Migration Letters

Volume: 20, No: S4(2023), pp. 758-777

ISSN: 1741-8984 (Print) ISSN: 1741-8992 (Online)
www.migrationletters.com

The Conceptual Framework of Renewable Energy and its Relationship to the Branches of International Law (Legal Analytical Study)

Ayat Moayad Nasser[1], Dr. Mahmoud Khalil Jaafar[2]

Abstract

This study aims to provide an analysis of the relationship between renewable energy and the branches of international law (humanitarian, private, and common), in addition to revealing the extent to which renewable energy can achieve sustainable development under international law, in addition to identifying the most important legal frameworks in accordance with international law.

The organization of the work of renewable energy in achieving sustainable development The researchers used the descriptive analytical approach based on the intended goal of the study in shedding light on renewable energy and its nature, types and characteristics within the framework of international law.

The researchers concluded through the study that renewable energy is the only way at the present time to achieve sustainable development in all societies at a time when traditional energy is threatened with depletion for a number of societies emerging from armed conflict, in addition to that renewable energy Sources are a successful alternative to non-renewable energy sources. In addition, it is more healthy in terms of waste and pollution.

Keywords: *Renewable Energy, Sustainable Development, International Energy Law, Climate Change.*

Introduction

Research into renewable energy has a wide scope because it has become, at the present time, the most important specialization in confronting the international challenges represented by the climate crisis, scarcity of resources, and natural disasters. By defining international energy law as a branch of international law that aims to organize and regulate all its manifestations, international energy activity and trade, given the complexity. Its wide diversity covers areas and aspects of public international law and private international law, as well as international economic, commercial, administrative and financial law, or the law of international organizations. Despite what is said, energy law does not involve academic references like other branches of law, although it actually existed in the ninth century. In the tenth and early twentieth century, however, legislation related to alternative and renewable energies began. Today, energy law plays an essential role in the decision-making process within society as a result of its connection to the economy. According to the above, we discuss the integration of the relationship between renewable energy and the branches of international law.After clarifying its concept and general characteristics as one of the most important tools for sustainable development.

[1] College of Law, International Law Branch, University of Baghdad, Iraq, ayat59573@gmail.com
[2] College of Law, International Law Branch, University of Baghdad, Iraq, Dr.mahmood@colaw.uobaghdad.edu.iq

First: The problem of the study:

In light of international concern about the depletion of traditional energy sources (non-renewable) and the destruction, sabotage and depletion of traditional energy sources that the energy sector in fragile and less developed societies has been exposed to, these sources are no longer able to meet the demand for energy and meet the requirements of reconstruction, as there has become a gap. Between the production and consumption of energy capable of achieving the requirements of sustainable development.

Accordingly, the problem of the study becomes clear by answering the main question: "What is the condition of renewable energy in international law? What are its most prominent characteristics and types?" The following questions branch out from it:

1. What is renewable energy and its characteristics?

2. What are the most prominent types of renewable energy?

3. What is the relationship between renewable energy and the branches of international law (humanitarian, private, common)?

4. To what extent is it possible to achieve environmental justice under international law and how will renewable energy contribute to this?

5. What are the most important legal frameworks (according to international law) for renewable energy work to achieve joint international investment in the field of renewable energy?

Second: The importance of the study: The importance of each study in human research is determined by the importance of the phenomenon studied, its seriousness, and the time around which questions were raised by members of society. The importance of our study is determined by:

The importance of the current study was determined. It is important to achieve sustainable development, especially in less developed societies that have faced armed conflicts that have destroyed their ecosystems. Achieving international peace and security in any society must

To be closely linked to sustainable development; Because it guarantees the effective and sustainable participation of the citizen in all areas and aspects of life, and human development is the foundation on which all civil, political, economic, social and cultural rights are based, and in the absence of peace, security and stability, it is impossible to continue in the areas of sustainable development.

Third: Objectives of the study: The study was defined by a set of objectives, which are as follows:

1. Identify the nature of renewable energy and its characteristics.

2. Disclosure of the most prominent types of renewable energy.

3. Identify the relationship between renewable energy and the branches of international law (humanitarian, private, human rights and international law of common heritage).

4. Identify the most important legal frameworks (according to international law) regulating the work of renewable energy and clarify its types.

Fourth: Study methodology The descriptive analytical method was used based on the desired goal of this study to shed light on renewable energy, its nature, types and characteristics within the framework of international humanitarian law.

In this context, the study is divided into two main parts. The first section of this study deals with the nature of renewable energy, its characteristics and types within the framework of international law, and the second section discusses The relationship of international law to the basic concepts of renewable energy.

The first topic

What is renewable energy, its characteristics and types The First Topic

What are Renewable Energy, its Characteristics and Types?

The emergence of concepts related to renewable energy at the international and regional level has been linked to multiple international and national challenges represented by global warming, climate change and other means related to energy security and energy poverty, in addition to identifying legal systems that promote the use of this energy to achieve sustainable development goals, taking into account the preservation of natural resources and ensuring the right of countries to Sovereignty over its resources within its territory, taking into account commitment to international agreements regulating shared resources, which requires clear intervention from international law, whether at the level of regulation or justice in the transition to renewable energies as part of sustainable development, in addition to identifying transport and investment mechanisms and financing opportunities, especially for To developing countries through detection and awareness of the harms of fossil fuels and the importance of maintaining environmental balance in the long term for future generations. This led to the emergence of what is called the International Energy Law.It is concerned with regulating important and multiple issues within the sustainable development goals that relate directly and indirectly to food security and climate action, in addition to their direct connection to the most important international issues related to human life, such as transport, industry and the global economy in general, as the international instruments concerned with renewable energies form integrated relationships with the branches of international law, especially International humanitarian law, which requires us to discuss the basic concepts of renewable energy and sustainable transformation Sustainable.

The first requirement

The concept of renewable energy The first requirement

The Concept of Renewable Energy

Energy is defined by its scientific term (Energy) as not a substance, but rather an inherent characteristic of matter that makes it capable of transforming and changing from its original state into a physical quantity that appears in the form of heat or in the form of mechanical movement, such as the energy binding the atomic nuclei between the proton and the neutron (Abdul Kafi,2007, s112),Energy is classified in terms of its sustainability into two types: traditional and renewable energy, and in terms of its compatibility with the environment with unclean energy and clean energy. In general, the concept of energy is developed and broad in scope, and there are many legal and economic definitions of various types, whether at the local, national or international level.

First: Defining renewable energy at the international level

Agencies concerned with the energy transition towards renewable energies and programs implementing the agendas of sustainable development goals have adopted different definitions of renewable energy by enumerating and explaining its sources because, according to the opinions of those interested in international affairs and legal specialists in the field of sustainable development, it will constitute the best future dependence on energy as it is environmentally friendly and has simple, available and inexhaustible primary sources. It was defined by the United Nations Environment Program (UNEP). It

is energy whose source does not have a fixed reserve in nature and changes periodically faster than the rate of its consumption and appears in five forms (biomass, sunlight, wind, hydroelectric energy and underground energy).While the International Renewable Energy Agency (IRENA) referred to its sources in a sustainable manner without a legal definition (bioenergy, geothermal energy, hydroelectric energy, ocean energy, solar and wind), the International Energy Agency (IEA) defined it as that which is composed of energy sources. Resulting from spontaneous natural paths, such as sunlight and wind, which are renewed by nature at a rate higher than the rate at which they are consumed. Renewable energy is a permanent, inexhaustible natural resource available in nature, whether specified or continuously produced. It is clean and does not result in pollution (Najm, Othman,2021, p. 14).

The Organization for Economic Co-operation and Development has defined renewable energies as energy acquired from natural processes that are constantly renewed, and therefore they are permanent and inexhaustible natural resources available in nature, whether limited or unlimited, but constantly renewable. The Organization of Arab Petroleum Exporting Countries indicated (OAPEC) general(2002)It is the energy that we obtain through energy streams that recur in nature automatically and periodically, and thus it is the opposite of non-renewable energies whose stock is often stagnant in the ground (Badroni, Huda,2020,s 130).

Second: Defining renewable energy at the national level

In the twenty-first century, there have been many ways to obtain energy. Foreign and Arab countries have developed appropriate legislation to integrate renewable energies with conventional, fossil, and alternative energies. At the level of foreign countries, which have initiated several legal systems to contain the concept of renewable energy and sustainable transformation, the US Energy Information Administration has defined energy Renewable is one of the energy resources whose flow is renewed in nature and is inexhaustible, but it may be limited, and includes renewable energy sources (biomass, water, sun, geothermal energy, wave movement and tides).((Ibrahim, Majeed, 2016,s343).

While the German legislator defined it in Renewable Energy Law No3385/15for a year2004In a way indicating its sources (wave energy, tidal energy, water current, wind energy, solar energy, geothermal energy, and biomass energy, including biogas, landfill gas, and sanitary combustion gas, as well as energy from the biologically decomposable part of household and factory waste.Also, the Japanese legislator pointed out in (2011) to the most important sources of renewable energy without clarifying an expanded definition (solar energy, wind energy, hydropower). As for the national legislator, renewable energy was defined through Environmental Protection and Improvement Law No. 27 of 2009, Article Two, Paragraph 19 (it is energy derived from natural resources. Which is renewable and not exhausted. Renewable energy includes the sun, wind, waves, and tidal movement, which differs from fossil fuels because their waste does not contain environmental pollutants.

Administrative matters concerned with renewable energy and related to external, regional or international relations may be organized by a department such as the Department of Relations and Investments concerned with the field of oil as an administrative division within the scope of local law (Al-Shamaa, Hoda, Hamza, Walid,2023)

The second requirement Characteristics of renewable energy The second requirement Renewable energy properties

The international community faces great challenges related to obtaining energy, whether these challenges are represented by increased energy consumption in various sectors such as industry, transportation, and other elements of development in developed countries, which in turn affects an increase in the phenomena of climate change and global warming, or energy poverty and lack of it in some developing countries and the least.

Development and renewable energy sources contribute to overcoming these issues through their distinct characteristics, which primarily represent:

First: Renewable energy is inexhaustible and available in all countries

In other words, it is constantly renewed because it is created by nature and is inexhaustible no matter how frequently it is used. It is renewed at a rate equal to or higher than the rate of its use, unlike fossil fuel sources whose sources may become depleted.(Badroni, Huda, p131), and its sources are supposed to remain for future generations for thousands of years and not hundreds of years, meaning that its supplies are unlimited. It should be noted that about 80% of the world's population lives in countries that import fossil fuels, meaning about 6 billion people depend on fossil fuels coming from other countries, which makes them vulnerable to geopolitical shocks and crises. On the other hand, renewable energy sources are available in All countries, and their potential has not been fully exploited yet, and the International Renewable Energy Agency believes that (90%) percent of the world's electricity can be generated from renewable energy by 2050, and in this sense it reflects the ability to get rid of dependence on external imports of non-renewable energy types. The most prominent of which is, for example, oil, which allows countries to diversify their economies and protect them from unexpected fluctuations in fossil fuel prices (Faisal, Saddam, p. 17).

Second: Renewable energy is economical and affordable

Renewable energy is considered primarily economic and does not constitute a major financial burden in supporting the basic energy-consuming sectors for the following reasons:Lucas Hermwille, p.6).

1. It is freely sourced (from nature) and does not require high technologies in its production from indirect sources such as solid waste.

2. It does not require high costs for transportation from generation stations to operation and consumption as it is national and with sources close to the consumption resulting mostly from the natural resources themselves.

3. Its stations for management, storage, and use are affordable, unlike fossil fuel stations and nuclear fuel stations, which require high security systems in their use and huge sums of money as compensation in the event of technical malfunctions or natural disasters.

4. Low maintenance costs. Renewable energy technology requires less total maintenance than traditional fossil fuel sources, because solar energy installations and wind turbines have almost no moving parts or have very few of them, and they do not depend on flammable sources for their operation, which reduces costs. They operate less. In addition, once the infrastructure needed to generate renewable energy is built, the need for maintenance becomes either non-existent or very minimal, which means that the owners of these facilities stand to reap huge benefits as they generate free electricity for people.

Third: Renewable energy is safe and meets health and safety requirements

Security and safety aspects are multi-dimensional and multi-dimensional, so renewable energy is considered a good way to obtain electrical energy or fuel in various situations without fear of security conditions, as follows:

-Ordinary circumstances They are considered effective and safe sources for industries and daily use as fuel, etc., especially since they do not cause a double amount of pollution or harmful gas emissions.

-at the long term: Working in renewable energy plants does not pose any health risks to workers in the field of renewable energy, unlike what nuclear energy or fossil energy can

pose in terms of chronic diseases and skin diseases such as cancer, burns, etc. (With dough Khalidiya, Saji Fatima, Abdul Rahim Laila, p108).

-natural disasters: The relationship between the use of renewable energies and the increase in natural disasters is an inverse relationship, in contrast to traditional energy, which is considered to have a direct relationship with disasters. In fact, sometimes these energies contribute to the emergence of these disasters. However, it is not possible to deny these increasing natural disasters due to climate change on the one hand and negative dealing behaviors with variables. Environmental on the other hand, but despite this, renewable energies have less negative impact on society and the surrounding environment.

Fourth: Renewable energy is located near the centers of its exploitation (use).

Renewable energy generation plants are distinguished by their presence near the communities that use them, whether these communities harness this type of energy for domestic consumer or industrial uses. This naturally provides an aspect of the societal sense of the value of shared collective ownership and enhances the role of citizenship towards preserving natural resources to realize their direct value (Souad, Ayat, Khaida

Al-Orabi, p154).

Fifth: Renewable energy is environmentally friendly

Renewable energy, by its nature, is clean energy that does not contribute to exacerbating environmental problems, such as toxic waste or extractive pollutants. It rids agricultural products of chemical pollutants, and thus increases agricultural production, reduces acid rain, and helps mitigate the effects of climate change. However, in return, it requires a specific technology for each type. It is a type of renewable energy source, which is naturally simple and not complex, as it can be manufactured in developing countries(With dough Khalidiya, Saji Fatima, Abdul Rahim Laila, p108).

Sixth: Renewable energy is compatible with the principle of environmental protection

Systems and projects investing in renewable energy take into account the basic principles of sustainability, in addition to a relative guarantee that varies from one project to another and from one country to another that no future damage will occur to the environment as much as possible. This is the essence of the principle of prevention. The principle of prevention means preventing the occurrence of environmental damage by taking appropriate preventive measures before preparing a plan or implementing it. The work or activity of preventive measure is a prior measure, preferable to taking post- application measures such as repair, restoration, or suppression that occur after confirmed damage to the environment occurs. Preventive measure is not exclusive but complementary because it is not always possible to predict all natural hazards. The Geneva Convention on the High Seas is a year (1958It is one of the first international agreements related to the protection of the environment that stipulated the principle of prevention, as it stressed the commitment of countries to take all preventive measures and procedures necessary to prevent pollution resulting from the transport and unloading of petroleum and the dumping of radioactive waste and other hazardous materials in the seas, which is corresponded to Article Three of the French Environment Charter (the French Environmental Charter must Every person, in accordance with the conditions specified by law, may prevent damage to the environment or limit its consequences if this is not possible. (My cure, repentance,2021, p. 148).

The third requirement Renewable energy

The Third Requirement Renewable Energy

Renewable energy has great potential to advance human development, and at the same time contribute to addressing environmental challenges. It also plays a crucial role in

successfully combating climate change. The United Nations Secretary-General's initiative was developed in2011-2012On Sustainable Energy for All Recognizing the critical importance of energy for development, The initiative has set three goals to be achieved by the year 2030These are: ensuring universal access to modern energy services; Double the global rate of energy efficiency improvement; And doubling the share of renewable energy in the global energy mix. Since its inception, more than eighty developing countries have officially signed the initiative (Resolution of the United Nations General Assembly65/151), the importance of renewable energy lies in the diversity of its sources, which include:

First: solar energy

The sun is considered the main source of many of the energy sources found in nature, which humans have been able to harness using technological means that are constantly developing. The energy resulting from the sun is equivalent to...10A thousand times the total energy consumed globally resulting from any other fossil fuel (Badroni, Hoda,2020,s 130In general, solar energy is considered low-cost compared to other sources of energy, as the production of one watt is (2) only a dollar, which encourages countries to invest in the field of solar energy. In this regard, China has set a strategic goal to produce a percentage of16% of its primary energy from renewable resources by year2020It includes investments in solar and wind energy, and in the same sustainable context and at the level of Arab projects, the UAE has implemented the Shams Dubai initiative to encourage residents to install photovoltaic panels on the roofs of their homes to produce electricity from solar energy in preparation for connecting it to the public grid, as the Dubai Integrated Energy Strategy is classified as 2030In the sustainable Masdar City)Saleh Abdullah,2017, p. 185).

Solar energy can be exploited technically using three methods that are considered economical and safe. The first method is a method that collects its heat for direct use for heating or cooling. The second method is by trapping the sun's heat to produce steam in order to operate an electric generator. The third method is to invest sunlight to generate electricity directly through photovoltaic cells (Sirat, Ismael,2010,74) .

Second: Air energy (Wind Energy)

The use of wind energy began at the beginning of the twentieth century as a result of the high prices of non-renewable energy. Wind is converted into electrical energy by means of windmills, which are giant turbines with three arms that are driven by the wind and placed on top of tall towers. They work as fans work in reverse, and this type of Renewable energy is considered the fastest and most growing on the global level, and according to an estimate by the International Standards Organization, wind energy can generate electricity equivalent to20)One million megawatts on a global scale, which is many times the capacity of hydropower (Badroni, Hoda,2020,s 132).

In this, Britain inaugurated the largest wind farm in the world whose electricity production capacity exceeded the total capacity of the rest of the world. The world is successively accepting this type of energy because it is safe and renewable, and it is clean gases that do not cause greenhouse gases or pollution to the atmosphere. In the same context, the percentage of electricity generated by China from wind has reached (36%) and globally (9%) There is a global trend today to establish wind farms in the seas to take advantage of the high speed of the winds (Faisal, Saddam,2017, s22)In fact, wind technology has come a long way in presenting itself as an essential partner in the process of producing electrical energy, as estimates indicate that wind energy can provide approximately12(%) of the world's energy need by (2020(Sirat, Ismail,2010, s83) .

Third: Geothermal energy (energy inside the earth)

What is meant by it is the heat stored under the surface of the Earth, which increases with increasing depth and emerges from the Earth's interior through contact, thermal transfer,

hot springs, and volcanoes. Thermal energy in the Earth's interior can be exploited by technical methods available in an economical manner. Energy scientists believe that geothermal energy is one of the most important sources of renewable energy and can Investing in generating electrical energy with high production. This energy is produced through the natural radioactivity of the rocks that make up the Earth's crust, due to the presence of the geological components of the Earth's interior and layers storing matter. (Badroni, Hoda,2020,s 123), which is in two forms: The first picture: The previously mentioned geothermal energy related to the earth, and the second picture: The thermal energy of groundwater in the interior of the earth, where the temperature of the water in the seas and oceans near the bottom of the ocean and underwater volcanoes varies, and if its temperature reached a sufficient degree, it could be invested to produce electrical energy. However, it is taken into account that the second picture is that it is often very expensive to produce and its use is limited to coastal countries (Faisal, Saddam, p.28) .

It should be noted that the first experiment in generating electrical energy using thermal energy in the ground was in Italy.1904To light the lamps using steam coming from cracks in the ground, with a production capacity estimated at (2801000 kilograms, followed by other countries such as Mexico, China, Japan, and Russia (Sweileh, Amal,2017, s195).

Fourth: Bioenergy (organic energy):

The term bioenergy generally refers to the use of organic matter from plants and animal waste as an energy sourceAll of these materials are transformed into fuel, such as: 1.AlcoholsSuch as ethyl, methyl, propyl, butyl, which are produced from fermentation processes of various types of living mass.

2.Biodiesel:It is produced from the chemical reaction between biomass (organic), especially vegetable oils, with alcohols, then bio-gasoline and bio-jet engine fuel are produced (Abu El-Naga, Magdy,2011, s15It is characterized by being (friendly to the environment, high density, easy to transport and store). This type of renewable energy is considered expensive and requires high production capacity equal to or greater than what is produced from it, and this is at the expense of an agricultural food crop, as (10% of gasoline needs may be at the expense of half the corn crop, for example, and it is difficult to generalize and expand it globally or regionally, but Brazil adopted it for considerations including increasing employment and increasing unused agricultural areas.

Fifth: Hydrogen energy

Hydrogen is the fuel of the future, and it is the most abundant element on Earth by (75%) of the volume of the universe and its effective properties (clean fuel, more efficient than fossil fuels, widely available). Hydrogen fuel is used in safe chemical industries such as ammonia, hydrochloric acid, and effective fuel in missiles (Nazih, Sam,2014, s50),It is an ideal fuel, as one kilogram of hydrogen produces three times the energy produced by the same amount of gasoline, and it can be provided through the process of electrolysis or heating to3500degrees Celsius or through its influence by solar radiation in a manner similar to the process of photosynthesis, Germany is considered one of the leading countries in using this type of renewable energy, as there is a significant development in the demand for hydrogen in the studied scenarios in transportation, especially for passenger cars, buses, trucks, and trains, and to a limited extent in the field of aviation (through hydrogen-based liquid fuel) and navigation as well. There is also a significant development in the demand for hydrogen in the field of industry, especially in the iron and steel sector, and hydrogen fuel is classified as a good alternative to fossil fuels (Nour El-Din, Muhammad, p.155).

Sixthly: Water energy (hydroelectricity)

The history of relying on water as a source of energy goes back to before the discovery of steam power in the eighteenth century. Until that time, people used river water to operate some waterwheels that were used to manage flour mills, textiles, and sawing wood (Ali,

Falaq, Rashid, Salmi,2017, s92), This type of renewable energy is characterized by being (available in good proportions, does not contribute to carbon dioxide emissions, suitable for industrial applications, low energy production costs compared to fossil fuels) and its share of global energy production is estimated at (19%),Its disadvantages are (the lack of suitable places for it, the destruction of wildlife due to the construction of dams near watersheds, and it cannot be produced during the drought period. It also contributes to methane emissions and the difficulty of storage). It should be noted in this regard that the capacity of Iraq's rivers was about (68.5). One billion kilowatts. This energy was used for the first time in Iraq in 1972 with the establishment of the Samarra hydroelectric station. The largest station is the Bakhma hydroelectric station. The percentage of hydroelectric stations in Iraq is (22%) of the total electrical power stations (Bal Ajin, Khalidiya, Saji Fatima, and Abd Al-Rahim, Laila, p. 111).

The Iraqi legislator also regulated water management in several legal and administrative areas, especially related to the investment of water spaces nationally or in areas shared regionally (Idan, Karar,2023).

Seventh: Ocean energy

The energy resulting from the continuous movement of the oceans in generating electrical energy consists of two forms: The first image: wave energy. Waves contain large amounts of kinetic energy that can be invested in technical ways, including pistons pressing on the waves and turbines to generate electrical energy (Guideline for Parliamentarians for Renewable Energy)As for the second picture: tidal energy, which is also called lunar energy, and it is a type of kinetic energy that is stored in the currents resulting from the tidal movement, of course, from the gravity of the moon, the sun, and the rotation of the Earth. It is renewable and clean energy, and its financial returns are high, but it is high in costs in establishing stations. Generation and its source are oscillatory (Abdul Qader, Wissam, p28).

The above constitute the most reliable types of energy sources in the world, the most consistent with the sustainability of natural resources and the preservation of the environment, and the best options for building an international energy system that places among its priorities ensuring that future generations obtain high-quality energy without harming natural resources or disrupting climate systems. It must be noted that There are other types of energy sources that are classified as relatively good, less polluting compared to fossil fuels, and less expensive because they work with technologies to modernize widely available sources and make them more sustainable and produce less emissions. They are also available free of charge in all countries, but they lack self-renewal and sustainability of their sources, including gas. Naturally associated with crude oil extraction operations, coal cleaning technology (carbon capture) is a strategy that aims to capture and store carbon from coal as it is generated.30)%-75%) of clean coal (Al-Mashhadani, Ban, p261),The process of obtaining thermal energy or biofuel from solid waste (by burning it).

The second topic

The relationship between the branches of international law and renewable energy The Second Topic

The Relationship between the Branches of International Law and Renewable Energy

The increasing complexity of understanding energy as a legal issue with an international dimension makes law a more important factor in energy security than other means of governance, especially economic instruments and the obligation to all (Al-Maliki, Hadi Naeem,2021, p. 11) and issues directly related to energy security, such as supplies, eliminating disparities between developing and developed countries, seeking to transfer

and promote effective technology for renewable energy efficiency, organizing the international cooperation mechanism in this field, and the subsequent facilitation or restriction of renewable energy imports and ensuring the achievement of complementary aspects of justice in energy distribution. And regulating its use in addition to humanitarian considerations related to energy in terms of it being necessary for human life, which embodies a relationship with the branches of international law related to human rights and defining the responsibilities of states in this regard, which requires us to examine the relationship between the branches of international law and renewable energy.

First branch

Relationship with international human rights law

First branch

Relationship with International Human Rights Law

By extrapolating the human rights approach in the plan to achieve sustainable development to one year2030, we see that it addresses the issue of sustainable development in situations of peace and conflict and is based on international law, including the United Nations Charter, the Universal Declaration of Human Rights and other instruments, especially the Declaration of the General Right to Development, which stipulates that (the sustainable development goals seek to fulfill due human rights For all), and as stipulated in the preamble, the Declaration stresses that all states should respect, protect and promote human rights and fundamental freedoms for all, without discrimination of any kind on the basis of race, color, sex, etc. (Paragraph 10 of the 2015 Declaration on Sustainable Development) The World Declaration for Sustainable Development also indicated in the General Assembly resolution of 2015: "... and everyone's benefit from modern, sustainable energy services that can be relied upon at an affordable cost, sustainable transportation systems, and quality infrastructure and the ability to withstand."

Renewable energy constitutes the core of the relationship in promoting human rights, and perhaps the most prominent rights that can be secured for future generations is ensuring the sustainability of natural resources as a right to life (Fanous, Hawra Qasim, Abd, Mustafa Salem,2023, p. 112), which constitutes an integrated goal with the purpose of using renewable energy, especially after its complementary nature to the dimensions of sustainable development is demonstrated, which is also referred to by the International Covenant on Economic, Social and Cultural Rights, as specific goals must be set regarding human rights and environmental protection on the one hand and energy works. On the other hand, it is more renewed when talking about environmental protection, in order to ensure a safe, clean, healthy and sustainable environment for humans and to implement it through effective protection on an equal footing for individuals, groups and community agencies working in the field of human rights or concerned with environmental issues. States should work to educate Public awareness of environmental issues, obtaining and disseminating environmental information, facilitating access to it by anyone in a timely manner, participating in environmental decision-making, and including appropriate mechanisms and fair remedies in matters of environmental development (John Knox, 2018).

In this regard of the transition to a renewable energy system, international human rights principles should not be moral imperatives, but rather legal obligations (United Nations Economic and Social Commission for Western Asia,2018, p. 13), it must also be noted that there is an international law for energy in general and renewable energy specifically that does not conflict with the sovereignty of states in managing local energy systems in terms of taxes and mechanisms for establishing energy units, but rather it must take into account the rights of future generations in choosing these systems and it cannot be created. This transformation into a secure energy system through supporting national

governments in achieving sustainable development, especially with regard to energy (the seventh goal), and international cooperation to implement the (2030) plan.

As is known, one of the basic conditions for full respect for human rights is an environment of sufficient quality to avoid significant impacts on health. Due to the devastating impact that air or water pollution can have on health or even on the lifespan of humans in many regions of the world, from a legal point of view, it has led to This expanded the scope of human rights and their provisions to take into account certain environmental protection measures and thus made human rights (enshrined in treaties and also in domestic constitutions) and their institutional arsenal (regional courts, commissions and local judiciary) have a significant impact on matters of environmental regulation, establishing the previous affirmation of the right to the environment. It is sound to have a sustainable energy system, which also clarifies the relationship between human rights and their mutual impact with climate change as a problem of the era that threatens future generations (Pierre Marie Dupuy,

p. 357), The concerns of researchers in the field of international law and with regard to environmental protection, specifically the issue of the use of renewable energy, remain about the lack of balance in distributing the burden of climate action concerned with improving the quality of energy and increasing the rates of its use at the expense of poor countries that face great difficulty in transforming their systems. To renewable energy and thus creating legal chaos in favoring the right to obtain renewable energy towards economic and social human rights in poor, less developed countries (Qasim, Khaled, 2007, p. 421).

Second section

The relationship between renewable energy and international humanitarian law

Section Two

The Relationship between Renewable Energy and International Humanitarian Law

On the other international side, away from rights in times of peace, that is, what is concerned with human rights during military conflicts and war operations, we discuss in a general concept about protecting the environment internationally, and in a specific concept about renewable energy in terms of impact and impact (Mahmoud, Lama Abdel Baqi, Muhammad Marwa Ibrahim,2019), as the issue of energy in general constitutes an important factor during armed conflict because it is linked to supporting military operations on the one hand and alleviating the burden of war on defenseless civilians on the other hand. It even exceeds that in importance or is considered by some to be a fundamental reason for the occurrence of regular or even hybrid armed conflicts. At the very least, the energy issues contribute to the exacerbation of the conflict, whatever its type, or even its transition from an internal stage to an international conflict. Its impact is not limited to two parties only, but rather it has a wide regional impact or a global economic impact, for good. An example of this is the energy crisis we are experiencing today, which has exceeded the boundaries of the Russian-Ukrainian war. To include an energy crisis in the European Union and a global economic crisis affecting economically fragile countries that suffer from internal unrest or any other crisis, especially in countries such as Yemen, Iraq, Syria (Hatem, Doaa Jalil, 2021).

This is despite the fact that international organizations, led by the United Nations and the International Federation of the Red Cross and Red Crescent, play an important role in protecting the environment, and despite the fact that war is an internationally unacceptable means of resolving conflict, and international crises are supposed to be managed without armed conflict and heading to settlement by peaceful means, in reality it is still continuing. (Bashir, Hisham,(2011, p. 65). The purpose of the existence of international humanitarian law is to protect the human being himself and the environment in which he lives, especially during armed conflicts, where renewable energy facilities

constitute the most important manifestations of use and connection to the needs of civil societies, in that they are considered among the civilian objects that must be preserved. Within the principles of international humanitarian law, we will therefore explain in this research the sources of protection for the environment and renewable energy, which constitute direct and indirect sources in international humanitarian law, including:

First: Direct protection:

Those legal implications explicitly referred to for the protection of the environment, civil objects, and natural environmental resources, including renewable energy sources and facilities, as stipulated in Article (35) of the First Additional Protocol to the Geneva Conventions of 1949 stipulates that it prohibits the use of means or methods of combat that are intended or expected to cause severe and widespread damage and suffering to the natural environment. This means that the belligerents use weapons that are harmful to the environment or damage to the environment occurs as a result of armed conflict. Therefore, if this is achieved This is because the state causing the damage has committed an act that violates the rules and conventions of the Geneva Conventions and is therefore internationally responsible for its action (Al-Dulaimi, Fares, 2009,p. 59), and that this text is not limited to protecting the environment only when harm occurs (intentionally), but also includes the expectation that harm will occur, as this is a forbidden act that requires responsibility. The text was intended to protect the environment in itself and not incidentally on the occasion of providing protection to civilians, as stated in Article (55). From the Protocol itself, it is taken into account during combat to protect the natural environment from severe, widespread and long-term damage, as this protection includes the prohibition of the use of methods or means of combat that are intended or expected to cause such damage to the natural environment (Article 55, First Additional Protocol to the Geneva Conventions). In 1949), it should be emphasized that the use of renewable energy facilities does not contribute to increasing the risks if they are subjected to a military attack or even destruction, as they are natural facilities that are compatible with the nature of the environment (Al-Maliki, Hadi Naeem, and Abd, Mustafa Salem, 2017).

Second: Indirect protection:

They are general principles and legal articles in international humanitarian law that do not explicitly refer to environmental protection, but rather include them indirectly due to their connection to direct human life or their interactive role towards human life, including articles (22-23-28-46-47) of the Fourth Hague Convention of 1907, and the provisions of Articles (16-53-147) of the Fourth Geneva Convention regarding the Protection of Civilians during Armed Conflicts, for example Article ((28) (The High Contracting Parties undertake to take Within the scope of its criminal legislation, all procedures are taken to ensure the prosecution of persons who violate the provisions of this Agreement or those who order its violation, and the imposition of criminal or disciplinary sanctions on them, regardless of their nationalities.

We find it difficult to implement this article because it did not include a list of heritage elements protected under it, and therefore it is impossible to specify, allocate, or update due to the lack of the basic list subject to protection (Khalaf, Hossam Abdel Amir, p.38), when talking about the existence of a military crisis that requires the intervention of the protection of international humanitarian law towards the environment in general and energy facilities in particular, it should be noted that the lack of energy sources and their presence is a factor causing these wars and conflicts as a result of its humanitarian consequences, as the Committee of the Red Cross (ICRC) indicated in its last report for the year 2022 to how armed conflicts affect the presence of natural resources (which are considered renewable energy sources) and how the lack of these resources leads to consequences that hinder humanitarian work and lead to internal disturbances that may lead to humanitarian armed conflicts, as I emphasized under the title ((Armed Conflict and Climate Change)) Both are dangerous and unfair, and when they come together, the

danger doubles and the chances of survival decrease, so the residents of communities living under armed conflict suffer from limited livelihood resources. In addition to that, these resources are gradually diminishing due to climate change. There are also 25 countries around the world that are the weakest in the face of climate change, including four countries that are already suffering from armed conflicts, such as Iraq, which is considered the fifth country in the world vulnerable to climate collapse, and Yemen, which is considered the least capable country in the world. Adapting to climate change, Libya is considered the country most threatened by water insecurity.

Whatever the type of protection for natural resources and environmental elements, whether direct or indirect, it is related to the rights of future generations (Hassan, Falah, Khalaf, Hossam,2022).

Section Three

Relationship with private international law

Section Three

Relationship with Private International Law

In most developed countries, environmental legislation has become the most important legal system. Given that society seeks to achieve a balance between the need to protect the environment and its elements and limit manifestations of infringement on the sovereignty of states in determining their jurisdiction while ensuring the possibilities of individual prosperity, it is not surprising that the environment has become a pretext for debate. A broader overview of the impact of private international law (Al-Assadi, Abdul-Rasoul,2021, s7), especially because it regulates the most complex issues related to the rights of individuals and legal persons who are considered the poles of the process of benefit and environmental protection internationally, under a special legislative umbrella that must not be relatively devoid of legislative stability and legal security because it may address issues related to investment in international energy projects and international contracts that are formulated. According to nature's responses related to energy transfer, technology exchange, and carbon trading to achieve reasonable proportions of gas emissions that contribute to climate change, research in the field of private international law support for the renewable energy sector is multiple and capable of development and includes aspects with multiple economic and sovereign dimensions. Perhaps the most prominent aspects that the law considers are Private international is civil liability within the scope of compensation for damage, and this is what is elaborately regulated by the Lugano Convention (on civil liability for damage resulting from activities hazardous to the environment in general).1993) (Hans Descamps, 2008, p. 25), but we are looking here at modern innovative areas organized by private international law within the framework of supporting international renewable energy law, including emissions trading (carbon), renewable energy investment contracts, and the transfer of renewable energy technology (Abdel Wahab, Mervat, 2017). , p. 513).In the field of regulating public energy contracts, we see that, in the face of many countries and organizations in the world taking a position against the unclean use of energy sources, many countries in the world have begun to abandon the use of energy from traditional sources in favor of the use of renewable energy, which has called for a search for coverage of this activity. Legal, as countries began to accelerate in regulating energy-related issues with national legislation and also issuing more flexible instructions for the purpose of accelerating work with renewable energies. Jordan, for example, issued (189) licenses in partnership with foreign investors and the private sector to practice the activities that it granted from the beginning of 2017 to 2018, namely supply and installation. And operation, maintenance and inspection of renewable energy projects, as well as involving contractors, investors and companies (Al-Sharmant, Munther, 2018, p. 11).As for energy contracts, which are considered more broad and include several aspects of the work, their general concept can be clarified as being those contracts and agreements related to renewable energy, whether it is the use,

supply, training, or installation of energy facilities supplied from renewable sources, whatever their type (solar, wind, water, Etc.) which aims to achieve the goals of sustainable development and preserve the environment from pollution (Saddam, Faisal, p. 19), and within the framework of digital technological progress, the idea of using smart contracts to regulate renewable energy issues can also be put forward (Othman, Ayman, 2023).

One of the most important manifestations of private international law, in matters of supporting renewable energy and reducing environmental pollution, is its regulation of emissions trading, which is regulated by countries' private international systems (i.e. national conflict rules that regulate international issues) in a manner that does not conflict with international agreements for the purpose of using guidelines and negotiating agreements. Voluntary energy is an essential support in the context of negotiating climate change to support legislation that represents the introduction of carbon emissions trading or similar laws to mitigate climate change by promoting next generation renewable energy technologies automatically through fixed and specific legislation. However, a serious commitment to the widespread adoption of renewable energy technologies requires a legislative response. It is more comprehensive than relying on establishing other forms of legislation or policies and removing legislative obstacles that prevent the provision of these technologies in equal and safe ways for all. For example, the strategies of European countries revolve around a trade policy.emissions in the European Union (EU ETS) which is based on the Emissions Trading Scheme and aims to reduce emissions by setting future goals for actors in industrial facilities, as the European Union Emissions Trading System is considered the cornerstone of the European Union's policy to combat climate change and its main tool for reducing greenhouse gas emissions at an effective cost. It is worth noting that it is the first major carbon market in the world and is still the largest market (Nour El-Din, Muhammad, p. 12).

Modern technology and ways to treat pollution constitute (Jaafar, Mahmoud Khalil, Ibrahim Nour Khaled,2021,p. 250) In the field of renewable energy, it is the most prominent thing regulated internationally by private international law, and its great importance in developing sustainable energy systems is indicated by the Kyoto Protocol of 1997 through the obligations that developed countries bear towards developing countries, such that (developed countries undertake to finance technology transfer activities from them to other countries. developing and least developed technologies, especially those environmentally friendly technologies in the fields of energy, transport and communication (paragraph one of the Kyoto Protocol of 1992), as affirmed by Article Four of the Paris Framework Agreement on climate action and cooperation in conducting scientific, technological, artistic, social and other research, as the importance of technology transfer is considered Concerned with energies and general operational and administrative technology is necessary to achieve any of the sustainable development goals, especially renewable energy, because it requires a specific technology for the purpose of converting natural resources into fuel or electrical energy (paragraph (h) and paragraph (g) of ArticleThe fourth Paris Agreement of the 2015 Framework Agreement).

This importance was also stated in the Vienna Agreement1985 to protect the ozone layer by referring to international cooperation in the field of technology in a way that includes facilitating the acquisition of alternative technology by other parties, providing information on alternative technology and equipment, providing references and guide books for the parties, and appropriate scientific and technical training for employees (Hassan, Fahmy, 2008, p. 85).

Private international law also contributes greatly to issues related to regulating civil aviation emissions because they are primarily subject to state control and then international responsibility to reduce emissions or pollutants that cross borders through the air, as scientific statistics and international and national reports indicate that the transport sector by civil aviation constitutes a large proportion. Of emissions during flight

or related to landing and take-off, and the gases resulting from these operations, especially since this type of transport continues on a daily basis and throughout the year, and thus directly supports renewable energy, as issues related to private international law and pollution in general depend in terms of responsibility away from contracts. and Commerce to prove the causal relationship between the activity and the damage leading to any type of pollution or disturbance of the environmental balance, whether this plaintiff is a foreign or national, an ordinary or legal person (Roy Harrison and Soetris Vrdoulakis, 2015, p1).

Perhaps the most important thing that can be managed by private international law in support of renewable energy is: International investment law because it deals with the rights of each investor in relation to the public authorities of the host country. With the expansion of the scope of legal rights and remedies, the desire of foreign investors to use these tools increased, while legal recourse from state to state was ultimately used to enforce the rights of (Al-Aboudi, Abbas, Ali Laith Abdel-Razzaq,2019).

Establishing legal systems to implement and support renewable energy technologies is necessary for a number of reasons, including that investment will not take place without adequate legal protection for consumers and investors. The transition from an energy sector dominated by fossil fuels to clean energy solutions requires huge investments, and interested parties will need to ensure their legal status. Therefore, governments seeking to encourage investment in the energy sector must establish a fair and reasonable legal management system that protects the interests of consumers and investors and provides appropriate forms of legal redress.In the same context, the European Commission committed to moving forward with the integration of renewable energy into the internal market and addressing legal incentives for investment in electricity generation, in addition to exempting property transfer taxes or reducing income tax for investors. As for the Iraqi legislator, he did not regulate what is specifically concerned with supporting renewable energy investments, but rather referred to them. Implicitly in supporting foreign investment in environmentally friendly projects within the articles14Paragraph 5 and 17 Paragraph 5 of Investment Law No. 50 of 2015 In fact, the absence of such a system would affect investors in particular, and society in general (Adrian J. Bradbrook, 2011, p. 20).

Section Four

Relationship with international law of common heritage Section Four

Relationship with International Law of Common Heritage

First: Renewable energy is a common natural heritage for its human value:What constitutes the nature of this common heritage of humanity (renewable energy)Alexandra Ruberk, 2022, p 227), an area of moral obligations emanating from the principles of international law and the legal obligations included in the texts of relevant international agreements to support the development of natural resources and ensure their sustainability in a sound manner, and it entails several important matters, including international cooperation for development, provided that it does not conflict with This cooperation is with the sovereignty of states in the areas that include within their territorial rights guaranteed under international law, and this cooperation should take place within the scope of renewable energy in peaceful systems only. We are here to promote a specific framework through which the mechanism of renewable energies can be transformed into non-peaceful systems, but it must be understood. The ability of science to transform any system in the world into a part of evil or good (Gisèle Ringeard-Demarcq, 2018, p.337), although the idea of harnessing renewable energy types for non-peaceful works has been ruled out, the controversy over the non-peaceful use of renewable energy remains a possibility, which constitutes a violation of the agreements and obligations concerned with maintaining international peace and security. However, controversy in this regard arises around certain areas of the Earth that are shared in common, such as The water

spaces of the high seas and the Antarctic continents, specifically the southern ones. These areas in particular include a number of cultures concerned with indigenous peoples that adopt a lifestyle that differs from the rest of the continents and rely primarily on hunting available animals, some of which constitute rare species threatened with extinction.

The legal basis for the right of peoples to preserve their heritage from an environmental perspective is in United Nations Resolution No.2158) entitled Sovereignty over Natural Resources, which enables peoples to limit economic seizure or assault on their natural resources (Adan Nieto Martin, 2012, p. 81),The use of renewable energy always affects the common heritage in a positive way. It contributes to the built or constructed (material) heritage in several aspects, including its preservation. Renewable energy provides heating power that contributes to keeping heritage and cultural places free of moisture, which can turn into an element of damage and a source of bacterial aggregation. At the same time, this energy is safe and affordable, as we mentioned previously, and it also provides continuous lighting that cannot be interrupted. It adds beauty and gives the impression that these buildings are ever-present, which forms a positive impression between people and their ancient heritage in constant continuity. Renewable energy helps in rehabilitating some high- quality buildings and using them appropriately. It is compatible with current needs, thus reducing consumption and presenting a positive image between the technology of the present and the hall of the past (Keller Smith, Lilia Lucia Lizama, and Israel Hedera, 2022, p. 247),Renewable energy is also seen as one of the reasons for the perpetuation of the natural elements in the earth's atmosphere, as it is a natural heritage that must be managed with a shared responsibility that takes into account the rights of generations in it. Renewable energy is also a sustainable model of global technology that preserves the quality of natural and built landscapes and does not contribute to any pollution, whether through noise or waste. Fossil or maintenance and replacement equipment, which is often heavy and complex, and this is what Italy and France are clearly adopting by generalizing the use of hydroelectric energy in public facilities, parks, and places of heritage value (Michael Roth Sebastian et, 2018, p. 57).

Second: Renewable energy, by the nature of its resources and its compatibility with the environment, is classified as a common heritage of humanity:Because their sources are natural resources and they are shared as a tangible human heritage, in addition to that they enhance the value of the historical heritage if they are used in historical sites because they merge with nature and their security rate is great when compared to other sources (Anna Maria Huppert, 2020, p. 636),

As for the concept of common heritage: The new concept of common heritage appeared for the first time in the Outer Space Treaty, the first article of which begins as follows: (The exploration and use of outer space, including the Moon and other celestial bodies, shall be for the good and for the benefit of all countries, whatever their stages of economic or scientific development, because it is within the prerogative of humanity.) Therefore, the exploration and use of space is within the prerogative of humanity. This concept was presented again when the Committee for the Peaceful Uses of the Seabed and Ocean Floors outside the boundaries of national jurisdiction was established. This committee was formed by the United Nations in (1967) It was commissioned in 1970) to prepare for the Third Conference on the Law of the Sea, the purpose of which was to allocate profits derived from the exploitation of the seabed beyond the limits of national jurisdiction of the human community as a whole (Treaty on Principles Governing the Activities of States in Relation to the Exploration and Use of Outer Space of 1967).

Common heritage is also defined within the scope of international law, as indicated by the United Nations Educational, Scientific and Cultural Organization (UNESCO).UNESCO) that it includes material and intangible property that constitutes basic universal values for the human race and present and future generations. Thus, it includes all the various irreducible natural resources, material and intangible. As for the characteristics of common heritage, they

are primarily universal rights, meaning that the rights of generations (in heritage Common) are universal rights, for example in the texts regulating the exploitation of the resources of the region stipulated in Part They are characterized by "generality", as human rights have no meaning unless they are collective public rights and are characterized by interconnectedness and indivisibility, and also among their characteristics is solidarity, meaning that each generation existing in a period of time must work in solidarity to protect the common heritage of future generations (Qasim,Hassan Falah, 2020, p. 17).

Conclusion:

In conclusion, I reached a set of conclusions in light of the objectives and questions posed in the introductions to this study, which are as follows:

First: Results:

1. Renewable energy constitutes the only way at the present time to achieve development in the environmental and economic fields in all societies at a time when traditional energy threatens to become depleted and limited for a number of societies emerging from armed conflict.

2. Renewable energy sources are a successful alternative to non-renewable energy sources (traditional sources). Moreover, they are considered healthier in terms of waste and pollution.

3. Renewable energy is one of the most important types of energy that is safe, affordable and reliable at the same time, which represents the basis in many countries for supplying energy to all its needs and getting rid of the problem of financial cost.

4. International law contributes to regulating the investment of renewable energy and its use in optimal ways for societies.

5. The use of renewable energy in its various and multiple sources achieves a high rate of energy security, especially in developing societies, but this transformation in energy systems requires great international cooperation.

Second: Recommendations:

1. Enhancing government interest in renewable energy sources in all their forms and forms and involving the private (private) sector in investing in such projects.

2. Increase promotional campaigns to attract foreign investors to invest in renewable energy sources and introduce advanced technology in such projects.

3. Drawing on the experiences of leading countries in the field of renewable energy, especially energy that is more available than other energies, and trying to apply it, especially in our developing countries.

4. Develop strategies for investing in renewable energy, especially those energies that are available throughout many seasons of the year, including solar energy.

References

First, the Arabic sources:

1. Ibrahim, Majeed Ahmed, (2016), Renewable energies and their role in protecting the environment in order to achieve sustainable development,Tikrit University Law Journal, No29, vol4, Fallujah University, College of Law: Iraq, Tikrit.

2. Abu Al-Naja, Magdy, (2011), Biofuels (production - advantages - risks - uses - environmental and development impacts), Academic Library, first edition: Egypt, Giza.

3. Al-Asadi, Abd al-Rasul Abd al-Rida, (2021), Private International Law, Al-Sanhouri Library, first edition: Lebanon, Beirut.

4. Badroni, Hoda, (2020), Investment in renewable energies and its role in achieving the duality of environmental protection and sustainable development in Algeria, Al- Reyadah Journal of Business Economics, Vol.6, the number3, Hasiba Ben Bou Ali University of Chlef: Algeria.

5. Bashir, Hisham, (2011), Environmental Protection in Light of the Provisions of International Humanitarian Law, National Center for Legal Publications, first edition: Egypt, Cairo.

6. Bin Saleh, Abdullah bin Muhammad, (2017), The shift towards a green economy, international experiences, a report prepared by the Arab Administrative Development Organization, Arab Journal of Management, Vol37, the number4.

7. Bin Sweileh, Amal, (2017), Changing the world's course from using nuclear energy to employing renewable energy, Journal of Human Sciences,the number48.

8. Jaafar Mahmoud Khalil, and Ibrahim Nour Khaled.2021. "International protection of the high seas area from nuclear pollution." Journal of Legal Sciences36(December):244- 266. https://doi.org/10.35246/jols.v36i0.417.

9. John Knox, (2018), United Nations Special Rapporteur on Human Rights and the Environment, Human Rights Obligations Related to the Enjoyment of a Safe and Clean Environment and Sustainable Health, United Nations Office of the High Commissioner, Document No. 59/3V/A/HRC.

10. Hatem Doaa Jalil, and Jaafar Mahmoud Khalil.2021. "Autonomous Weapons in Light of the Principles of International Humanitarian Law." Journal of Legal Sciences 35 (3): 280-305. https://doi.org/10.35246/jols.v35i3.

11. Good. Falah, successor. Abdul Amir Hossam.2022. "The rights of generations and its relationship to sustainable development." Journal of Legal Sciences 36 (3): 652-83.https://doi.org/10.35246/jols.v36i3.488.

12. Hanish, Ahmed, (2021), The shift towards renewable energies as a mechanism for achieving energy security and ensuring sustainable development, Journal of Economic Studies and Research in Renewable Energies, Vol.8, the number2University of Algiers: Algeria.

13. Khalidi, Balajen, Fatima, Saji, Laila Abdel Rahim, (2020), Global pioneering experiences in exploiting renewable energy - China as a model, Journal of Contemporary Economic and Commercial Studies, Issue 2, Ben Khaldoun University: Algeria.

14. Khalaf Hossam Abdel Amir.2019. "Sustainable development and nuclear energy – the dialectical relationship –." Journal of Legal Sciences 34 (1): 268-302.https://doi.org/10.35246/jols.v34i1.

15. Guide for Parliamentarians for Renewable Energy, (2013), a research paper for the United Nations Development Program in cooperation with the European Union and the Danish Ministry of Foreign Affairs, Office for Development Policy.

16. Al-Dulaimi, Fares Ismail Ahmed Al-Dulaimi, (2009), The International Responsibility of the United States of America for Damage to the Iraqi Environment, Master's Thesis, League of Arab States: Egypt, Cairo.

17. Al-Sharmant, Munther Yusuf Muhammad, (2018), The Legal Concept of Renewable Energy Contracts, a dissertation for the purpose of obtaining a master's degree in public law, Middle East University: Jordan, Amman.

18. Al-Shamaa Hoda, and Hamza Walid.2023. "The administration responsible for managing the public oil and gas facility in Iraqi law." Journal of Legal Sciences 38 (1): 242-75. https://jols.uobaghdad.edu.iq/index.php/jols/article/view/645

19. Sirat, Ismail Abbas,(2010), Possibilities and Opportunities for Promoting Renewable Energy in Anbar Governorate, Anbar Journal for the Humanities, First Issue: Iraq, Anbar.

20. Al-Aboudi Abbas Zaboun, and Ali Laith Abdel-Razzaq.2019. “The choice of law contract is applicable to the international contract.” Journal of Legal Sciences33(3):1-61. https://doi.org/10.35246/jols.v33is.154.

21. Abdel Qader, Wissam Nazih, (2014), Evaluation of the process of breaking strong and weak (OH) bonds in the presence of a catalyst using a laser signal to provide hydrogen energy, Damascus University: Syria.

22. Abdel Kafi, Ismail Abdel Fattah, (2007), Environmental Concepts and Terminology, Al- Dar Al-Thaqafiyya for Publishing: Egypt, Cairo.

23. Abdel Wahab, Mervat Muhammad, (2017), Renewable energy and the possibility of facing traditional energy challenges and enhancing Egypt’s role as an attractive market for carbon trade, Scientific Journal of Al-Azhar University - Cairo, Issue Seventeen: Egypt, Cairo.

24. Othman Ayman.2023. “The Smart Contract: Theoretical Foundation and Application Dialectic.” Journal of Legal Sciences 38 (1): 239-72.https://doi.org/10.35246/jols.v38i1.

25. My cure, repentance, (2021), Preventing the dangers of natural disasters in light of the principles of environmental protection, a thesis for obtaining a doctoral degree, Fares University Bab Medina - Algeria, Journal of Legal Studies, Issue 2, Volume: 7, Algeria.

26. Ali, Falaq, Rashid, and Salmi, (2017), Renewable energies as a gateway to achieving sustainable development - with reference to the case of Algeria and some Arab countries, Medina University: Algeria.

27. Ayat, Souad, Al-Orabi, Khadija, (2018), Obstacles to the strategy of developing renewable energies to support economic growth, Journal of Economics and Entrepreneurship, Vol2, number7.

28. Idan Karar, and Jaafar Rasha.2023. “Procedures of the administrative authority responsible for regulating and protecting water resources in Iraqi law.” Journal of Legal Sciences 38 (1): 516-51. https://jols.uobaghdad.edu.iq/index.php/jols/article/view/656.

29. Fanoos Hawraa, and Abd Mustafa.2022. “Climate justice in light of the Paris Climate Change Agreement.” Journal of Legal Sciences38(1):107-27. https://jols.uobaghdad.edu.iq/index.php/jols/article/view/639.

30. Fahmy, Hassan, (2008), Air Pollution, Its Sources, Risks, and Treatment, Dar Al-Ulum: Saudi Arabia, Riyadh.

31. Faisal, Saddam, (2017), Investing in Renewable Energy Projects, Zain Legal and Literary Library, first edition: Lebanon, Beirut.

32. Qasim, Hassan Falah, (2020), Transgenerational Violations in International Law, University of Baghdad - College of Law, a scientific dissertation for the purpose of master’s degree requirements: Iraq, Baghdad.

33. Qasim, Khaled Mustafa, (2007), Environmental Management and Sustainable Development in Light of Contemporary Globalization, University Press, first edition: Egypt, Alexandria.

34. Mahmoud Lama Abdel Baqi, and Muhammad Marwa Ibrahim.2019. “The legitimate military objective and the most important principles governing it in international humanitarian law.” Journal of Legal Sciences 30 (2): 693-742. https://doi.org/10.35246/jols.v30i2.217.

35. Al-Maliki Hadi Naeem, and Ali Ali Fares.2021. “The concept of obligations erga omnes in international law.” Journal of Legal Sciences36(December):1-21.https://doi.org/10.35246/jols.v36i0.424.

36. Al-Maliki Hadi Naeem, and Abdel Mustafa Salem.2017.“The spatial scope of war operations in international armed conflicts.” Journal of Legal Sciences31 (4): 28-57. .https://doi.org/10.35246/jols.v31is.100

37. Al-Mashhadani, Ban Ali Hussein, (2012), A comparative study between oil as a source of energy and alternative energy sources and its impact on oil prices, Center for Basra and Arabian Gulf Studies, University of Basra, Volume 40, Issue 4-3: Iraq, Basra.

38. Najm, Othman Saad,(2021), Renewable energy and sustainable development in public international law, a comparative study for obtaining a master's degree, Islamic University: Lebanon.

39. Nour al-Din, Muhammad Wajdi Ali, (2016), international environmental protection since the Stockholm Conference1972Until the Doha Conference of 20172012Zein Law Library: Lebanon, Beirut.

40. Youssef, Maryam, Hayawi, Naama, (2018), Renewable Energy between Reality and Application, Forum Journal for Economic Studies and Research, No3.

Second: Foreign sources:

41. Adan Nieto Martin, Elements of Environmental International Criminal Law, Journal of Forensic Science and Comparative Criminal Law, second edition, 2012.

42. Adrian J. Bradbrook, Creating Law for Next Generation Energy Technologies, University of Adelaide, Australia, 2011.

43. Alexandra Ruberk, Energy Law: An Emerging Academic Discipline (author's chapter from a book Right Law as Change), published by the University of Ellaide - Australia, first edition, 2022.

44. Analora Bicelup, Alvarudi Gracia, and Luenza Vicabeza, Integration of Renewable Technologies in Historical and Heritage Buildings, Research Center of the University of Perugia in Italy, ElSEVIER Magazine, Issue 111-96, 2018.

45. Anna Maria Hubert, Human Injection into Science and its Relationship to International Environmental Law, European Journal of International Law, Volume 31, Oxford University, 2020.

46. Anna Maria Huppert, The Human Right to Science and Its Relation to International Environmental Law, European Journal of International Law Vol. 31, Published by Oxford University Press, 2020.

47. Gisèle Ringeard-Demarcq, Solar energy and international development, Environment Juridique Review, 2018.

48. Hans Descamps, Robin Slapink, and Hubert Boken, International Documents Concerning International Liability, Springer, 2008.

49. Keller Smith, Lilia Lucia Lizama, and Israel Hedera, The Role of Built Heritage in the Sustainable Development Goals, From Statement to Action, National Research Council, Institute of Building Technologies in Italy, Published by Heritage in Switzerland 2022.

50. Lukas Hermwille, En route to a just global energy transformation, 2017.

51. Michael Roth Sebastian et., Renewable Energy and Landscape Quality, research submitted to the University of Nürtingen - in Germany for the year 2018.

52. Pierre Marie Dupuy, International Environmental Law, University of Cambridge, published by the Graduate Institute of Geneva.

53. Roy Harrison and Soetris Vrdoulakis, Civil Aviation, Air Pollution and Human Health, University of Birmingham - UK, Published by the Journal of Environmental Sciences, King Abdullah Universityversity - Saudi Arabia, 2015.