

Categorising Energy Forms and Legislative Instruments at the International Level: An Analysis

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Abstract

This article examines the essence of categorising energy forms and legislative instruments at the international level in an explicit manner in order to identify the causes, challenges and possible ways forward in the energy sector in general and Cameroon in particular. This article focuses on energy forms precisely on renewable energies that are environmentally friendly when compared to fossil fuels. In consequence to this, it should immediately be pointed out that, with the advent of climate change and its diverse negative consequences on man and the environment, it becomes vital to categorise the various forms of energies and spotlight amongst others their merits and pitfalls. This is because the energy sector in any country is vital at every ramification for any significant growth. A fundamental recommendation to this effect is that all states should take on board the utility of energy especially renewable energy in by integrating them in their various national laws.

Keywords: Categorising, Energy Forms, International level, Legislative Instrument.

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1. INTRPDUCTION

It must be underscored that categorising energy forms with the advent of renewable energies is important for the present and future generations. To this effect, traditional energy sources which for the past decades were used by homes and industries proved to be environmentally unfriendly. In this connection, therefore, it becomes a necessary evil to categorise energy forms in Cameroon. Again, the implementation and enforcement of international legal framework in Cameroon's energy sector can be attained by identifying the various energy forms that happens par excellence to be found in the country. Also, the implementation and enforcement of international legal framework in Cameroon's energy sector to foster energy development must take on board the existing realities, while anticipating the implementation of international legal framework in Cameroon's energy sector in the long run.

Additionally, the legal framework for energies in Cameroon is set out in various texts relating to the electricity sector, including Law No. 011/022 of 14 December 2011 governing the electricity sector in Cameroon [1]. Nevertheless, Article 63 of Law No.

011/022 provides a broad definition of energy, which encompasses all forms of energy from renewable sources, namely: solar thermal and photovoltaic energy; wind energy; hydropower from water sources with an exploitable capacity of less than or equal to 5 MW; biomass energy; geothermal energy; marine energy. Reducing climate change through renewable energies is supported by the National Development Strategy 2020-2030 (SND 30). Launched in 2020, it aims to provide access to electricity for the entire population by 2030. It shall be important to now examine the various energy forms.

2. Energy Forms

Electricity is essential for our planet and for the good life of the human race. In this perspective, it becomes vital to spotlight the various energy forms especially those energy forms that can ensure sustainable development.

2.1. Wind Energy

Wind technology harnesses the wind to provide mechanical power with windmills or turbines to generate electricity. The turbines allow the harnessing of the

¹ In addition to their tendency to reduce the dependence of the country on classical energy to electricity, these

texts do not include in-depth regulation of renewable energies.

power of wind in order to convert it to energy (electricity). When the wind blows, the turbine turns in a clockwise direction which enables the blades to spin and, in the process, capture the energy. The energy captured is then transmitted through the shaft to an embedded generator that converts the energy to electricity. The electricity generated is then transferred to a transformer which finally transmits it to the grid. Wind energy has been used for centuries until the advent of the fossil trio, which relegated it to the background. However, following the world's renewed interest in renewables, to combat fossil fuels externalities, wind energy is back to provide negligible zero-emissions clean energy for electricity generation which can be supplied to remote areas [2].

The technology can be deployed either onshore or offshore with the onshore wind as the current most economical renewable energy technology used in energy generation. Offshore wind projects are capital intensive compared to land-based ones. One advantage of offshore wind projects is that, given their position in the sea, they benefit from high wind speed and are able to harness wind energy better than their land-based counterparts [3].

Cameroon is endowed with sufficient RES, which includes wind energy. Wind energy speed ranges between 8.4 to 9.9 m/s [4]. At this juncture, it is worth stating that wind power does not feature in the energy mix of Cameroon because initially, poor feasibility studies gave wind speed to be low, thereby minimising the chances of exploring and exploiting it. [5] But due to improvement in technology in measuring wind speed, it has been discovered that there is much prospect relating to harnessing it, especially along the coastlines. Additionally, wind power is a cost-effective energy source in many parts of the world, though it has to compete with other sources in some regions. However, research is effectively levelling the cost for both onshore and offshore. Another advantage is that it is a domestic energy source providing unlimited opportunity to harness it locally.

Though wind energy provides clean energy and has the potential to shore up the ES of the country, there are some problems associated with its generation and

consumption. The challenges with wind power are, for instance, some viable locations for wind farms are situated in challenging remote areas, which makes harnessing it difficult and expensive. Additionally, a wind energy developer would have to spend a lot of funds on wind power projects; such projects are capital intensive and expensive. [6] Wind energy generation cannot be said to be zero carbon emission-free. Wind turbine is manufactured from different material and the processes leading to its construction involve the use of energy which does not come from renewable sources, and therefore technically it cannot be said to be emission-free. The offshore turbines have also caused some obstructions to aquatic life and disturbed their natural habitat.

Wind farms have also been criticised for their negative effect on birds through the loss of nesting, feeding grounds, roosting, displacement through disturbance and even survival as the blades kill many especially migrating birds. [7] However, the impact of wind turbines is minor if compared to other energy sources; Sovacool estimated that conventional power stations (fossil fuels) kill twenty times more birds than wind turbines per GWh. [8] Onshore wind farms occupy vast hectares of arable land which could otherwise be used for agricultural purposes thus posing food security concerns.

2.2. Solar Energy

Solar energy is sunlight converted into different forms of usable energy. The following are the established solar technologies in use, solar photovoltaic (PV), high-temperature solar thermal electricity and solar heating and cooling. [9] Photovoltaic solar energy involves the direct conversion of solar radiation to electricity. A PV system comprises several solar cells that can focus sunlight and convert it into electricity. In Cameroon, PV is popularly called solar panel. The design is suited for installation on rooftops and positioned in a way that the cells can maximise sunlight to generate solar power.

The total global solar PV installed capacity reached 825 GW at the end of 2021, according to the International Renewable Energy Agency (IRENA). [10] Grid-connected solar PV total installed capacity reached

²Manwell J.F. *et al.*, (2009), *Wind Energy Explained: Theory, Design and Application*, 2nd ed, Macmillan Publishers, London, p.7.

³ International Energy Agency, 'Wind' (IEA, 12 December 2022) <<https://www.iea.org/fuels-andtechnologies/wind>> last accessed 1 July 2026 at 3:00pm.

⁴ Ibid.

⁵ Ibid.

⁶ Ibid.

⁷ Catherine, B. *et al.*, (2009) 'Positive Planning for Onshore Wind – Expanding Onshore Wind Energy

Capacity while Conserving Nature', A Report by the Institute for European Environmental Policy;

⁸ Benjamin K.S. (2009), 'Contextualising Avian Mortality: A Preliminary Appraisal of Bird and Bat Fatalities from Wind, Fossil-Fuel, and Nuclear Electricity' 37 *Energy Policy* 2241 <<https://doi.org/10.1016/j.enpol.2009.02.011>> last accessed 2 July 2026 at 6:45pm.

⁹ International Energy Agency, 'Solar' (IEA, 15 December 2022) <<https://www.iea.org/fuels-andtechnologies/solar>> accessed 14 July 2026 at 8:34pm.

¹⁰ Ibid.

143.9 MW, and this is coming from VRA, Meinerger, Beijing Xiaocheng Company (BXC), Bui, and Distributed solar PV solar plants. [11] These solar plants occupy large portions of arable land, for example, BXC is situated on a hundred-acre parcel of land and costs about US\$30m. [12]

2.3. Electrical Energy

Electrical energy is the energy transferred or stored by electricity. This energy is transferred from one system to another by the movement of charges. It is not a true energy like potential energy, but an energy vector, a means of transferring energy in the same way as heat or work. The systems most likely to supply energy by electrical transfer are the alternators found in virtually every electricity-generating plant, or chemical systems such as batteries. [13] Systems that transform energy from electricity are, for example, electrical resistors motors, lamps and other electro technical or electronic systems. [14] Electrical energy is transported by means of an electrical conductor, for example, a metal or an ionic solution. Electrical energy cannot be stored in large quantities without being transformed. [15] Only small quantities of electrical charges can do so, in the form of so-called electrostatic energy (or electrostatic potential energy), for example in capacitors and supercapacitors. [16] It should be pointed out that electric power is fast and powerful. It is easy to use. It can be stored for long periods. It is inexpensive to run.

2.4. Hydroelectric Power

Hydropower or waterpower is the power derived from falling water or fast current water that produces energy that can be harnessed for electricity. The flowing water produces energy that is captured to generate electricity, known as hydroelectric power or hydropower. Hydropower is a form of RE that is obtained from running water and is able to convert it into electrical power. This technology has been around for centuries, and the global annual hydropower generation capacity was 4418 TWH in 2020.[17] Hydropower is the world's largest RE source that is used for electricity generation, and it plays a vital role in GHG emissions reduction.[18] Hydropower is a mature technology that is still evolving; hydropower projects can be classified according to the way they harness water to generate power as follows: Reservoir, in this the project collects water for storage which is released through a power plant for the generation of electricity; it provides for flexibility

of electricity generation according to the dictates of demand and reduces the dependence on the variability inflows.[19] Pumped storage, in this the project pumps water from a lower-level reservoir to a higher-level reservoir for release via a power plant during peak demand and Run-of-river is a project that harnesses energy for electricity generation from a flowing river, with limited storage capacity.

After independence, Cameroon built hydroelectric dams and since the construction of these dams, the country relied on them for decades for power until the early 1990s, when the rainfall pattern changed, and this affected power generation and consumption. After that, however, these dams still supply the country's electricity needs and are still part of the generation mix. The benefits of hydropower cannot be over-emphasised as humans have harnessed the energy from running rivers for over centuries to cater for their energy needs. Hydropower supplies about 16% of the world's electricity requirements. [20] Hydro has a 5.6% share in the energy mix, and the grid electricity generation mix has a 34.1% share, according to energy statistics. What are the advantages and disadvantages of hydropower? Once the dam has been built, the flowing water, which is unrestricted, converts the current to energy. [21]

This source is renewed by rainfall and sometimes snow in some regions, and the energy generated is described as clean and carbon-free. The plants can generate and supply large quantities of cheap electricity, and the plants can be adjusted relatively easily according to demand by controlling how water flows through the turbines. [22] Hydropower dams can also be used for irrigation to cultivate crops all year round without depending on the rainfall pattern of the locality. Also, dams can be used to store water during the rainy season and during floods for use during the dry season and in times of scarcity. However, the large hydropower dams have wreaked havoc and disrupted the rivers' ecosystems and the riparian communities, and thereby harming wildlife and displacing the residents and causing an ecological disaster that has completely changed the area. [23]

Hydropower plants can also bring about low dissolved oxygen levels in the water. This situation is harmful to aquatic life in the river. For these reasons, the Cameroonian government is trying to beef up and has

¹¹ Ibid.

¹² Ibid.

¹³ Akizu, G. (2018), «Decoupling between Human Development and Energy Consumption within Footprint Accounts 202 Journal of Cleaner Production 1145.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ International Energy Agency, 'Hydropower' (IEA, 12 December 2022) <[https://www.iea.org/fuelsand-](https://www.iea.org/fuelsand-technologies/hydropower)

[technologies/hydropower](https://www.iea.org/fuelsand-technologies/hydropower)> last accessed 21 October 2024 at 4:45am.

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ Madhumitha, J. (2022), op.cit.

²¹ Ibid.

²² Ibid.

²³ Richard, L.O and Williams, R. (2022), Renewable Energy Sources for Development, Allen Lane, London, p.37.

encouraged mini hydropower dams and has legislated in favour of these dams to the neglect of large hydropower dams. As noted above, the devastation dams have caused saddled governments with huge debts in terms of repairs and re-settling of displaced people. It is envisaged that the hydropower dams would generate carbon-free electricity. However, the recent discovery that decaying organic material found in the reservoirs emits methane which is one of the greenhouse gases that contributes to global warming, undermines the benefits of hydropower dams. [24] However, this notwithstanding, it can be argued that the environmental impact of hydroelectric dams can be attenuated. This impact would still be very minimal compared to the burning of fossil fuels. Therefore, the mitigation of the impact of dams on biodiversity cannot be wholly ameliorated. However, when there is an understanding between the stakeholders, it can lead to an effective way of managing and reducing the impact.

Nevertheless, contrary to the much-highlighted negative effects on fish life, Clemons has intimated that the flooding that follows the spillage of the dam indeed aids the fish to move into the flood plains to feed and breed, which has instead led to the boosting of fish populations. [25] Furthermore, floods replenish groundwater stocks and wetlands and naturally fertilises farmland and increase the fertility of the soil, which benefits nearby farmers. [26] According to EIA requirement, any project such as a hydro dam needs to undergo an environmental impact assessment to identify any issue of concern from the very beginning of the project. If any issues are identified, steps can be taken to mitigate them before the project is executed.

2.5. Thermal Energy

Calorific or thermal energy is a form of energy supplied by a difference in heat. [27] On our own scale, it is the form of energy that comes into play when temperature varies, or when a material changes state (melting of ice, evaporation of water evaporation). It can be transferred from one person to another without being transformed into another form of energy (heat conduction). It can also be converted into mechanical

energy, in a turbine, a steam engine or aircraft jet engine. [28]

2.6. Biomass Energy

Through photosynthesis, energy is stored in biomass, an energy source for human consumption. Biomass resources are diverse, and there is a high volume of consumption of one of the categories, fuelwood, in developing countries, especially in Asia. This category is consumed in the forms of firewood and charcoal. Other forms include forestry and crop residues, agro-industrial and municipal wastes. Biomass can also produce liquid fuels, for example, ethanol, methanol, vegetable oils, including biogas produced by anaerobic respiration, which is common in India and China. [29] Cameroon's energy use comes from biomass which is the primary energy consumed in most households in the country in the forms of firewood and charcoal. [30]

These forms are used for cooking and heating. Many small and medium-sized enterprises use biomass for bakery, fish smoking, brewing of alcoholic drinks, coffee and tea drying, and tobacco curing. [31] If biomass is exploited sustainably, it can be converted into modern energy carriers that can be described as clean with fewer carbon emissions. When biomass is harvested near where it is consumed, its economic benefits can be maximized, and this is why it is popular among rural users. Bioenergy has the potential to mitigate GHG emissions if the resources are exploited in a sustainable way using efficient bioenergy systems. [32] The sustainable use of bioenergy can make a significant improvement to rural economic development, thereby enhancing energy development and helping to reduce environmental impact. [33]

Biomass accounted for a huge domestic energy supply in 2019. [34] It is relatively inefficient in generating energy compared to other forms of RES such as solar and wind. Some researchers have found it challenging to comprehend how biomass has come to be classified as a renewable fuel because it is seen to have features similar to fossil fuels, such as odours and GHG emissions. [35] Carneiro and Ferreira have identified

²⁴ Ibid.

²⁵ Karlie, S.C. (2009), *Hydroelectric Dams: Transboundary Environmental Effects and International Law*, Florida State University Law Review 487.

²⁶ Ibid.

²⁷ Scheer, H. (2007), *Energy Autonomy: The Economic, Social and Technological Case for Renewable Energy*, 4th ed, Royal Press, New York, p.45.

²⁸ Ibid.

²⁹ Richard L. Ottinger and Fred Zalzman, *Legal measures to promote renewable and energy efficiency resources in* Adrian J. Bradbrook and Richard L. Ottinger (eds), *Energy Law and Sustainable Development* (IUCN, Gland, Switzerland and Cambridge, UK 2003

³⁰ Twidell J.W and Weir, A.D. (2006), op.cit.

³¹ Stephen, K and Timothy, R. (2017), *Renewable Energy Technologies in Africa*, Oxford University Press, Oxford, p.22.

³² Ibid.

³³ Helena, C. (2011), 'Bioenergy' in Ottomar Edenhofer, Ramon Pichs Madruga, and Youba Sokona (eds.), *Renewable Energy Sources and Climate Change Mitigation* (Special Report of the Intergovernmental Panel on Climate Change (Cambridge University and New York 2011).

³⁴ Ibid.

³⁵ Lorraine, W and Upham, P. (2003), *Public Responses to Climate Change and Low Carbon Energy*, Routledge, New York, p.95.

some environmental impact of biomass which includes emissions from the movements of vehicles used in the process of production, changes in soil fertility, and the use of pesticides and fertilisers during crop production. [36] However, some writers are of the view that good land and forest management techniques can mitigate the environmental side effects. [37]

Additionally, trees in the forest, through the carbon cycle, use carbon to grow and help capture carbon for very long periods of time. However, biomass consumption undermines this process as there are only fewer trees left to capture the carbon. The use of biomass affects tree stocks, and in some cases, woodlots are cultivated for traditional biomass purposes. These woodlots are grown for traditional biomass consumption and take up fertile lands that would otherwise be used to cultivate food crops. It can further be observed that biomass does nothing to tackle the central issue of carbon dioxide accumulation in the atmosphere, which may have some dire consequences for biodiversity. The burning of biomass leads to the release of a lot of chemical pollutants into the atmosphere causing immense pollution. [38] The combustion of biomass also causes indoor pollution, which is a health risk to many consuming it, leading to the deaths of millions of people. [39]

The burning of crop residues as a fuel brings negative consequences on biodiversity by removing vital nutrients from the soil, thereby reducing the organic matter composition, which makes the soil lose its water-holding capacity and fertility. [40] On the other hand, bioenergy, which excludes traditional biomass though good and serves as a renewable source, competes for fertile lands. As a result, fertile lands that could otherwise be used to cultivate food crops are instead used for the cultivation of biofuel crops, which poses a threat to world food security. [41] Biomass has many positives as a renewable source which does not impact the environment. However, the unsustainable consumption of the resource, both traditional biomass and biofuel, invariably lead to the erosion of the net positive GHG emission mitigating impact it makes. Given this, a

balance needs to be struck between its sustainable use. [42] Thus, a combination of adaptation measures with biomass exploitation and use can bring about sustainable opportunities for forests, crops, and bioenergy.

However, the two countries have, since the publication by Sims, Rogner, and Gregory, increased their biomass consumption. It is, however, not clear whether plant and animal waste are classified as "biomass" under the Cameroon's Electricity law. It would be helpful if this determination is made. Even though animal and plant waste are still considered waste, the issue is that the carbon emissions that come with them are relevant when the waste is used for energy generation. Unfortunately, the law is silent on it.

In Cameroon, people engaged in biomass production business derive their sustenance from it which provides jobs for them. The main challenge in biomass energy use and supply in Ghana has to do with how to reverse the decline in the availability of wood fuel resources in the country. Again, how to adopt new sustainable approaches in its production and use by bringing about improvement in the efficiency of generation and consumption. Whilst policy is focused on improving the production of biomass and uses in the short-term, the increase in the regeneration and substituting fuel in the medium to long term and eventually shifting from biomass to other sustainable alternative energy sources should be the main goal.

2.7. Ocean Energy

Ocean energy is an important and promising renewable energy for the future. Even though extensive technology development and demonstrations have occurred in the areas of ocean thermal energy, wave energy and tidal energy over the last 40 years, commercial plants based on these technologies are very slow in coming up because of the high capital costs. [43] In recent years, due to increase in the fossil fuel costs, renewable energies such as solar photo voltaic systems and wind energy systems have become cost competitive. [44] Ocean energy systems are likely to become cost competitive in a decade or so, especially for

³⁶ Patricia, C.F. (2012), The Economic, Environmental and Strategic Value of Biomass, 44 Renewable Energy 17-22 < <https://doi.org/10.1016/j.renene.2011.12.020> > last accessed 12 July 2026 at 7:37pm.

³⁷ Rosa, M. *et al.*, (2008), Assessment of the Externalities of Biomass Energy, and a Comparison of its full Costs with Coal, 14 Biomass and Bioenergy 469-478 < [https://doi.org/10.1016/S0961-9534\(98\)00016-6](https://doi.org/10.1016/S0961-9534(98)00016-6) > last accessed 20 July 2026 at 6:56pm.

³⁸ Ibid.

³⁹ World Health Organisation, 'Household air pollution' (WHO, 28 November 2022) <<https://www.who.int/news-room/fact-sheets/detail/household-air-pollution-and-health>> last accessed 16 July 2026 at 11:00pm.

⁴⁰ Ibid.

⁴¹ Green Facts, 'Liquid Biofuels for Transport Prospects, risks and opportunities' <<https://www.greenfacts.org/en/biofuels/1-3/4-environmental-impacts.htm>> last accessed 10 July 2026 at 5:34pm.

⁴² Ibid.

⁴³ Thorpe, T.W. (1999), An overview of wave energy technologies states, performance and costs Proc. Conference on Wave power: Moving towards commercial viability 30 November, Institute of Mechanical Engineers, Westminster, London, p.90.

⁴⁴ Ibid.

remote islands and coastal areas. Ocean energy, which is an indirect form of solar energy, is a very large resource. [45] The development and demonstration of ocean energy technology has been suffering all along because of high cost of plant structures and offshore infrastructure. The sharp increase in the oil prices has highlighted, once again, the need to develop large-scale renewable energies including ocean energy. [46] The ocean offers five main forms of energy conversion, each with the potential to generate electricity at significant scale include: wave energy, ocean currents, ocean thermal energy conversion, salinity gradient and tidal energy. [47]

3. Legislative Instruments at the International Level

At this section, focus shall be tilted at analyzing basically international legislative instruments having a nexus with energy development either directly or tacitly. In this perspective therefore, it shall be of prime importance to examine the soft law and hard law international legislative instruments respectively.

4. Soft Law Instruments

The concept of soft law developed post-World War II (WWII) in an attempt to classify international instruments that lack the elements of international law. [48] The definitions of soft law are generally based on the lack of a legal obligation to obey an instrument in that the instrument is not in treaty form or part of customary law. Soft law can take a variety of forms: governmental recommendations, guidelines, communications or notices, processes of international organisations (such as their codes of conduct, guidelines and recommendations), explanatory documents accompanying treaties or declarations of intergovernmental conferences and UN resolutions among others. [49]

Notably, soft law is not regulated either by customary law or the Statute of the International Court of Justice, which provides for traditional sources of international law. [50] Soft law norms, the content of which may be contested, play an important role in the development of hard law. It also plays an important role in the integration and influence at the intersection of international environmental and energy law. [51] The growing importance of soft law, however, challenges the formal sources of international law as articulated in articles 38(1)(a)–(c) of the Statute of the International Court of Justice. The principle of state sovereignty, for example, is being weakened by states entering into economic and trade agreements that affect domestic choice and international regulation of activities, mandating compliance with consensual obligations. [52] This represents a gradual but significant development towards responsible management of natural resources. Soft law is not without its critics. It is often seen as a product of states maximising their interest, a place-maker for justice or as a vehicle for the regulation of the international community, among others. [53] To this end, soft law may be required to assist increased energy development, which may subsequently become the objectives of binding energy laws.

4.1. Stockholm Declaration on Human Environment 1972

It was adopted at the end of the work of the United Nations Conference held in Stockholm from June 5 to 16, 1972. It is unanimously considered as the founding act of international environmental law. The Stockholm Declaration of Principles for the Preservation and Enhancement of Human Development contains 26 non-binding statements of principles for international actions. The Stockholm Declaration consists of 26 principles preceded by a preamble. It gives an important place to man, placing him at the center of nature and

⁴⁵ Ravindran, M. (2007), op.cit.

⁴⁶ Ibid.

⁴⁷ Ibid.

⁴⁸ Soft law is an umbrella concept that includes a variety of ideas. There is no universally acceptable definition for soft law and it is generally used to refer to rules that are not inherently binding, not founded on a legal basis and not identified with any particular actors responsible for its adoption, but which may have practical and legal effects. For the purpose of this research, soft law refers to non- legally binding obligations or norms and includes principles, policies and conference resolutions adopted by non-state actors. Other forms of soft law include formal exchanges of premises through diplomatic correspondence, formal written non-treaty agreements (for example pacta de contrahendo, non-self-executing treaty provisions).

⁴⁹ Korkea-Aho (2009), Maastricht Journal of European and Comparative Law 274-276.

⁵⁰ Article 38(1) of the Statute of the International Court of Justice provides the formal sources of international law. It provides: “the Court, whose function is to decide in accordance with international law such disputes as are submitted to it, shall apply (a) international conventions, whether general or particular, establishing rules expressly recognized by the contesting states (b) international custom, as evidence of a general practice accepted as law (c) the general principles of law recognized by civilized nations (d) subject to the provisions of Article 59, judicial decisions and the teachings of the most highly qualified publicists of the various nations, as subsidiary means for the determination of rules of law”. See also Weiss “Conclusions: Understanding Compliance with Soft Law” 536-537.

⁵¹ Bruce, F. (2013), Melbourne Journal of International Law 12.

⁵² Ibid.

⁵³ Ibid.

environmental concerns. [54] It should be pointed out that; the Stockholm Declaration of 1972 includes several principles that relate to energy development and the environment. In this connection, therefore, it provides that development is needed to improve the environment, and environmental policy should not hinder development. [55]

It equally requires that non-renewable resources should be used in a way that prevents exhaustion and ensures that benefits are shared by all. [56] The Stockholm Declaration equally focused on the need to maintained, restored and produced renewable resources. [57] Still in line with energy development, the Stockholm Declaration dealt with pollution, environmental research and international cooperation. [58] The Declaration equally treated issues linked with nuclear weapons. [59] The principles having a linked with energy development

clearly demonstrate that the Declaration had a visionary approach. The Stockholm Declaration marked the beginning of a dialogue between developed and developing states on the relationship between economic growth, environmental issues, and wellbeing. But, so far, energy development is still on a noise delve as far as Cameroon is concerned. Another important United Nations Declaration on New and Renewable Sources of Energy, 1981.

4.2. United Nations Declaration Declaration on New and Renewable Sources of Energy, 1981

In 1981 RE was directly addressed for the first time as an energy source that promotes sustainable development through the intergovernmental policy of the UN (United Nations Conference on New and Renewable Sources of Energy) that ended up with a Declaration. [60] Among other things, the Conference underscored

⁵⁴ Principle 1 proclaims the human right to the environment: "man has a fundamental right to liberty, equality and satisfactory living conditions, in an environment the quality of which enables him to live in dignity and well-being".

⁵⁵ Principle 7 provides that "States shall take all possible steps to prevent pollution of the seas by substances that are liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea". Principle 11 proclaims that "The environmental policies of all States should enhance and not adversely affect the present or future development potential of developing countries, nor should they hamper the attainment of better living conditions for all, and appropriate steps should be taken by States and international organizations with a view to reaching agreement on meeting the possible national and international economic consequences resulting from the application of environmental measures". Principle 15 reveals that "Planning must be applied to human settlements and urbanization with a view to avoiding adverse effects on the environment and obtaining maximum social, economic and environmental benefits for all. In this respect projects which are designed for colonialist and racist domination must be abandoned".

⁵⁶ Principle 5 stipulates that "The non-renewable resources of the earth must be employed in such a way as to guard against the danger of their future exhaustion and to ensure that benefits from such employment are shared by all mankind".

⁵⁷ Principle 3 holds that "The capacity of the earth to produce vital renewable resources must be maintained and, wherever practicable, restored or improved".

⁵⁸ Principle 7 states that "States shall take all possible steps to prevent pollution of the seas by substances that are liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea". Principle 11 is to the effect that "The environmental policies of all States should enhance and not adversely

affect the present or future development potential of developing countries, nor should they hamper the attainment of better living conditions for all, and appropriate steps should be taken by States and international organizations with a view to reaching agreement on meeting the possible national and international economic consequences resulting from the application of environmental measures". Principle 20 provides that "Scientific research and development in the context of environmental problems, both national and multinational, must be promoted in all countries, especially the developing countries. In this connection, the free flow of up-to-date scientific information and transfer of experience must be supported and assisted, to facilitate the solution of environmental problems; environmental technologies should be made available to developing countries on terms which would encourage their wide dissemination without constituting an economic burden on the developing countries". Principle 22 holds that "States shall cooperate to develop further the international law regarding liability and compensation for the victims of pollution and other environmental damage caused by activities within the jurisdiction or control of such States to areas beyond their jurisdiction". Principle 24 proclaims that "States shall cooperate to develop further the international law regarding liability and compensation for the victims of pollution and other environmental damage caused by activities within the jurisdiction or control of such States to areas beyond their jurisdiction".

⁵⁹ Principle 26 States that "Man and his environment must be spared the effects of nuclear weapons and all other means of mass destruction. States must strive to reach prompt agreement, in the relevant international organs, on the elimination and complete destruction of such weapons".

⁶⁰ The United Nations Conference of New and Renewable Sources of Energy, held in Nairobi, Kenya in August 1981. G.A Res 36/193, UN Doc. A/RES/36/193. Lyster and Bradbrook Energy Law and the Environment 66, Hirschl 2009 Energy Policy 4408-4410.

the importance of developing new and RE sources of energy to contribute to meeting the requirements for continued economic and social development and called for a shift from the present international economy based primarily on fossil fuel to one based on new and RE sources of energy. [61] Though States, Cameroon inclusive were urged to change their energy mix, it ultimately remains a matter of sovereign choice. [62] In response, the UN General Assembly established the Committee on the Development and Utilisation of New and Renewable Sources of Energy. [63] Nonetheless, the task of RE assessment and planning, research and development, transfer, adaptation and application of mature technologies, information exchange, education and training as set out in the programme of action, was never realised. Noting its failure, the Committee at its sixth session stated that ten years had essentially been lost following its establishment since there had been no political resolve to develop and increase RE access as an alternative to the hydrocarbons powering all the major economies at that time. [64] Looking at the primary energy source of many states, the Committee called for a strong “international institution” to give RE access the necessary visibility and weight and recommended the establishment of an international RE agency. [65]

The United Nations Conference on New and Renewable Sources of Energy is regarded as the conceptual milestone for RE as RE was addressed for the first time specifically at this forum. While RE as such was as new at the time, the conference recommended the establishment of a RE intergovernmental body.

4.3. Rio Declaration on Environment and Development 1992

In 1981 RE was directly addressed for the first time as an energy source that promotes sustainable

development through the intergovernmental policy of the UN (United Nations Conference on New and Renewable Sources of Energy) that ended up with a Declaration. [66] Among other things, the Conference underscored the importance of developing new and RE sources of energy to contribute to meeting the requirements for continued economic and social development and called for a shift from the present international economy based primarily on fossil fuel to one based on new and RE sources of energy. [67] Though States, Cameroon inclusive were urged to change their energy mix, it ultimately remains a matter of sovereign choice. [68] The Conference recommended that an intergovernmental body be established to implement and monitor the action on new and renewable sources of energy. In response, the UN General Assembly established the Committee on the Development and Utilisation of New and Renewable Sources of Energy. [69] Nonetheless, the task of RE assessment and planning, research and development, transfer, adaptation and application of mature technologies, information exchange, education and training as set out in the programme of action, was never realised. Noting its failure, the Committee at its sixth session stated that ten years had essentially been lost following its establishment since there had been no political resolve to develop and increase RE access as an alternative to the hydrocarbons powering all the major economies at that time. [70] Looking at the primary energy source of many states, the Committee called for a strong “international institution” to give RE access the necessary visibility and weight and recommended the establishment of an international RE agency. [71]

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⁶¹ A/RES/36/193. Lyster and Bradbrook Energy Law and the Environment 66. See also Kaime and Glicksman 2015 Fordham International Law Journal 1410.

⁶² Lyster and Bradbrook Energy Law and the Environment 66. Hirschl 2009 Energy Policy 4408–4410

⁶³ Immediate Implementation of the Nairobi Programme of Action for the Development and Utilization of New and Renewable Sources of Energy, A/RES/38/169. Hirschl 2009 Energy Policy 4408–4410.

⁶⁴ Committee on the Development and Utilization of New and Renewable Sources of Energy, Implementation of the Nairobi Programme of Action for the Development and Utilization of New and Renewable Sources of Energy, A/AC.218/1992/5/Rev.1. Hirschl 2009 Energy Policy 4408–4410.

⁶⁵ Provision of institutions dealing with RE specifically as a gap that should be considered when one aims to increase access to RE at international, regional, sub-regional or national levels.

⁶⁶ The United Nations Conference of New and Renewable Sources of Energy, held in Nairobi, Kenya in August 1981. G.A Res 36/193, UN Doc. A/RES/36/193.

Lyster and Bradbrook Energy Law and the Environment 66, Hirschl 2009 Energy Policy 4408–4410.

⁶⁷ A/RES/36/193. Lyster and Bradbrook Energy Law and the Environment 66. See also Kaime and Glicksman 2015 Fordham International Law Journal 1410.

⁶⁸ Lyster and Bradbrook Energy Law and the Environment 66. Hirschl 2009 Energy Policy 4408–4410

⁶⁹ Immediate Implementation of the Nairobi Programme of Action for the Development and Utilization of New and Renewable Sources of Energy, A/RES/38/169. Hirschl 2009 Energy Policy 4408–4410.

⁷⁰ Committee on the Development and Utilization of New and Renewable Sources of Energy, Implementation of the Nairobi Programme of Action for the Development and Utilization of New and Renewable Sources of Energy, A/AC.218/1992/5/Rev.1. Hirschl 2009 Energy Policy 4408–4410.

⁷¹ Provision of institutions dealing with RE specifically as a gap that should be considered when one aims to increase access to RE at international, regional, sub-regional or national levels.

was as new at the time, the conference recommended the establishment of a RE intergovernmental body. The Committee on the Development and Utilisation of New and Renewable Sources of Energy was eventually established—a body responsible for promoting and monitoring the development and overall actions with regard to new and RE sources of energy, a vision that would later become synonymous with the SDGs. [72] Notably, an institutional body to manage RE activities remains an important gap that needs to be addressed when aiming to promote increased RE access, be it at the international, regional or sub-regional levels.

4.3. Rio Declaration on Environment and Development 1992

The two-week United Nations Conference on Environment and Development (UNCED) was held in Rio de Janeiro, Brazil from 3–14 June 1992. However, the Conference adopted three influential non-binding instruments namely: The Rio Declaration on Environment and Development (Rio Declaration), Agenda 21, Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of all types of forest. It should be pointed

out that the Rio Declaration included principles that addressed the relationship between the energy development and the environment. In this connection, therefore, it placed human beings at the centre of sustainable development. [73] It considered sustainable development as a pleasant aspect for energy development.[74]

5. Hard Law Instruments

Unlike soft laws, hard laws are legally binding and confers stateparties to respect them comprehensively. This is so because hard laws target precise issues which most often is considered to be a threat to humankind.

5.1. The United Nations Charter 1945

The Charter of the United Nations, 1945, initially did not place any obligation with regard to energy development. [75] The importance of energy could be inferred from a broad and general perspective under Articles 1, 55 and 66 of the Charter respectively. [76] Accordingly the UN established over 40 programmes, [77] providing about US\$16 billion in funding, with US\$4 billions specifically allocated to RE.

⁷² After the United Nations Conference of New and Renewable Sources of Energy, 1981, RE expansion and access to express features in sustainable development initiatives such as the Brundtland Commission, the UNFCCC and its Kyoto Protocol, Johannesburg Plan of Implementation and subsequently the SDGs.

⁷³ Principles 1 states that “Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature”.

⁷⁴ Principle 3 holds that “The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations”. Principle 6 is to the effect that “The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority. International actions in the field of environment and development should also address the interests and needs of all countries”. Principle 15 proclaims that “In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation”. Principle 16 provides that “National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.

⁷⁵ Article 1(1) (3) of the Charter of the United Nations, 1945.

⁷⁶ Articles 1 of the Charter of the United Nations, 1945. The Charter has as objective to “maintain international peace and security, and to that end: to take effective collective measures for the prevention and removal of threats to the peace, and for the suppression of acts of aggression or other breaches of the peace, and to bring about by peaceful means, and in conformity with the principles of justice and international law, adjustment or settlement of international disputes or situations which might lead to a breach of the peace. 55 (the United Nations shall promote: (a) higher standards of living, full employment, and conditions of economic and social progress and development, (b) solutions of international economic, social, health, and related problems; and international cultural and educational cooperation and (c) universal respect for, and observance of, human rights and fundamental freedoms for all without distinction as to race, sex, language, or religion. Article 66 provides, the Economic and Social Council shall perform such functions as fall within its competence in connexion with the carrying out of the recommendations of the General Assembly. It may, with the approval of the General Assembly, perform services at the request of members of the United Nations and at the request of specialized agencies and it shall perform such other functions as are specified elsewhere in the present Charter or as may be assigned to it by the General Assembly”.

⁷⁷ UN energy-related programmes include the Food and Agriculture Organization (FAO), Global Environment Facility (GEF), International Atomic Energy Agency (IAEA), United Nations Development Programme (UNDP), United Nations Energy Africa (UNEA), United Nations Environment Programme (UNEP) among others.

[78] In 2004, the UN also established UN-Energy. [79] Being the first attempt within the UN to take a broader view on energy issues, UN-Energy aims to ensure coherence within the UN system and provides a multidisciplinary response in the field of energy, including RE. [80]

As a coordinating body, UN-Energy has limited formal power and influence, but it also has the advantage of being better at adapting to changes due to its small organisation and limited bureaucracy. [81] According to a UN-initiated review of UN-Energy, there is still a wide range of views among its members on what is important, as well as which interventions and activities are appropriate to meet the global RE expansion. Gupta and Ivanova state that, "the mandate on energy issues are spread among many UN agencies and that no clear message is sent to the global community on global energy policy".[82] UN- Energy also does not provide for intergovernmental RE cooperation, a role fulfilled by the IRENA.[83] Though the UN General Assembly can only make recommendations, it can also provide significant guidelines on issues. [84] While most of its instruments and decisions are not legally binding, their influence on promoting RE development spurred RE into the SDGs. [85] While the measures to increase access to RE are commendable, no provision for binding targets and measures to achieve them were provided for. It is therefore necessary to discuss the international climate change regime in order to find out if the above mention limitations to increase RE access are addressed.

5.2. The Abuja Treaty 1991

Establishing the African Economic Community (AEC), the Abuja Treaty has as objective to promote economic, social and cultural development and the

integration of African economies in order to increase economic self-reliance and self-sustained development. [86]

Recognising the role of energy in realising an AEC, the Abuja Treaty calls on AU member states to cooperate in the harmonisation of policies and programmes in the field of energy.[87] For this to be achieved, member states are legally obliged to ensure the effective development of the continent's energy and natural resources [88] promote the development of new and RE in the framework of the policy of the diversification of sources of energy,[89] harmonise national energy plans and articulate a common energy policy,[90] and collectively solve the energy problems (particularly those related to energy transmission, the shortage of skilled technicians, and the insufficiency of the financial resources available for the implementation of the energy projects of member states) among other problems. [91] These activities directly relates to cooperation in the development of new and RE which must take place in accordance to the provisions of a legal energy framework as a means of diversification of energy mix. [92]

5.3. United Nations Framework Convention on Climate Change 1992

Concluded in Rio in 1992, the UNFCCC or "Climate Convention" entered into force on March 21, 1994. Cameroon signed it on June 14, 1992 and ratified it on October 19, 1994. In terms of the Fifth Report of the Inter-governmental Panel on Climate Change anthropogenic GHGs) emissions [93](for example, the energy sector, transport and industry, among others) are the dominant causes of observed warming since the mid-

⁷⁸ Lafontaine, H *et al.*, (2022), op.cit.

⁷⁹ UN-Energy was established in response to the World Summit on Sustainable Development (WSSD) in Johannesburg to support the transition to sustainable energy. It is formed as a non-hierarchical network mechanism aiming at connecting actors within the UN with each other as well as connecting UN agencies with key external stakeholders. In the same year, UN-energy Africa (UNEA) was established as a sub programme focusing specifically on the African context.

⁸⁰ UN-Energy is a lean body with a Secretariat provided by the Department of Economic and Social Affairs (DESA) with few staff members. It possesses limited independent financial resources and depends largely on contributions from its 21 UN member agencies in response to the WSSD, and support countries in their transition to sustainable energy.

⁸¹ Schubert, G. (2013), *Ecology and Society*, OUP, Oxford, p.2.

⁸² Gupta T. and Ivanova, k. (2016), op.cit.

⁸³ Ibid.

⁸⁴ Article 10 of the Charter of the United Nations. The Charter of the United Nations was signed on 26 June

1945, in San Francisco, at the conclusion of the United Nations Conference on International Organisation, and came into force on 24 October 1945. Article 10 provides "the General Assembly may discuss any questions or any matters within the scope of the present Charter or relating to the powers and functions of any organs provided for in the present Charter, and, except as provided in Article 12, may make recommendations to the members of the United Nations or to the Security Council or to both on any such questions or matters".

⁸⁵ Ibid.

⁸⁶ Article 4 (1) (a) of the Abuja Treaty. See paragraph 5.2.

⁸⁷ Article 54 (1) of the Abuja Treaty.

⁸⁸ Article 54 (2) (a) of the Abuja Treaty.

⁸⁹ Article 54 (c) of the Abuja Treaty.

⁹⁰ Article 54 (d) of the Abuja Treaty.

⁹¹ Article 54 (e) and (f) of the Abuja Treaty.

⁹² Such a framework is yet to be adopted. See Article 54 (c) Abuja Treaty.

⁹³ Anthropogenic GHG gas emissions refer to human induced emissions. See IPCC 2014 Synthesis Report www.ipcc.ch.

20th century. [94] Noting the contribution of human activities in causing climate change, countries highlighted the need for urgent action. In 1992, states adopted the UNFCCC [95] which entered into force in March 1994. [96] It is interesting to note that although the UNFCCC is considered to be of historical significance as the first global convention that recognises the need to reduce GHG emissions; this Convention marked an international acknowledgment that energy production and consumption from fossil fuels, among other things, are sources of climate change and part of the solution for adaptation and mitigation. [97]

5.4. The African Energy Convention 2001

In line with the mandate of the Abuja Treaty “the establishment of an adequate mechanism of concerted action and coordination for the collective solution of the energy development problems within the community” [98] and the Lagos Plan of Action the Convention of the African Energy Commission, 2001 (AFREC) was established. Reiterating the commitment to the promotion of socio-economic development of the continent, functions of the AFREC include to assist in the development and utilisation of new and renewable sources of energy, [99] map out energy development policies, strategies and plans based on sub-regional, regional and continental development priorities and recommend their implementation,[100] and to encourage research, development and energy information among member states and among RECs.[101] The functions of the AFREC are to be exercised taking into account the

guiding principles that underpin regional and sub-regional cooperation in the development of new and renewable sources of energy as provided for in Article 3 of the AFREC [102].

The provisions of the legally binding AFREC established, to one extent or another, cooperation among member states in the development of energy frameworks that promote the development of new and renewable sources of energy with the aim of addressing energy challenges on the African continent while taking into account article 3 guiding principle. With clear and implicit provisions on the development of energy sources, the importance of RE in addressing Africa’s energy challenges in Africa is underscored in the provisions of sub-regional as well regional frameworks. Common objectives among both sub-regional and regional frameworks to increase RE access include (1) cooperation and (2) harmonisation of policies in the development of RE resources. It is however important to note that, the legally binding Constitutive Act, the Abuja Treaty and the AFREC do not provide measures which are to be cooperated upon in order for increased RE access to be achieved. RECs and the AU must therefore cooperate and harmonised their energy frameworks taking into account the IRENA RE measures and best international RE practices when aiming to increase RE access in the continent.

⁹⁴ IPCC 2014 Synthesis Report www.ipcc.ch.

⁹⁵ United Nations Framework Convention on Climate Change (1992).

⁹⁶ UN A/RES/43/53. Protection of the Global Climate for Present and Future Generations of Mankind. In 1988, the UNGA acknowledged that climate change is a common concern of mankind precipitating the adoption of the UNFCCC, in 1992.

⁹⁷ In terms of the 2007 IPCC Report, adaptation refers to an adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which demonstrate harm or exploit beneficial opportunities.

⁹⁸ Article 54 (2) (f) Abuja Treaty.

⁹⁹ Article 4(m) AFREC.

¹⁰⁰ Article 4(a) AFREC.

¹⁰¹ Article 4(d) and (e) AFREC. Other functions of the AFREC include; advise and encourage the development of human resources in the energy sector in particular, through training, mobilise financial resources to provide to member states and the RECs with the necessary assistance for the development of their energy sectors, provide technical assistance to member states, Regional Economic Communities and other stakeholders in the African energy sectors and to recommend the use of harmonised standards and procedures in the energy sector.

¹⁰² Article 3 AFREC principles include “(a) development of the use of energy to promote and support rapid

economic and social development, eradication of poverty, combat desertification and improve the standard and quality of life throughout the member states, (b) Cooperation in the area of energy among member states, particularly through joint development of energy resources and identification and promotion of regional and/or sub regional projects, (c) development and utilisation of sustainable and environmentally sound energy, (d) acceleration of the implementation of the Abuja Treaty through the integrated, coordinated and harmonised development and utilization of energy and the development and implementation of energy policies and programmes, (e) promotion of research and development, and the encouragement of transfer of technology in the energy sector, (f) enhancement of integration, collective self-reliance, security and reliability of energy supply among member states, (g) inter-state, sub-regional and regional cooperation in training and development of human resources in the energy field, (h) harmonization of standards and procedures in the energy sector, (i) promotion of trade and technical assistance in energy among member states, (j) promotion of partnership among enterprises and institutions of member states through, inter alia, the creation of favourable conditions for that purpose, (k) equitable cost-sharing in the implementation of this Convention in a spirit of good governance and transparency and (l) peaceful settlement of disputes”.

5.5. The Paris Agreement 2015

Open for signature at the UN General Secretariat between April 22, 2016 and April 21, 2017, the PARIS agreement was signed on the first day by 175 countries including Cameroon. It entered into force on 04 November 2016; 30 days after 72 countries representing around 57% of global greenhouse gas emissions have ratified the agreement, the condition of entry into force requiring at least 55 countries which represent at least 55% of global greenhouse gas emissions.¹⁰³ To date, 136 countries have already ratified it; Cameroon ratified it on July 29, 2016, the United States and China, which together account for almost 40% of global emissions (02), also signed it on April 22, 2016 and ratified it on 03 September 2016.

The Agreement provides for a long-term term temperature goal (below two degree Celsius) for achieving global sustainable development and fostering cooperation to mitigate and adapt measures between the developed and developing countries.[104] This must be done based on common but differentiated responsibilities of states and their respective capabilities in light of their different national circumstances.[105] Additionally, the Paris Agreement clearly acknowledges the role of RE access in achieving universal access to modern energy in developing countries, particularly in Africa, through the enhanced deployment of RE. [106]

Also, Articles 4 and 5 of the Paris Agreement call on states to develop and increase access to RE as part of their nationally determined contributions. Another important theme repeated in the Paris Agreement is the need for recognising the importance of poverty alleviation (which would later become one of the SDGs) as part of the Paris Agreement's integrated approach to address climate change. [107] Increased development and access to RE as provided for by the Paris Agreement not only called for, but also served as impetus for the SDGs. [108]

The Paris Agreement regulates climate change, which is dominantly caused by human activities (especially energy, among others) it does not oblige any of its member states on what they have to do with regard

to RE generation, access and consumption. This situation would likely be better if preventative actions to avert catastrophic climate change and the gap of RE development and access are closed by putting in place RE targets within the climate change regime. Ferrey is of the opinion that the RE development and access has largely been ignored both by the UNFCCC and its KP.[109] While the UNFCCC and its KP promote sustainable development, there is no specific mandate for RE.[110] The inclusion of binding obligations under Articles 4(1)(b)(c) and 4(2)(a) of the UNFCCC, Article 2(1)(a)(iv) of KP [111] and Articles 4 and 6 of the Paris Agreement (clearly identifying RE access as part of the national determined contributions) would increase access to RE and possibly reduce global GHG emissions.[112] Without modification, the existing regime commitment to energy generation issues is likely to prove inadequate to effectively address climate change.[113]

The international energy initiatives of the 1990s (UNFCCC, KP and the ECT) made no clear provisions for increased access to RE. According to Kaime and Glicksman, the 1990s may be characterised as a lost decade, as international law and policy concerning modern energy failed to make headway in acknowledging the role played by RE on increased access to energy, energy poverty and the mitigation of climate change.[114] The period of sustainable development that followed the World Commission on Environment and Development, also known as the Brundtland Commission Report offered better guidance to RE development as an alternative energy source to fossil fuel.[115] The Report underscored the importance of development that meets the needs of present generations without compromising the ability of future generations to meet their needs. [116]

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¹⁰³ To date, 136 countries have already ratified it; Cameroon ratified it on July 29, 2016, the United States and China, which together account for almost 40% of global emissions (02), also signed it on April 22, 2016 and ratified it on 03 September 2016. It shall be important to evaluate the continental sources of environmental law in the next section.

¹⁰⁴ Articles 6(1) (2) and 7(6) (7) of the Paris Agreement.

¹⁰⁵ Article 4(3) of the Paris Agreement.

¹⁰⁶ Preamble of the Paris Agreement.

¹⁰⁷ Articles 2(1), 4(1) and 6(8) of the Paris Agreement.

¹⁰⁸ Ibid.

¹⁰⁹ Ferrey, G. (2013), *The Failure of International Global Warming Regulation*, Federation Press, Newyork, p.68.

¹¹⁰ Articles 2, 3(4) (5) and art 2(1) (a) of the UNFCC and the KP.

¹¹¹ Ibid.

¹¹² Ibid.

¹¹³ Ibid.

¹¹⁴ Ibid.

¹¹⁵ Brundtland Commission Report on Sustainable Development, UN Doc A/42/427, 4 August 1987 annex: Report of the World Commission on Environment and Development: Our Common Future. See also Hirschl 2009 Energy Policy 4408–4410.

¹¹⁶ Report of the World Commission on Environment and Development: Our Common Future. See also Hirschl 2009 Energy Policy 4408–4410.

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