fre?i=001-206535>.
- "European Convention on Human Rights - ECHR Official Texts - ECHR - ECHR / CEDH" (European Convention on Human Rights - ECHR Official Texts - ECHR - ECHR / CEDH) <https://www.echr.coe.int/european-convention-on-human-rights>.
- "Universal Declaration of Human Rights" (OHCHR) https://www.ohchr.org/en/universal-declaration-of-human-rights
- "UN Convention On The Rights Of The Child | Save the Children UK" (UN Convention On The Rights Of The Child | Save the Children UK) <https://www.savethechildren.org.uk/what-we-do/childrens-rights/united-nations-convention-of-the-rights-of-the-child>.
- "Cultural Rights" (Cultural Rights) <https://culturalrights.net/en/documentos.php?c=18&p=195#:~:text=The%20Rio%20Declaration%20states%20that,and%20key%20sectors%20of%20societies.>.
- Https://Unfccc.Int/Process-and-Meetings/the-Paris-Agreement" <https://unfccc.int/process-and-meetings/the-paris-agreement>.
- "European Climate Law" (Climate Action) <https://climate.ec.europa.eu/eu-action/european-green-deal/european-climate-law_en>.
- "EU Charter of Fundamental Rights" (European Commission) <https://commission.europa.eu/aid-development-cooperation-fundamental-rights/your-rights-eu/eu-charter-fundamental-rights_en>.
- Framework Climate Law No 98/2021 - Climate Change Laws of the World" (Framework climate law no 98/2021 - Climate Change Laws of the World) <https://climate-laws.org/document/framework-climate-law-no-98-2021_2801>.
- "Federal Climate Protection Act and to Change Further Regulations ("Bundesklimaschutzgesetz" or "KSG") - Climate Change Laws of the World" (Federal Climate Protection Act and to change further regulations

("Bundesklimaschutzgesetz" or "KSG") - Climate Change Laws of the World) <https://climate-laws.org/document/federal-climate-protection-act-and-to-change-further-regulations-bundesklimaschutzgesetz-or-ksg_c1c2>.

- Law No 2021-1104 on the Fight against Climate Change and the Reinforcement of Resilience in the Face of Its Effects - Climate Change Laws of the World" (Law No 2021-1104 on the fight against climate change and the reinforcement of resilience in the face of its effects - Climate Change Laws of the World) <https://climate-laws.org/documents/law-no-2021-1104-on-the-fight-against-climate-change-and-the-reinforcement-of-resilience-in-the-face-of-its-effects_5af0>.
- ECHR, "HUDOC - European Court of Human Rights" (HUDOC - European Court of Human Rights) <https://hudoc.echr.coe.int/fre?i=001-219640>.