RENEWABLE ENERGY ADOPTION LEADING TO 2030: APPRAISING CHALLENGES OF LOCAL CONTENT REQUIREMENTS AND DISPUTE SETTLEMENT MEASURES

By

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Abstract

Sweeping environmental regulations and international consensus calling for the abandonment of fossil fuels energy due to their deleterious impacts and the use of protective trade measures by States through economic policies to boost renewable energy (RE) generation as part of climate change commitments to reduce GHG emissions leading to the year 2030 has created a void in international investment in RE projects. Barriers and challenges in using local content requirements (LCR) to disqualify international investors from feed-in tariff (FIT) programmes has acted as major barrier to investment in RE generation, with the attendant consequences of conflicting with regional and global trade protection guaranteed under the ECT, GATT/WTO and TRIMS rules. At the crux of this debate is the net increase in investment in technological development and deployment of (RE) inputs globally creating a global trade of about $3 trillion and the impacts of the decisions of the international tribunals in preventing such protectionist measures is key to this paper. This paper will analyze the current attempts to regulate the use of LCR and argue for an acceptable international law precedent in resolving issues relating to the use of LCR in order to fast track the adoption of RE leading to the year 2030 as the energy push moves towards developing nations.

Keywords: Climate Change, Renewable Energy, Local Content Requirements and Dispute Settlement.

Introduction

If there is anything history has won for energy analyst is the fact that conventional energy sources such as coal, crude oil and to some extent natural gas must be replaced, even when they will continue to play major role in the energy mix. What is not certain is how abundant will this alternative source of energy be? Will it have equal or more numerical percentage in terms of availability in meeting energy demands in the future? While these uncertainties looms, statistics reveal that the world population itches close to nine billion,[1] with most people in Africa and Asia lacking access to energy supplies. Hailed as the energy of the future, renewable energy sources (RES) have the ability to replenish itself unlike conventional energy sources that takes billions of years in their formation. Apart from been abundant and cheap, it has the added advantage of being environmentally friendly and sustainable, mostly in advancing global climate change agenda in the reduction of GHG emissions projections. The sector has been perceived worldwide as a strategic industry for the future. It has led to the attainment of multiple objectives, namely;

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[1] See ExxonMobil 2018 Energy Outlook- A View to 2040 (Online) Available for download at: <https://cdn.exxonmobil.com/~/media/global/files/outlook-for-energy/2018/2018-outlook-for-energy.pdf> Accessed August 2018.

fostering economic growth and the growth in high technology employment, while improving environmental protection and energy security. However, continued investments in RE projects have been hindered by a myriad of problems, notably in the use of protective trade measures such as *local content requirements* (LCR) by States as a means of boosting national objectives in the development of RE thereby limiting support to international investors through the *feed-in tariff* (FIT) policies which had hitherto guaranteed investments in the generation of RE into grid systems with a specified payment per unit of energy over a fixed period of time. What it implies is that LCR provisions seldom have the tendencies of raising the cost of inputs from downstream businesses, whereas investors in RE projects rely on imported intermediate products for the generation of RE. Some of the unresolved legal issues that have permeated the RE industry in recent times is whether the use of LCR violates international trade and investment agreements since they act as impediments across the RE value chain. Another would be the level of appropriateness of state measures used for incentivizing RE development and deployment. These conflicts have led to trade-related disputes which violates *General Agreements on Tariffs and Trade/World Trade Organization* (GATT/WTO), *Trade Related Investment Measures* (TRIMs) as well as *Article 10 (1)* of the *Energy Charter Treaty* (ECT). The paper starts by discussing the importance of energy as well as the need for energy transition. The barriers to the adoption of RE as an energy in transition is discussed in part two, the use of LCR, the arguments for and against LCR in the RE industry is highlighted in part three. Realizing the impact of protective trade measures, part four discusses the background to disputes in global RE generation; while part five explored attempts at regulating the use of LCRs from regional and global perspectives. Part six concludes this paper.

Importance of Energy

The fundamental ingredient for the growth of any country is how effective the power sector is. Power systems hold the key to the development of the world.'[2] This view was further amplified by *Shody*, who observed on the importance of energy thus:

> … no one is ignorant of the part played by energy, not only in science, but in industry, politics and the whole science of human welfare. From the cradle to the grave, everyone is dependent on nature for an absolutely continuous supply of energy in one or other of its numerous forms. When the supplies are ample, there is prosperity, expansion and development. When they are not there is want.'[3]

Today energy heats, cools and light our homes and businesses, power our factories and fuel our cars, thus increasingly underpinning the fabric of societal communication through modern technology.[4] In addition, the success of any civilization and industrial development of a nation depends upon its ability to provide sufficient energy for mechanical work, transportation,

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[2] F. Oladipo and O. Temitayo, 'The Nigerian Power System Till Date: a Review' (2014) 1, Issue 5, *International Journal of Advance Foundation and Research in Science and Engineering* (Online) Available for download at: <http://ijafrse.org/Volume1/Vol_issue5/4.pdf> Accessed August 2018.

[3] F. Shoddy, *"Matter and Energy"* (1912), cited in S. S. Haghighi, *"Energy Security: The External Legal Relations of the European Union with Major Oil-and Gas-Supply Countries"* (Hart Publishing, Oxford: 2007) 1.

[4] S. O. Ladislaw, *Energy and Development Trends: The Role of Rapidly Emerging Countries* (Centre for Strategic and International Studies; Washington: 2011) 2.

infrastructural development, information technology, as well as research and development.[5] Energy also plays a significant role in economic growth and development among nations. Since the industrial revolution, the energy sources available to a country have in most cases determined the GDP of the country. Similarly, the advent of electricity and consumption has led to the classification of nations into developed, developing and subsistence economies linked to the aggregate production and consumption of electrical energy.[6] The above view of *Oni* gives credence further to the importance of energy and electric energy thus:

> It thus becomes imperative for any nation desirous of attaining the status of developing to developed economies to devise strategies for providing adequate or optimum electrical energy for a total transformation of her people's standard of living and that of the society from the backwaters of technological ineptitude to an industrial, modern and affluent economy.[7]

While the USA and China have dominated energy consumption levels in the world, most countries in Sub-Saharan Africa and part of Asia have seen a lower share of GDP in the face of energy abundance. The USA is blessed with all of the primary energy raw materials as well as the capacity to convert them into useable energy.[8] According to *Zillman* and *Bigos,* 'this blessing has encouraged the US to be the world's great energy consumer, building and enormously rich, but wasteful economy, on that energy wealth.[9] China on the other hand has become one of the leading economies of the world by pursuing a vigorous economic policy geared towards energy imports from other countries.[10] By 2008, fifty percent of China's energy imports were used to manufacture goods for the rest of the world.[11] The economic growth rate of these countries cannot be likened to that of Nigeria or any other country in Sub-Saharan Africa due to the investment in energy service.

What this portends is that the calls by environmental groups[12] for the replacement and abandonment of fossil fuels energy since the 1970s will continue to conflict with future energy

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[5] F. O. Mbalisi and B. O. Offor, 'Energy Crisis and its Effects on National Development: The Need for Environmental Education in Nigeria' (2015) Vol. 3 No. 1, *British Journal of Education*. 21-37.

[6] A. Oni, *The Nigerian Electric Power Sector: Policy, Law, Negotiation, Strategy and Business* (Author House; Bloomington: 2013) 18.

[7] Ibid.

[8] D. N. Zillman and Michael T. Bigos, 'Security of Supply and Control of Terrorism: Energy Security in the Early Twenty-First Century' in Barry Barton et al, *Energy Security: Managing Risk in a Dynamic Legal and Regulatory Environment* (Oxford University Press: 2004) 146.

[9] Ibid.

[10] See D. Zweig, 'Modelling 'Resource Diplomacy' under Hegemony: The Triangular Nature of Sino-US Energy Relations' in D. Zweig and Y. Hao, (Eds) *Sino-US Energy Triangles: Resource Diplomacy under Hegemony* (Routlrdge; London: 2016) 20.

[11] Ibid. Currently, China apart from retaining for itself as one of the leading economies of the world, China is the world's leader in RE. See the World Energy Monitor Issues, 'Perspective on the Grand Energy Transition' (2018) World Energy Council. 34 at 35-37 (Online) Available for download at: <https://www.worldenergy.org/wp-content/uploads/2018/05/Issues-Monitor-2018-HQ-Final.pdf> Accessed August 2018.

[12] See R. Paehlke, *Conservation and Environmentalism: An Encyclopedia* (Garland Publishing: 1995) 213-214, C. Miller, *The Atlas of US and Canada Environmental History* (Moschovitis Publishing: 2006) 156-157, and C.

development policies of most countries in demand of energy due to population increase, as is the case for sub-Saharan African, Asian and Latin American countries. Similarly, the arguments over the years by the *Intergovernmental Panel on Climate Change* (IPCC), through its series of reports[13] that man's continued dependence on fossil fuels energy sources is responsible for the warming of the earth up to two to seven degrees Celsius, thus leaving an indelible mark of the resultant effects responsible for the catastrophic impacts experienced in different parts of the world,[14] also means that the call for change in the current energy utilization may not be unfounded (*emphasis mine*). While the focus of this paper is not on the truism of the IPCC reports, the views of *Ehrlich* is very critical. He has amplified the critical question which should be of concern to government policy makers and regulators of energy thus, even though this view is disputed.[15]

> …the fossil fuel era is bound to end in a matter of at most a century or two, due to the finite amount of remaining reserves. However, as you might suspect, waiting until fossil fuels begin to run out before making the transition away from them would be an utter disaster for the planet for a host of reasons, climate change, being only one among many.[16]

Barriers to The Adoption of Renewable Energy

> "…since the beginning of the 21st Century, renewable energy has been a significant area of research amongst scientists. However, despite scientists coming up with practical and convincing technologies on renewable energy, the process of getting people to switch from their use of non-renewable energy sources has been quite slow and uncertain especially in the developing nations.[17]

There is no doubt that the use and adoption of RES for the attainment of a sustainable and affordable energy all year round cannot be over emphasized considering the need to achieve climate goals. Putting away the high price to be paid by switching from fossil fuels energy to RES for the attainment of sustainable and affordable energy will be evading and postponing the

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Hamilton and R. Terrell, *Thinking Beyond Capitalism: An African America Alternative* (Trafford Publishing: 2014) 17-18.

[13] See generally the First – Fifth Assessment Reports of the IPCC on the impact of rising global warming concerns.

[14] See R. Mckie, 'The Big Heat wave: From Algeria to the Arctic. What is the Cause?' *The Guardian, UK 22 July 2018* (Online) Available for download at: <https://www.theguardian.com/world/2018/jul/22/heatwave-northen-hemisphere-uk-algeria-canada-sweden-whats-the-cause> Accessed August 2018, where Algeria recorded temperature up to 51°C, Japan 40°C and Toronto, Canada 30°C.

[15] A. Epstein, *The Moral Case for Fossil Fuels* (Penguin: 2014) 16-17, who noted thus: '…a popular Saudi expression at the time captured this idea: "My father rode a camel. I drive a car. My son flies a jet airplane. His son will ride camel." Well no one in the oil business is riding a camel, because as fossil fuel use has increased, fossil fuel resources have increased…' See also the views as expressed in R. Mckie, ibid (n 14), where Dann Mitchell of Bristol University was quoted as saying "yes, it is hard not to believe that climate change has to be playing a part in what is going on round the globe at present, there have been some remarkable extremes recorded in the past few weeks, after all. However, we should take care about overstating climate change's influence for it is equally clear there are also other influences at work."

[16] R. Uhrlich, *Renewable Energy: A First Course* (CRC Press: 2013) 29.

[17] D. Kariuiki, 'Barriers to Renewable Energy Technology Development' (2018) Keele University (Online) Available for download at: <https://www.energytoday.net/economics-policy/barriers-renewable-energy-technologies-development> Accessed August 2018.

dooms day. To bridge this gap by a quarter of this margin, some of these challenges will require change in governmental policies, change in technology and societal preferences. For instance, the non-availability of wind, sun at night, low seasonal water tide, the use of arable farmlands is some of the criticisms which inhibit the development of renewable energy.[18]

Socio-cultural effect factor which stems from what *Rule* described as 'fear of the unknown' mentality that interferes with every type of development at one time or the other,[19] has also inhibited the adoption of RE. This has occasioned the unwillingness to adopt RE for fear of unreliability as the bases for failure to adopt RE technologies in some countries.[20] Even in cases where the local community will benefit from the power generated, research also shows that the demand for compensation for the use of land gives credence to the above point.[21] Similarly, it is also observed that the fear of creating wealth in lands where the RES is sited is another reason for the opposition against RE, as landowners left out tend to oppose the sighting of projects.[22] An obvious case can be seen from the view of *Kakiuri* when the lack of awareness for RE in Sub-Saharan is factored into the scenario thus:

> …lack of knowledge and awareness of renewable energy technologies and systems amongst rural communities is another challenge encountered in renewable energy development. For example, a majority of people in Sub-Saharan Africa are uneducated and, therefore, they do not understand the concept of renewable energy. These uneducated people in the region are also hardly oriented to technical and environmental impacts associated with over-use of combustible renewables. These factors coupled together have slowed down the rate of development, circulation and usage of renewable infrastructure and technological knowledge.[23]

In addition to the above factors, market-related failures for RE systems and technologies have also slowed the development and adoption of RE. This has been hinged majorly on the high cost of initial investment for RE systems which are relatively high. That being the case, where the operational cost of installing the RE technology is high, the cost for the delivered power is also likely to be high when compared to fossil fuels energy utilization in developing countries, where energy is equally subsidized. Summing up the above view, it was observed thus that:

> …most people cannot afford renewable energy technologies because their initial installation costs and operation costs are usually high

[18] See the Compilation by K. O. Energy 'Background Information about Renewable Energy' (2014) *Climate Change and the Electricity Market* (Online) Available for download at: <http://www.ekoenergy.org/wp-content/uploads/2014/07/General_background_information.pdf> Accessed August 2018.
[19] T. A. Rule, Solar, Wind and Land: Conflicts in Renewable Energy Development (Routledge: 2014) 20.
[20] D. Kakiuri, ibid (n 17), who alluded to the general public disinterest and disengagement in wind energy development as the main social issues hindering renewable energy development in Saskatchewan, Canada.
[21] S. Sen and S. Ganguly, 'Opportunities, Barriers and Issues with Renewable Energy Development: A Discussion' (2017) *Renewable Energy and Sustainable Energy Reviews*. This was the case in Papua New Guinea.
[22] T. A. Rule, ibid (n 19). 21. See further solar access problems and the challenges posed by the growing of trees around solar PV panels at 98-100.
[23] D. Kakiuri, ibid (n 17).

> which raises their market prices, ultimately limiting their marketability. Since the market for renewable energy sources is limited, its development is also limited…In this case of renewable energy technologies, it is clear that most people are not motivated to acquire or develop them.[24]

Furthermore, while PV panels for instance have been known to enjoy tax exemptions in some countries, other solar PV components such as batteries and DC lamps still attract up to 24 percent import duty. This has increased the cost of investment in RE equipment and devices above other traditional energy technologies.[25] Other barriers may include poor geographical terrain, as in the case of Indonesia and Sub-Saharan Africa. Indonesia with 13,000 archipelagic islands faces unique challenges for designing, constructing and operating electricity networks using RES.[26] Geographical factors apart from influencing grid design have also placed constraints on potential renewable generators connecting into Indonesia's national grid.[27] While the above constraint to the adoption of RES as primary energy supply can be adjudged to be within the grasps of any government to remedy them, the use of LCR has over the years emerged as the major challenge militating against the adoption and generation of energy from RES.

Local Content Requirements in The Renewable Energy Industry

LCR is a policy measures requiring foreign or domestic investors to source a certain percentage of intermediate goods from local manufacturers or producers. These local producers can either be domestic firms or localized foreign owned enterprises.[28] It could also be an internal regulatory measure that requires a certain proportion of final goods or services used in production process or project to be sourced from a specific jurisdiction.[29] With the thriving trade in RE technologies, a growing number of countries posses LCRs for RE projects, granting benefits to projects that use in the process materials "developed, manufactured or sourced locally as of a national policy tool used in achieving the generation of RE.[30] By its very nature, it has considerable repercussions on employment and international trade. It is also controversial due to its protectionist nature, as will be seen from the multiple cases brought to the WTO recently relating to the use of LCR. Their uses range from precondition for RE projects in procurement tenders to conditions for receiving a tariff rebate on other inputs, such as electricity tariffs or tax treatment[31]

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[24] Ibid.

[25] A. Fashina, et al, 'The Drivers and Barriers of Renewable Energy Applications and Development in Uganda: A Review' (2018) Clean Technologies Review (Online) Available for download at: <file:///C:/Users/ADMIN%20PC/Downloads/cleantechnol-01-00003.pdf> Accessed August 2018.

[26] See R. Bridle, et al, 'Missing the 23 Percent Target: Roadblocks to the Development of Renewable Energy in Indonesia' (2018) *Global Subsidies Initiative Report* (Online) Available for download at: <https://www.iisd.org/sites/default/files/publications/roadblocks-indonesia-renewable-energy.pdf> Accessed August 2018.

[27] Ibid. See also D. Kariuka, ibid (n 17 for the spate of uneven solar power distribution in India.

[28] See J. C. Kuntze, and T. Moerenhout, *Local Content Requirement and the Renewable Energy Industry: A Good Match?* (ICTSD: 2013) 13.

[29] C. Banet, 'Techno-Nationalism in the Context of Energy Transition: Regulating Technology Innovation Transfer in Offshore Wind Technology' in D. Zillman et al, (Eds) *Innovation in Energy Law and Technology: Dynamic Solutions for Energy Transition* (Oxford University Press: 2018) 83. In this context, LCR is seen as a measure aimed at incentivizing local investments.

[30] B. O. Guipponi, 'Mapping Emerging Countries' Role in Renewable Energy Trade Disputes' (2015) 13, Issue 1, *Oil, Gas and Energy Law Intelligence Journal*, 1.

[31] J. C. Kuntze, and T. Moerenhout, ibid (n 28) 5.

It is also imperative to emphasize that LCR as a policy is not new to the natural resources extractive industry. It has featured prominently in the oil and gas industry, mostly in Sub-Saharan Africa.[32]

To this end, why is the case for the use of LCRs in the RE different? According to *Kuntze* and *Moerenhout*, arguments for and against abounds for the use of LCRs. On the one hand, inefficient allocation of resources, trade impacts, retail power price inflation and employment concerns accounts for some of the arguments against the use of LCRs, as they tend to amongst others make foreign products less attractive, with a negative impact on free trade; inflation of power cost and inability to create sufficient RE jobs.[33] It has been argued however, that where the industry is completely new to the economy of a State, the use of LCR becomes justified in order to stimulate and develop the infant industry, to enable it compete globally in the mainstream manufacturing sector of the industry.[34] Another benefit of using LCR is the obvious reason of increasing the tax based of the government introducing the policy, as this would allow government to have more income in a time of financial need, while developing a new industry.[35] Again, from the environmental perspective, LCR has the added advantage of bringing more, new mature players to the global market, which, according to *Kuntze and Moerenhout,* in the medium-term, will increase competition and innovation thereby lower green technology costs, while at the same time accelerating the schedule on which RE reaches grid parity compete with fossil fuel and nuclear energy without subsidization.

From the above, the trend in the use of LCR has gained momentum over the years in support of the latter arguments for the use in the RE industry. According to *Leigland* and *Eberhand*, 'the global use of protectionist trade measures (*such as LCR, emphasis mine*) has been growing especially in renewable energy programmes,'[36] with the U.S.A leading in protectionist trade measures compared to G-20 countries.[37] This trend has been largely attributed to attempts to create jobs and increase industrial development in face of series of financial crises since 2008.[38] It is further submitted that though in 2017 there was an estimated global economic growth of 3.0

[32] See J. S. Ovadia, 'The Role of Local Content Policies in Natural Resource-Based Development' 2013) *Raw Materials and Development, Austrian Development Policy* Paper. 39 and E. D. Mushemeza, and J. Okiira, 'Local Content Frameworks in the African Oil and Gas Sector: Lessons from Angola and Chad' (2016) Advocates Coalition for Development and Environment (ACODE) Policy Research Series No. 72.

[33] Ibid. 7-8.

[34] See C. Ettmayr, and H. Lloyd, 'Local Content Requirements and the South African Renewable Energy Sector: A Survey-Based Analysis' (2017) 20, No. 1 *South African Journal of Economic and Management Sciences*. This findings may not be correct if the report that 34.8 percent of respondents from the IPP/EPC survey that they did not believe South Africa would be globally competitive in renewable energy manufacturing, sending out a signal that perhaps the focus on manufacturers alone should change to be more inclusive of a broader value chain perspective See also J. C. Kuntze, and T. Moerenhout, ibid (n 28) 6.

[35] Ibid.

[36] J. Leigland and A. Eberhand, 'Localization Barriers to Trade: The Case of South Africa's Renewable Energy Independent Program' (2018) 35, No. 4 Development Southern Africa. 572. Relying on the 2013 report of the *Global Trade Alert*, it observed that there exist over 3,300 protectionist trade measures since their monitoring began in 2008, including 431 measures from June 2012 to May 2013, three times the number of liberalizing measures over that period. It was further noted that since 2008, 117 LCR measures have been identified relating to RE policies.

[37] See The 21st Global Trade Alert Report 2017, 'Will Awe Trump Rule?' (Online) Available for download at: <https://www.globaltradealert.org/reports/42> Accessed August 2018.

[38] J. Leigland and A. Eberhand, ibid (n 36) 572.

percent compared to 2.4 percent in 2016, this economic gains remain unevenly distributed across regions and many parts of the world[39] prompting further speculations that the global use of protectionist trade measures like the LCRs will continue to hold sway in the nearest future. Thus, if the above scenario persists, then credence is given to the calls[40] that LCR apart from being an impediment to international investment on RE generation, conflicts and act as restrictions to global trade which the WTO rules is opposed to. It is on this note that further analysis in this paper will focus on the role and attempts by the GATT/WTO rules in securing investors' confidence in the adoption of RE in the current global energy transition trend.

Background to Disputes in Global Renewable Energy Generation

The sudden rise in investment renewables have continued to increase each year, and since 2004, the world has invested $2.9 trillion in green energy sources.[41] For instance, solar radiation reaching the earth's surface in one year provides more than 10,000 times the world's yearly energy needs. Furthermore, harnessing just one-quarter of the solar energy that falls on the earth could meet all current global energy needs comfortably. Achieving this feat will require the collaboration in the deployment of enormous investment globally to tune of over one trillion to over two trillion US Dollars annually to meet climate change goals.[42] A major threat to this rise in global investment in RE has been the debate over the role governments should take in supporting RE technologies as well as on the choice of policy instruments to increase renewables' share of the electricity supply mix.[43] The Debate stems from different perspectives on innovation. Yet it is unclear whether governments should allocate funding for energy innovation to technology-push mechanisms, through knowledge creation and research and development (R&D), or through market creation via subsidies or guaranteed markets. While technology-push advocates see investment in R&D as a first priority, particularly for high cost technologies including solar PV others see demand-pull mechanisms, including FITs that focus on market creation, production increases and removal of deployment barriers, as key to innovation.[44] According to *Brocka-Balbi*, FIT mechanism can attain the following: 'policy reduction of environmental impact of electricity generation; stabilization of electricity rates with

[39] See the Executive Summary of the UN World Economic Situations and Prospects 2018 (Online) Available for download at: <https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/WESP2018_Full_Web-1.pdf> Accessed August 2018.

[40] See C. Banet, ibid (n 29) 83, J. Leigland and Anton Eberhand, ibid (n 36) 572, C. Ettmayr, and H. Lloyd, ibid (n 34), C. Verburg, 'Local Content Requirements in Renewable Energy Schemes: Government Procurement or a Violation of International Obligations'? (2017) *International Energy Law Review*. 2. It observed that 'LCRs is a reoccurring issue in international trade and investment disputes concerning renewable energy generation equipment.'

[41] See the Frankfurt School-UNEP Collaborating Centre for Climate and Sustainable Energy Finance, 'Global Trend in Renewable Energy Investment 2018' (Online) Available for download at:<http://fs-unep-centre.org/sites/default/files/publications/gtr2018v2.pdf> Accessed August 2018.

[42] Ibid. The report showed that investment in RE increased by two percent in 2017 to $280 Billion. See also IRENA, IEA and REN21 Working Document 2018, 'Renewable Energy Policies in a Time of Transition' (Online) Available for download at: <http://www.irena.org/-/media/Files/IRENA/Agency/Publication/2018/Apr/IRENA_IEA_REN21_Policies_2018.pdf> Accessed August 2018, which put the investment in RE since 2004 to 2017 to USD 2.9 Trillion.

[43] L. Stokes, 'The Politics of Renewable Energy Policies: The Case of Feed-in Tariffs in Ontario, Canada' (2013) *Energy Policy*. 490 at 491.

[44] Ibid.

consequent attraction of new investments; economic development and job creation.'[45] However, implementing these measures often interferes with national trade law and WTO provisions, thus raising a fundamental conflict between the domestic RE support policies and the basic principles of the global trade regime.[46]

For instance, in the EU and Canada, the use of LCR to diminish the relevance of FIT by some EU states and in the wider global trade arrangement evidences the above point. For over two decades, the EU has been in the forefront for the adoption of RES as an alternative source of energy. RES consumption has seen an increase from 9 percent in 2005 to 16 percent in 2015, with the prospect of achieving the 20 percent target in 2020 and 27 percent by 2030.[47] This has helped to foster high economic growth and growth in high technology employment, improved environmental protection and energy security within the EU. However, the major challenge for RE development has been the introduction of the FIT mechanism, designed to accelerate investment in RE technologies by offering stable revenue for the price of generated electricity sufficient to recover investment.[48] The major aim of the FIT was to reduce the environmental impact of electricity generation, stabilization of electricity rates and economic development and job creation.[49] This was the case with Canada and Spain.[50] According to *Verburg*, by compelling investors to comply with the LCR by making use of inferior domestic hardware which reduces the efficiency of the project, implies that less RE will consequently be produced at a price that is too high.[51] It is not surprising that 30 percent of the proposed wind projects in Europe were stopped due to lawsuits and public resistance from companies and individuals owning or using lands near the development sites for wind farms.[52]

Another reason for the disputes within the EU and globally also relates to the national governments' objective of ensuring maximum national or regional benefit from governmental

[45] Z. Brocka-Balbi, 'The Rise and Fall of the Italian Scheme of Support for Renewable Energy from Photovoltaic Plants' (2015) 13, Issue 3, *Oil, Gas and Energy Law Intelligence Journal*. 4.
[46] B. O. Guipponi, ibid (n 30) 1.
[47] See the European Commission and IRENA Paper, 'Renewable Energy Prospect for the European Union, 2018 (Online) Available for download at: <https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2018/Feb/IRENA_REmap-EU_2018_summary.pdf?la=en&hash=818E3BDBFC16B90E1D0317C5AA5B07C8ED27F9EF> Accessed August 2018.
[48] Z. Brocka-Balbi, ibid (n 45). See also A. De Luca, 'Renewable Energy in the EU, THE Energy Charter Treaty, and Italy's Withdrawal Therefrom' (2015) 13, Issue 3, *Oil, Gas and Energy Law Intelligence Journal*, and A. Johnston, 'Recent Renewables Litigation in the UK: Some Interesting Cases' (2015) 13, Issue 3 *Oil, Gas and Energy Law Intelligence Journal*. 4, which alluded to the fact above that the FIT offer a guaranteed price or premium for a long period for each unit of electricity fed into the grid produced from a renewable energy generator, and that from 2010 and 2011 onward, it became apparent that the subsidies granted towards the FIT was too generous.
[49]Ibid. The major aim of the FIT was to reduce the environmental impact of electricity generation, stabilization of electricity rates and economic development and job creation. It is intended to encourage both individual investors and companies to invest in the generation of RE. See A. Fashina, et al, ibid (n 25).
[50] C. Banet, ibid (n 29) 84. In this case, foreign companies were encouraged to establish manufacturing bases in these countries in return for access to domestic markets.
[51]C. Verburg, ibid (n 40) 2, it was also observed that LCRs "have had a detrimental effect on global international investment flows in solar and wind energy" since they disrupt the increasingly globally organized value chain of RES generation equipment.
[52] T. A. Rule, ibid (n 19). 19-20.

measures insistence on the use of LCRs as opposed to the principles of global trade regimes.[53] For investors, there is the need for legal certainty, taking into account that potential investors need to have clear instructions about the implications of support mechanisms in the development and deployment of RE projects.[54] It was the absence of such guarantee and the use of such protectionist policies that led to the emergence of trade related disputes which is the subject of the next analysis as it relates to measures to curtail the use of LCRs.[55]

Attempt at Regulating Local Content Requirements

International law often sets the trend for development of national laws, as is evidenced in the realm of international human rights law. However, in the case of international environmental law and more specifically in the case of climate change law, this has not been the trend. The challenges in achieving global consensus on specific and ambitious targets for the reduction of GHG emissions have resulted in regional policy and legal frameworks, constituting a better basis for development of national frameworks. It is contended that the role of international institutions such as the *GATT/WTO*,[56] *TRIMs*,[57] as well as international investment agreements such the *Energy Charter Treaty* (ECT)[58] have been instrumental in resolving issues relating to global investment disputes that has spanned both developed and developing countries.[59] From the EU perspective, the EU has demonstrated leadership in climate change drive through reduction of GHG emission within the region. For this purpose, the strategic priority of the EU and its member states have been to push for a greener energy mix involving a significantly increased

[53] K. Talus, 'Renewable Energy Disputes in the Europe and beyond: An Overview of Current Cases' (2015) 13, Issue 3, *Oil, Gas and Energy Law Intelligence Journal*. 5.
[54] B. O. Guipponi, ibid (n 30) 4.
[55] See the UNCTAD International Investment Agreements Issue Note, 'Investor-State Dispute Settlement: Review of Developments in 2016' (2017) Issue 1, UN-UNCTAD (Online) Available for download at: <http://investmentpolicyhub.unctad.org/Upload/Documents/diaepcb2017d1_en.pdf> Accessed August 2018.
[56] The WTO was created on the 1st of January 1995, to deal with trade services, intellectual property and dispute settlement mechanisms, as a successor to GATT, created in 1948, to deal with trade in goods. It currently has 164 members with over 500 trade dispute claims. See generally the WTO (Online) Available for download at: <https://www.wto.org>Accessed May 2018, J. Kurtz, *The WTO and International Investment Law: Converging Systems* (Cambridge University Press: 2016). 31-48 and P. Van Den Bossche and W. Zdouc, *The Law and Policy of the World Trade Organization* (Cambridge University Press: 2012) 75-84, for origin and objectives of the WTO.
[57] TRIMs apply only to measures that affect trade in goods, such as LCR and trade balancing requirements that may lead to trade disputes. See generally WTO (Online) available for download at: <https://www.wto.org/english/tratop_e/invest_e/trims_e.htm> Accessed August 2018 and WTO Dispute Settlement: The Dispute (Online) Available download at: <https://www.wto.org/english/tratop_e/dispu_e/dispu_agreements_index_e.htm?id=A25#selected_agreement> 7Accessed August 2018 and C. Osakwe and J. Lee, 'The Future of Multilateral Investment Rules in the WTO: Contributions from WTO Accession Outcomes,' in U. Dadush and C. Osakwe, (Eds) *WTO Accessions in Trade Multilateralism: Case Studies and Lessons the WTO at 20* (Cambridge University Press: 2015). 818.
[58] The ECT was signed in December 1994 and entered into legal force in April 1998. Currently there are fifty-three signatories and contracting parties to the Treaty. This includes both the European Union and Euratom (Nuclear energy cooperation countries of Europe). It is designed to promote energy security through the operation of more open and competitive energy markets, while respecting the principles of sustainable development and sovereignty over energy resources See generally The ECT (Online) Available for download at: < https://energycharter.org/process/energy-charter-treaty-1994/energy-charter-treaty> Accessed August 2018.
[59] K. Talus, ibid (n 52) 5. For instance, the ECT has alone provided the applicable rules of international law for 58 disputes, many of which have been intra-EU disputes.

share for RE by 20 percent, with a commitment to achieving this increase by 2020, and 30 percent by 2030,[60] through a binding directive.[61]

In order to achieve the above objectives, EU member states undertook different schemes in support of investments for RE projects such as the FIT measures stimulate investment to generate electricity from RE over a period of time sufficient to recover their investment. Thus, when Spain attempted to modify its rules on FIT due to change in economic circumstances and lack of financial resources, this sparked several litigations against the Spanish government, and other EU member states with similar objectives.[62] In *Masdar Solar and Wind Cooperatief U.A. v. The Kingdom of Spain*,[63] the ICSID in awarding full reparation to the plaintiff, held that Spain violated the fair and equitable treatment provision of *Article 10 (1)* of the ECT. It sets out a number of basic principles for the treatment of foreign investments that are frequently found in Bilateral Investment Treaties (BIT). It provides that:

> "Each Contracting Party shall, in accordance with the provisions of this Treaty, encourage and create stable, equitable, favourable and transparent conditions for Investors of other Contracting Parties to make Investments in its Area. Such conditions shall include a commitment to accord at all times to Investments of Investors of other Contracting Parties fair and equitable treatment. Such investments shall also enjoy the most constant protection and security and no Contracting Party shall in any way impair by unreasonable or discriminatory measures their management, maintenance, use, enjoyment or disposal…"

As *Hober* noted, 'this standard of 'fair and equitable treatment' is derived from international law, and has, through its frequent application by tribunals… become an important principle of investment protection.'[64] Another major impact of the use of protective trade measures in the EU

[60] Ibid. 4. It is however doubtful whether even Germany the leading EU country in renewables can achieve its target of RES providing 50-60 percent of electricity by 2035. See W. C. Thompson, *Nordic, Central and Southeastern Europe: The World Today Series 2018-2019*, 18th Ed (Rowman & Littlefield: 2018) 272.

[61] EU Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC.

[62] Ibid.

[63] International Centre Settlement of Investment Disputes (ICSID) Case No. ARB/14/1 delivered in May 2018 (Online) Available for download at: <https://www.italaw.com/sites/default/files/case-documents/italaw9710.pdf> Accessed August 2018. See also *Eiser Infrastructure Limited and Energía Solar Luxembourg S.A.R.L. v. Kingdom of Spain*, ICSID Case No. ARB/13/36. Note also that the claimant have lodged a petition to enforce the arbitral award in the US District Court for the District of Columbia, 2018 (Online) Available for download at: https://www.italaw.com/sites/default/files/case-documents/italaw9848.pdf> Accessed August 2018 and Novenergia II - Energy & Environment (SCA) (Grand Duchy of Luxembourg), SICAR v. Kingdom of Spain, Stockholm Chamber of Commerce (SCC) 2015/063, delivered in February 2018 (Online) Available for download at:< https://fernandezrozas.files.wordpress.com/2018/02/novenergia-v-spain_laudo-15-02-2018-1.pdf> Accessed August 2018. See however, *Charanne B.V., Construction Investments S.A.R.L. v Kingdom of Spain*, SCC Case No. V026/2012, delivered in January 2016, where the tribunal held amongst others that no breach exists from Spain's legislative measures introduced in 2010.

[64] K. Hober, 'Investment Arbitration and the Energy Charter Treaty' (2010) 1, Issue 1, Journal of International Investment Disputes. 153-190 at 157. This was duly reflected in the case of *Eiser Infrastructure Limited and Energía Solar Luxembourg S.A.R.L. v. Kingdom of Spain,* ibid (n 62) and *Isolux Netherlands, BV v Kingdom of Spain (SCC Case V2013/153) (Isolux).*

was the withdrawal of Italy from the ECT, citing fears over investor actions over its '*Spalma Incentive Decree*,'[65] which created severe budgetary problem for solar investors in the light of the changes proposed by the Italian government.[66] While the above plethora of cases from the EU and ECT perspectives have not given a clear roadmap to resolving RE disputes relating to LCRs, the view of *Power and Baker* that '…there is no system of precedent in investment treaty decisions; one panel of highly distinguished arbitrators may well interpret the effect of such legislative provisions differently to another, equally eminent, tribunal'[67] becomes critical as to what may lie ahead.

There is no denying the fact that LCR is seen as the major barrier and policy impediment to international investment across the solar and wind energy value chain and have been a reoccurring issue in the international trade and investment dispute concerning RE generation equipments.[68] As noted above,[69] LCR violates WTO/GATT provisions as contained in *Article III*. While *Article III (1)* lays down the national treatment obligation (NTO) requiring nations to treat imported and locally produced goods equally, it is *Article III (4) and (5)* that is of relevance on the legality of LCR.[70] For instance, *Article III (4)*, dealing with the national treatment principle provides thus:

> the products of the territory of any contracting party imported into the territory of any other contracting party shall be accorded treatment no less favourable than that accorded to like products of national origin in respect of all laws, regulations and requirements affecting their internal sale, offering for sale, purchase, transportation, distribution or use…[71]

Article III (5) on the other hand provides that:

> no contracting party shall establish or maintain any internal quantitative regulation relating to the mixture, processing or use of products in specified amounts or proportions which requires, directly or indirectly, that any specified

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[65] See G. L. Fiorelli, 'Italy Withdraws from Energy Charter Treaty' Baker/McKenzie Global Arbitration News, 6 May 2015 (Online) Available for download at: <https://globalarbitrationnews.com/italy-withdraws-from-energy-charter-treaty-20150507> Accessed August 2018. See also S. F. Massari, 'The Italian Photovoltaic Sector in two Practical Cases: How to Create an Unfavorable Investment Climate in Renewables' (2015) 13, Issue 3, Oil, Gas and Energy Law Intelligence Journal. 8, which described the Legislative Decree No. 91/2014 *"spalma incentive*", as a measure aimed at retrospectively reshaping the incentive to PV plants bigger than 200Kw.

[66] S. F. Massari, ibid. 9. See the case of *Blusun S.A., Jean-Pierre Lecorcier and Michael Stein v Italian Republic* (ICSID Case No. ARB/14/3) (Blusun).

[67] R. Power and P. Baker, 'Energy Arbitrations' (2018) European Arbitration Review (Online) Available for download at: <file:///C:/Users/ADMIN%20PC/Downloads/print.pdf> Accessed August 2018.

[68] See OECD Trade Policy Note, 'The Economic Impact of Local Content Requirements' February 2016 (Online) Available for download at: <https://www.oecd.org/tad/policynotes/economic-impact-local-content-requirements.pdf> Accessed August 2018.

[69] C. Verburg, ibid (n 40). A national treatment obligation as contained in Article III relates to whether a country favours itself over other country. See P. Van Den Bossche and W. Zdouc, ibid (n 56) 349.

[70] C. Banet, ibid (n 29) 85.

[71] See Article III (4) of the Text of General Agreement of GATT, 1986 (Online) Available for download at: https://www.wto.org/english/docs_e/legal_e/gatt47.pdf> Accessed August 2018.

> amount or proportion of any product which is the subject of the regulation must be supplied from domestic sources…[72]

Similar to the GATT/WTO, TRIM agreements also seek to remove any investment measures that discriminate against foreigners or foreign trade with the effect of restricting or distorting trade in relation to the NTO[73] or where it represents a form of quantitative restriction.[74] *Article 2 (1)* provides that:

> 'without prejudice to other rights and obligations under GATT 1994, no Member shall apply any TRIM that is inconsistent with the provisions of Article III or Article XI of GATT 1994'.[75]

The implications of these provisions is that any measure that prescribes that a given amount of local content is to be used in a RES project violates the WTO/GATT and TRIMs provisions even when it is not expressly contained in a legislation, and the investors have committed to use local content voluntarily.[76] This was the decision of the Panel and the Appellate Body[77] of the WTO in the use of LCR by Canada brought by Japan, concerning the FIT program of Canada, which required wind and solar projects to source 50 and 60 percent of their project components locally in order to be eligible for a FIT.[78] The decisions of both bodies confirmed that the use of LCR violates WOT/GATT and TRIMs provisions and its use is prohibited.[79]

Another case which was instrumental in the development of law in relation to the development of RE is the Indian Solar Module Case brought by the U.S in 2013.[80] The U.S claims was that the use of LCR in the *Jawaharlal Nehru National Solar Mission* (JNNSM), violates GATT/WTO and TRIMs provisions, by nullifying the benefits accruing to the U.S in the above agreements.[81]

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[72] See Article III (5) ibid. Although, it may appear that all disputes relating to RE projects have been brought under the provision of Article III (4) without the mention of Article III (5). See C. Banet, ibid (n 29) 85.

[73] See Article III of GATT

[74] See Article XI of GATT dealing with generally prohibitions on quantitative restrictions on the importation or the exportation of any product by stating that "No prohibitions or restrictions other than duties, taxes or other charges shall be instituted or maintained by any Member. See also C. Banet, ibid (n 29) 87-88.

[75] Article 2 (1) of TRIMS- See WTO Agreements on TRIMS (Online) Available for download at: <https://www.wto.org/english/docs_e/legal_e/18-trims_e.htm#2> Accessed August 2018.

[76] C. Banet, ibid (n 29) 85.

[77] See P. Van Den Bossche and W. Zdouc, ibid (n 56) 205, for institutions of dispute settlement of WTO and other institutions involved in WTO dispute settlement.

[78]See *DS412: Canada- Certain Measures Affecting the Renewable Energy Generation Sector (Japan v. Canada) 2010* (Online) Available for downloads at: <https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds412_e.htm> Accessed August 2018. See also C. Verburg, ibid (n 40), who drew the distinction between a product that is being discriminated by virtue of the LCR **a**nd the product that is being procured. Whereas the former relates to electricity generation equipment, the latter is electricity, which affirms the Appellate Body decision that there is no competitive relationship between the two products and the LCRs cannot be qualified as "laws, regulations or requirements governing the procurement by governmental agencies" of electricity within the meaning of GATT Article III (8) (a).

[79]Ibid. See also P. Van Den Bossche and W. Zdouc, ibid (n 56) 349-356 dealing with nature and application of the NTO.

[80]See *DS456: India- Certain Measures Relating to Solar Cells and Solar Modules (U.S v. India)* 2013 (Online) Available for download at: <https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds456_e.htm > Accessed August 2018.

[81] See also Article III (4) and Article 2 (1) of TRIMs. Note also that Article 1106 of the North American Free Trade Agreement (NAFTA) has similar provisions prohibiting the use of LCR as it relates to RE. See the *Case Concerning*

In a similar but more emphatic manner, the Panel and the Appellate Body held by reiterating that the position under WTO law that LCRs cannot be attached to FIT schemes if the governmental agency involved is procuring electricity and not generation equipment itself.[82] However, with the non-codification of international investment law and challenges confronting the WTO[83] for the protection of investments relating to RE projects, it is doubtful whether LCR will be a thing of the past as developing countries will be gearing up for the change mantra of going green.

CONCLUSION

Energy is fundamental to modern life, and as the world's population is estimated to approach nine billion people by 2040, the challenges to improve living standards across the globe must be met by a sustainable and efficient energy practice achievable through the adoption of RES as the energy for the future. However, the barriers and most importantly the use of LCR by States in achieving national objectives in the manufacturing and deployment of RE products have tended to be at odds with the rise in investment in RE projects, and thus violating key provisions in international trade and investment agreements. The mechanisms in resolving dispute relating to the use of LCR under the ECT through IITs, GATT/WTO and TRIMS rules have thus far achieved an acceptable international law precedent to guide investment tribunals mostly as they will relate to developed countries. However, as the demand for the use of RE tend to move away from developed countries, it becomes imperative to have for a unified international law approach to cub the rise in the use of LCR.

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the Mesa Power Group LLC v. Government of Canada (2012), even though the Arbitral tribunal held against the complainant.

[82] Note also that the GATT Article XX and TRIMS Article 3 allows for exceptions, provided the State measures comes under one of the grounds in the above provisions, and are not discriminatory. See V. Roeben, *Towards a European Energy Union: European Energy Strategy in International Law* (Cambridge University Press: 2018) 75, and the Appellate Body decision in *DS456: India- Certain Measures Relating to Solar Cells and Solar Modules (U.S v.* India), rejected India's argument that its international obligations under the UNFCCC necessitated the use of LCR.

[83] See E. Fabry and E. Tate, 'Saving the WTO Appellate Body or Returning to the Wild West of Trade' (2018) Policy Paper No. 225 of the Jacques Delors Institute (Online) Available for download at: <http://institutdelors.eu/wp-content/uploads/2018/05/SavingtheWTOAppellateBody-FabryTate-June2018.pdf> Accessed August 2018, where undecided multi cases and non-appointment of judges for the WTO courts as major challenges.