A new era for global energy governance?
The environmental imperatives and the EU perspective

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Abstract

The ongoing restructuring of the global energy scene necessitates both national governments and energy associated institutions to reconfigure their agenda, reconsider their priorities and even undergo internal reforms in order to adapt to the current and future energy trends. The prospect of global energy governance, within a reformed institutional framework, emerges as a pivotal issue for global politics. The purpose of this research paper is twofold; to analyze the evolution of global energy governance and energy institutions around two key topics: the expansion of renewable energy (RE) sources and technologies and the climate change mitigation. Besides, to identify the role of the European Union (EU) as global energy and environmental actor. The research paper will focus on the EU's positioning in the international energy and environmental initiatives and the role of renewable energy (RE) in its energy policy configuration.

Keywords

Climate change mitigation, European Union (EU), energy transition, environmental protection, global energy governance, renewable energy.

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Introduction

Multiple changes afoot the global political scene, with the most noticeable to be the rise of new economic poles beyond the traditional ones. The interplay between the traditional major powers and the emerging, shape the current political dynamics marked by power dispersion and intense interdependences. In this contemporary global context, important transitions take place around the issues preoccupying traditionally the international energy agenda. *Many of the long-held energy tenets of the energy sector are being rewritten* (WOE, 2013).The quest of secure, fairly –priced and environmentally friendly energy sources remain the core element shaping the international energy agenda. Remarkable are though the shifts we identify in the determinants of the same agenda namely the energy mix trends, the energy flows and the supply-demand chain centre of gravity.

The dispersion of political power, due to the emergence of new economic superpowers, accrues the multi- polarity of the international system. At the same time, the new critical energy challenges arise lying at the intersection of conventional energy security concerns and the emergence of environmental imperatives due to climate change and energy resources scarcity. These two facts – power multi- polarity and the renewed energy challenges are inextricably interlinked in the configuration of the new poles of the global energy system. The relationship between energy transitions and international security is differentiated from the past and a new energy order emerges: the need to move to a de-carbonized and affordable energy system would be the latest in a long series of global energy transitions (Lesage et al., 2010).

Fossil fuels will continue to dominate the global energy demand and consumption and climate change mitigation as well as the realization of other environmental goals will continue to be subjected in domestic and international energy policies. However, the rise of renewable energies, in the race for clean energy economies, could transform radically the geographical distribution of the world's energy resources resulting in the reconfiguration of global energy system. Energy related institutions should get adapted to this newly shaped global energy structure while, new energy institutions arise in order to fill in the regulatory gap caused.

This research paper investigates the interplay between the environmental concerns and energy use as an important component for the global research agenda regarding energy governance. We try to bridge multiple issues areas and to explore the connection among them in order to evaluate the effectiveness of RE expansion in climate change combat but principally the way the question of environmental sustainability became a core element of the energy global institutional context and one of the EU energy policy pillars

Literature Review

Energy issues constitute a rich but rather underexplored theoretical field for IR and global governance scholars and policy makers. Traditionally, environmental politics, both their global and regional dimensions, dominate the relevant literature with early scholars focusing on the way international community dealt with environmental issues (treaties, institutions etc.) and more recent ones taking into consideration the economic development quest. As Falkner argues (Falkner, 2014), one of the key factors that has brought together the global environmental politics study and energy research is the threat of climate change. In this research paper, energy and environmental issues are considered inextricably connected. We are in accordance with Falkner's

argument and we argue, further, that RE expansion has also contributed to the merging of environmental and energy IR research.

In a similar way, extensive literature exists around the issue of the EU as global actor in international environmental politics. The external energy relations of the EU have attracted the academic interest in the aftermath of the gas supply crises of 2006- 2009 and they cover mostly the geopolitical aspects of the relation between the EU and its major energy partners. The evolution of EU energy policy by means of concrete goal setting, including climate change mitigation through RE expansion and the pursuit for a "common" external energy voice has contributed to the evolution of the notion of the EU actorness in global energy politics.

The majority of energy politics scholars point out the fragmentation of global energy governance (Florini, Sovacool, 2011) in terms of the existing institutions dealing with energy issues and their performance. This research paper draws the attention to two key facts. Due to the shifts occurring in the global energy system, both contemporary energy governance and the relative research have to merge traditional energy security concerns (security of supply, oil pricing etc.) with the quest of environmental sustainability. The climate change mitigation, having RE expansion as a key tool, is restructuring, thus, global energy governance as a notion and as a global politics imperative.

Theoretical Framework

Energy and environmental are both multidisciplinary issues by nature and research study. This research paper focuses on the intersection of global energy and environmental politics analysed through the theoretic lenses of International Relations (IR), EU actorness in international affairs and the EU policymaking process.

More specifically, the concept of global energy governance will be, more narrowly, built upon the subfields of global governance and institutionalisation. The study will be developed around the international organisations dealing energy and RE expansion. The case study of the EU's energy and environmental actorness, focuses on the EU energy and climate policy goals configuration, given the special nature of the EU; i.e. a transnational institution, with growing and challenging energy demands with an international status allowing it to pursue cooperation schemes.

It will become, however, apparent that the analysis will be developed wider than the strict boundaries of IR (institutionalisation/governance theories) and the configuration of the EU energy policy, integrating International Political Economy (IPE) which takes into consideration the economic and trade flows, production and fiscal limitations and the public-private sectors, often, competing interests.

Conceptualization & Operationalization

The notions of governance & global governance

Conceptualizing and arriving to a common understanding of the notion of governance has begun to preoccupy the various disciplines of IR and public policy research area in recent decades. However, we can argue that the question of governance, within the global world, order has been crucial for the development of the different theories of world politics.

The rationalist paradigm in IR, has traditionally associated the term "governance" with the state actors and national governments, based on the main presumption of states being the key actors in international relations striving to maximize their own power and security. Hence, only states can provide the means for governance exercise.

More recent IR theories have focused their analysis on governance exercise by multiple actors such us: non- states actors; international organizations, non- governmental organizations (NGOs), transnational corporations, civil society movements etc. In the absence of a formal world government (Bull, 1977), (Miller, 1998), the governance of the global-scale issues cannot be handled solely by the state actors.

In general terms, governance arises when the nation-states understand the existing interdependence between them; the power exercise and behavior of each national state within the international system, affect the degree of resources, capabilities, and influence in the international affairs of the other states. Interdependence could increase the conflicting situations between the states when the interests pursue of an individual state interferes or overlaps the efforts of the others to achieve their own goals. Interdependence, at the same time, offers the basis for cooperation and collective -action; the more intensive the interdependence becomes, the more imperative the need of cooperation becomes (Nye, Keohane, 1997). The nation states' interests are inextricably interconnected to the extent to which the inability of cooperation frequently produces joint losses instead of common gains.

Within this theoretical framework, the concept of governance can refer to a multitude of processes where the various actors of the international system use mechanisms and rules in order to achieve certain desired goals. Governance connotes joint goal- oriented activities. It implies a system of rule that cannot be sustained by a traditionally organized governmental system.

The globalization process has accelerated the academic study upon the notion of governance, and mostly the notion of global governance. Globalization's main consequence is the intensification and the interdependence of economic and social activities thus, the emergence of an international network. Within this network, the volume of interaction is so great that the operative causes of many facts can be found in another geographic area or activity sector.

The IMF has considered, in 2000, four aspects of globalization: trade and transactions acceleration, capital and investment movement, migration and movement of people and the dissemination of knowledge and technology. However, the most important aspect regarding the current globalizing processes is the rapid and continuous way of interaction between business and work organization, economic transactions, socio-cultural resources and the natural environment.

The globalization associated aspects bring into play the question of global governance in a more imperative way. The multitude of actors and the multifaceted results of their actions amplify the demand for governance in international affairs either require a set of new rules or the establishment of a cross-border decision-making process. In the absence of a global government, a cross-border rule setting is a difficult task (Florini, Sovacool, 2009). The global economic crisis has proved that globalization renders the national governments less capable to deal effectively with issues preoccupying their state's territory.The current environmental challenges such as climate change,

cross-boundary water and air pollution, and over-fishing of the ocean are, also, directly linked to globalization.

There exist two options for global governance. On the one hand, the nation-states proceed to the signing of treaties or international agreements that serve as international guidance regarding global affairs and on the other, nation states pursue the institutional arrangement of international affairs via the evolvement of international organisations; World War II has been succeeded by a plethora of international organisations, with the United Nations (UN) to be the more preeminent of them, founded to deal with a range of global issues, from world peace to environmental sustainability, which nation states seemed to have difficulties addressing. The effectiveness of an international institution is measured by the extent to which its operation impels the various actors to behave in a different way than they would in the absence of such an institution.

The emergence of global energy governance

The nation states have been always the central players regarding energy resources management and environmental issues. The link between energy, economic development and national security has often made governments reluctant to address energy in global governance (Karlsson, 2011). However, the energy and environment issues constitute the most typical example of a multifaceted affair of global interest that implies the interaction of numerous and heterogeneous state and non-state actors.

The globalization era has affected also energy and environmental issues as governments have progressively given up the control of the strategic sectors of their economies by putting more confidence in markets, private initiatives and technology evolution (Yergin, 2011). The energy sector has been heavily influenced by these developments and new areas to investment and exploration have been opened led, principally, by private companies.

Energy and environmental issues, mostly climate change, are by their very nature transnational affairs since action responsibilities are difficult to attribute and the activities of one nation state might affect proximal and faraway regions (Luterbacher et al., 2001)

The energy sources scarcity coupled with their uneven distribution and the existing differences in natural constraints could influence the balance of power between nation- states. Additionally, the environmental challenges present an increased global challenge. They are expected to intensify the imbalances and the inequalities between developing and developed countries thus, to become a more frequent underlying reason of interregional and international disputes.

These new types of conflict will require the creation of new types of international interaction and cooperation. The current international structures seem insufficient to alleviate the current situation, particularly regarding climate change mitigation, and thus the reinforcement of the existing international institutions dealing with relevant issues becomes more and more essential.

Admittedly, the issues pertaining global energy governance require an innovative approach regarding governance at international level. The setting of rules that the global governance implies has to face two basic conceptual problems: the definition of common goods and the definition of externalities. The energy field includes numerous public goods issues and cross- border

externalities which are beyond the jurisdiction of national governments to address individually (Florini, Sovacool 2009).

In economic terms, the tragedy of the commons (Garrett Hardin,1968)(ElinorOstrom, 1990), signifies the depletion of a shared resource by individuals or nation states acting in an independent and rational way serving each one's self-interest, despite the understanding that the depletion of the common resource is harmful to the long-term common best interests. In recent years, the concept of commons is considered in relation to the issue of sustainable development engaging the economic growth with environmental protection, and the debate over global warming. It is related, also, with a variety of energy resources depletion such as water, deforestation and convention, non-renewable sources such as oil, gas and coal.

The trans-boundary externalities are caused by incidental byproducts of activities; Trans-boundary negative externalities, with environmental pollution to be the most obvious example, arise when the activities taking place within the territory and jurisdiction of one state nevertheless produce, normally unintended, consequences that affect the welfare of another state (Young, 1997).

Methodology

This study has been based in a combination of research tools as for energy and environment are multifaceted issues and they are more appropriately studied and better understood via a multidisciplinary analysis.

At a first place, we have used a descriptive research methodology in order to outline the current global energy trends. Following, based on the IR institutionalization theory, we argument on the emergence of energy governance institutionalization and the climate change mitigation factor.

For the scope of this study, we are going to present International Renewable Energy Agency (IRENA), the Renewable Energy and Energy Efficiency Partnership (REEEP) and International Energy Agency's (IEA) contribution to RE promotion .The selection was based on three criteria; they are outside the United Nations (UN) system their focus on RE sources and technologies and the "international" dimension of their jurisdiction. At the final part, we analyze the case study of the EU as a prominent example of energy transition through concerted efforts for RE development.

Analysis and Findings

The current global energy trends and challenges

Admittedly, the primary energy sources, oil and gas, have been politically charged commodities (Goldthau, Vitte, 2010) mainly due to the consumers concerns about supply security of supply and accessibility to the limited resources.

In their attempts to establish effective global energy governance tools, states, non –state actors and the various energy policy makers, have been primarily preoccupied by the geopolitical dimension of energy security and the supply chain smooth operation. It is important, though, for nation states, policy makers and energy scholars to broaden their perspective on how global energy governance can be achieved rather than focusing exclusively on the energy supply side and, thus, hydrocarbons transportation from producers to consuming countries. The effectiveness of the

current institutional architecture in setting up rules has to be accessed as well as the ability to assure the smooth operation of energy markets, which are the major actors of the global energy system. Besides, the institutional architecture of global energy system should be evaluated on the basis of the necessary reforms in order to respond effectively to the following major trends of the global energy system:

- The growing global GDP will contribute to the further grow of energy demand especially in the emerging economies. The rise of new consumers, such as China and India change rapidly the framework conditions of global energy markets and reorient energy commerce flows from West to East.

- An energy mix transformation is observed worldwide, with a decreasing volume in oil consumption and a gradual rise of natural gas. In recent years, a global gas market is under development driven by the expansion of liquefied natural gas (LNG) trade that is projected to increase especially in the Asia- Pacific region. The falling of indigenous gas resources have contributed also to the steady growth of shale gas drilling especially in North America.

- Environmental sustainability and climate change mitigation emerge as a global energy target. The steady increase in the use of renewable energy sources in a global scale creates the conditions for the development of a renewable energy sources (RES) global market. China is a pioneer in renewable energy (RE) technologies worldwide competing with USA and the EU. Besides, the Fukushima nuclear accident in 2011 raised questions of nuclear plants future and the possible alternative of this type of energy source.

Institutionalization of global energy cooperation. Climate change mitigation and RE promotion

Douglas North defines institutions (Douglas North, 1990) as the rules of the game according to which the various actors play. Institutions are structured by informal (declarations, norms) and formal constraints (rules, regulation, law enforcement) and they usually make use of an enforcement mechanism (Goldthau, Vitte, 2010).

The study of institutionalization of global energy cooperation is based on the assumption that the increasing interdependence of energy and environmental issues in a global scale increases, as well, the burden of cooperation failure. The energy market failures make the role of institutions crucial in setting incentives for cooperation and competition, in terms of lowering the prices and enhancing the quality of products and services, amongst state and non-state actors.

This study attempts to explain how the international energy institutions can increase the governments' concern on global energy and environmental issues and how they can increase the national capacity in dealing with these issues and setting –up a norm – generating process on commonly defined goals in the field of RE promotion and climate change mitigation.

Since the 1990s, climate change has become a major challenge, for both global and energy politics, with the core dividing line between advanced and developing economies (Dreyer, Stang 2014). Developing countries charge the developed ones with the primary responsibility of greenhouse gas emissions and remain reluctant to take on binding emission reduction targets (Dreyer Stange 2014).

Renewable energy promotion is a key component for a global sustainable energy transition and one of the major avenues to reduce CO2 emissions (Karlsson-Vinkhuyzen, 2012). The high cost of initial installation and implementation hinders large –scale renewable energy technologies investment in developing countries.

The creation of a stable and encouraging investing environment is based on a multilateral coordination including economic and trade provision, technology transfer, environmental and climate change mitigation treaties and other global political economy tools. Coordination in RE promotion emerges as a global public policy issue.

The **International Energy Agency (IEA)** was established in 1974, following the oil shocks in 1970s, in the framework of OECD oil consumer countries. IEA's main objective is the prevention of the global oil market malfunction and the creation of oil strategic reserves equal to 90 days of prior year's net for their respective oil imports.

IEA constitutes the most significant energy research organization. IEA's annual reports and databases consist of an important scientific tool for all energy actors, state and non-state, in the assessment of the present and expected energy facts and figures. It could be argued that IEA's scientific inputs could contribute positively in the day to day smooth functioning of global energy markets.

IEA is usually criticized for being a closed inter-governmental organization, with its membership limited to the OECD countries, promoting primarily oil consumption interests. A review of IEA membership status including the future major energy consumers like BRICS countries would definitely boost international energy cooperation and contribute positively in balancing global oil markets.

The emergence of sustainable development, as international policy objective, and the raising share of RE production and consumption, in order to tackle climate change, present a challenge for IEA. The establishment of IRENA in 2009 has led to a reconsideration of the prospects of renewable and sustainable energy solutions by IEA who added a separate RES division within the organization.

.The **International Renewable Energy Agency (IRENA)** was officially established in 2009[68] as the first intergovernmental organization dealing exclusively with RE issues and supporting member-states in their transition to sustainable energy solutions. IRENA vision is to offer an international platform for information and technical exchange as well as synergies and cooperation for all forms of RE.

IRENA is based in the United Arab Emirates and counts more than 149 members including the EU and recently China, a country with great potential in RE power production.

The governments of Germany, Denmark and Spain provided their strong support to IRENA's creation which provoked IEA's objections as the three countries are also IEA members.

[68] The idea of an RE international organization creation for RE lay back to 1981 United Nations Conference on New and Renewable Sources of Energy in Nairobi

IRENA's creation, itself, proves RE's growing importance in the global energy mix and the potential of an RE global market creation. However, IRENA is still in the making, acting mainly as an advisory body without imposing specific binding rules and constraints in its member states.

The United Kingdom and other partners launched the **Renewable Energy and Energy Efficiency Partnership** (REEEP) in 2002 at the Johannesburg World Summit on Sustainable Development (WSSD). Gathering 358 member organizations including NGO's, governments, industry associations and banks, REEEP became an international non-governmental organization in 2004 moving its headquarters to Vienna, Austria. REEEP's mission focuses on the reduction of greenhouse gas emissions and the acceleration of global market for sustainable energy primarily in developing and emerging countries markets (Parthon et al., 2010). REEEP is trying to identify which RE source and energy efficiency technology is the most appropriate for a specific region, advising its partners accordingly.

REEEP agency is differentiated from the other global energy agencies in three ways; REEEP has a different, more flexible, structure compared to the international governmental organizations, the majority of REEEP partners are non-governmental organizations (NGO) heads and it includes members from the RE industry and the financial institutions. The positive aspect of REEEP is the engagement of RE public and private actors, which, however has downsides: Regional and sectoral partners are willing to promote RE technologies at their benefit but they abstain from REEEP annual funding program, a fact that obliges the organization to be only be capable for short-term planning projects (Florini, Sovacool, 2009). Besides, the mission of REEP is applicable to a smaller scale compared to IEA or IRENA (Florini, Sovacool 2009). Thus REEP's activities focus on a more regional level.

Finally, REEEP follows an interesting funding process trying to fund exclusively the projects that are based in scale up business models and could be implemented in different countries, energy markets and regulatory frameworks. REEEP receives its funding from the engaged governments, basically from the UK and Norway, but also from banks, NGO's and business units.

IRENA and REEEP formalized their working relationship with a Memorandum of Understanding signed between the two bodies in 2011. Their co-operational framework will be based in the information and expertise exchange for a common synergy towards the enhancement of public awareness in favor of RE adoption.

The evolution of the EU as global energy and environmental actor

The EU is a *suis generis* case in the meaning that is neither traditionally understood as intergovernmental, regional organization nor, a state (Bretherton, Vogler 2006). Thus, both rationalist, prioritizing states as actors, and pluralist, conceptualizing a multi-actors system, approaches have not conceptualized the EU as international actor.

Perceiving the notion of actorness as the ability to stand as entity within the internal system and to exert influence beyond its borders, EU is an important external policy actor, whose influence is in constant transformation due to its internal developments (enlargements, Eurozone crisis etc.) in various policy areas, like the energy and environmental issues.

Energy has been the cornerstone of European integration. Steel and coal served as the pillars of the European Communities in early '50s. As the EU member-states industries and economies began to be depended on hydrocarbons use, their energy needs acquired an international dimension; the oil crisis of the '70s and the current gas disputes between Russia and Ukraine have shown that the lack of sufficient indigenous resources of the EU member–states causes severe imbalances between supply and demand, thus, making the EU dependent on foreign energy suppliers. Hence, energy security emerges as a core issue for the EU's external relations and policy orientations.

The Lisbon Treaty introduces a new legal status for the EU's international energy actorness. Also known as Reform Treaty, the Lisbon Treaty aimed to modernize EU structures so that EU functions more effectively after the entry of 12 new members. In addition, the Lisbon Treaty aims to strengthen the EU presence in the international affairs scene through the attribution of an "international legal status". This status will enable the EU to increase its role in the international scene and to promote its values and interests. The treaty supports the development of a common and cohesive foreign policy and the unity of the external action of the Union in all policy areas, including energy and environmental issues

Lisbon Treaty marks energy as priority domain, for the first time since the Founding Treaties. According to the Lisbon Treaty, the EU energy policy coordination should be based on the solidarity principle between member states, especially during energy supply crises. However, the exclusive right of each member-state to determine the operating conditions of its own energy resources, to choose its energy mix and the general structure of its energy supply will not be canceled. The Treaty does not provide a specific alignment mechanism of the EU member –states national energy interests.

The EC Communication on security of energy supply and international cooperation- "The EU energy policy: Engaging with partners beyond our borders" COM (2011) 539 published in 2011, is based on Lisbon's Treaty legal implications in the energy policy domain. This is the first EC Communication that, explicitly, invites the EU member -states to define objectives and joint actions in the field of the EU external energy relations.

This Communication tries to create a solid basis for a coordinated cooperation strategy between the EU and its energy partners in order to avoid the fragmentation of the EU internal energy market. The Communication contains a list of external energy policy recommendations including, inter alia, the strengthening and the modernization of the global energy governance system in order to facilitate the promotion of sustainable energy sources via the active cooperation between the EU and the International Energy Agency (IEA), the International Energy Forum (IEF), the International Partnership for Energy Efficiency Cooperation (IPEEC) and the International Renewable Energy Agency (IRENA).

Sustainability and RE development. An EU energy policy pillar[69]

Environmental sustainability presents a branch of the EU internal energy market integration as well as an important parameter of EU's energy security with significant external dimensions. The EU has entered actively the international debate on climate change mitigation since 1990's as supporter of Kyoto Protocol and the United Nations Framework Convention on Climate Change (UNFCCC) making its first commitments on emissions reduction.The EU renewable energy strategy is a key instrument towards a sustainable energy mix and the reduction of fossil fuels dependence and it is placed amongst the most ambitious ones on a global scale (Kottari, Roumeliotis 2013).

The significant support of the EU, and its member-states, for the renewable energies (RE) expansion is reflected in the Directive 2009/28/EC (hereafter the Directive) launched by the European Commission (EC) in 2009. This Directive, introduced binding legislative measures for the implementation of the 20-20-20 set of goals. The Directive includes inter alia the increase of the share of renewable energy, in the total gross final consumption (Segers, 2008) of the EU member–states, to be 20% by 2020. The Directive, also, requires the simplification of the administrative regimes faced by renewable energy, together with improvements to the electricity grid, to improve access for electricity from renewable energy.

The "EU package on climate and energy", which was agreed on by the European Parliament and the European Council in December 2008, passed into law in June 2009. According to the EC's 2013 Renewable Energy Progress Report, since the adoption of the Directive most EU member-states have experienced a significant growth in their renewable energy consumption. As data and analysis prove, the EU as a whole is on its trajectory towards the 2020 targets with a renewable energy share of 13% in 2011. Nevertheless, the RE implementation progress varies greatly across the EU member-states. Germany, Sweden, Denmark and Austria are ranked in the first places of both RE targets implementation and energy production from RE across the different RE technologies while some other states need to undertake additional efforts.

Second, as said above, the Directive introduces, for the first time, mandatory national targets. Each member-state should enhance the effectiveness of its RE policy, so as to bridge the gap between the member-states having a well developed RE industry and those who do not, and in order to create a stable investment environment for the development of all RE technologies. The holistic, target based logic of this Directive seems, though, to set an important barrier towards the successful local implementation of RE policy and technologies (Michalena, Hills 2012).

Indeed, the issues related to RE are characterized by a great complexity stemming from the variety of potential RE sources and technologies. This complexity results from each member-state's different capabilities and special conditions and factors favoring, or not favoring, the development. Under the provisions of the Directive 2009/28/EC, member– states are required to draw up National RE Action Plans (NREAPs) including the provisions of each member-state to facilitate the RE development in order to achieve the 2020 target. According to the EU Commission

[69] This sub-section is part of the author's publication entitled RES development on the EU- the Greek case : Great potential with modest results, EUCERS Newsletter no 35, 2014: http://www.kcl.ac.uk/sspp/departments/warstudies/research/groups/eucers/newsletter35.pdf

Communication of 2011, entitled "Renewable Energy: Progressing towards the 2020", a review of NREAPs shows a faster pace of RE growth for all member-states in the years up to 2020. This fact could signify that the new approach starts bearing fruits.

The negative effects of the Eurozone crisis on the RE sector, especially regarding the capital costs, should not be neglected as well. The economic crisis combined with the delayed infrastructure projects, administration barriers and disruptive changes to support schemes, hampers the full implementation of 2020 RE targets.

2030 framework for climate and energy policies. What a place for RE?

The recently adopted EU 2030 framework for climate and energy policy responds to the UN call for a conclusion on climate change mitigation targets by March 2015, in order to set the agenda of the UN meeting of December 2015 in Paris, seeking a new global climate accord. The adoption of this framework may be described timely wise allowing the EU to defend its place as the global pioneer in setting climate mitigation measures (Buchan et al., 2014). However, this cannot even imply the effectiveness of these goals in regional (EU) level or a substantial positive contribution to the required, as defined by the environmental scientists, efforts required in a global scale.

The adoption of the 2030 framework for climate and energy policies was not only a matter of EU leadership in the international environmental negotiations; it was also an internal policy necessity as it was high time to review comprehensively and correct the inconsistencies of the 2007-2009 Climate and Energy package resulted in the "20-20-20" goals by 2020 (Marcu, Egenhofer 2014).

However, contrary to the 20-20-20 package, in 2030 framework, renewable energy regime is rather loose; a 27 % goal is set, "binding at EU level", but without the definition of national binding targets. It is highly disputable whether this goal is going to be delivered collectively, at EU level. It is, accordingly, highly disputable if national renewable energy policies would be adjusted to the 27% goal. The analysis of the previous section has precisely reveal EU member-states discrepancies in renewable energy promotion and the unsuccessful successful local implementation of RE policy and technologies.

Renewable energy expansion under the 20-20-20 regime has been primarily criticized for producing expensive forms of carbon abatement ((Buchan et al., 2014). However, renewable energy been proved more efficient in producing clean energy forms than the Emissions Trading System (ETS) did. ETS, though, has been chosen as the main EU's instrument (40% emission reduction) to combat climate change up to 2030.

Conclusions & Discussion

Similarly to other issues preoccupying the international relations agenda, it is more likely to continue to observe in the energy field various actors interplaying, often in a contradicting way, and trying to set up rules to serve their own interests,. Accordingly, like other international organizations, energy organizations are called to adapt to economic and geopolitical power shifting. Together the challenge of RE expansion and the energy transition towards low carbon economies constitute a compelling rationale for a sustained research agenda in global energy governance.

The institutional framework of the global energy governance is rather fragmented and divided up by energy source or sector. *The international legal regimes and the organizations dealing with energy tend to be limited in scope and membership with few synergies and are ill-equipped to handle the energy world of the future* (Dreyer, Stang 2014).

The emergence of RE sources and technologies, as a key tool for climate change mitigation, made the foundation of an organization like IRENA imperative. Whether the world needs another energy institution or a kind of an overarching energy institution with an integrated approach towards the energy and environmental issues able to harmonize the energy policies of the various energy players is a broader question but, such a prospect seem highly unlikely. An overarching regime able to bridge fundamental gaps in the interests of the players – producers, importers, transit countries, old and new CO2 emitters – is not very encouraging for the future (van de Graaf, 2012).

IEA's and IRENA's roles are supposed to be complementary, but – in reality their cooperative scheme is only limited to a joint approach of RE data and statistics and in expertise sharing in the fields of technology and operation. These initiatives, though, do not really open an institutionalised dialogue about the future of RE further deployment amongst the member-states of the two organisations, nor does it support the active engagement of the RE private actors. (Kottari, Roumeliotis 2013)

The EU as an energy consumer *par excellence* and due to its normative power will continue to attract the global energy interest. However, EU energy and climate policies, under the burden of the intergovernmental decision making process, are often competitive rather than complementary. EU needs to adopt a more integrated approach of global energy and environmental issues to achieve a higher level of credibility and to enhance its influence. *The EU will need to strengthen its ability to act coherently, consistently and as one at international level and engage in strengthening current multilateral regimes in energy field* (Dreyer, Stang 2014).

The newly formed European Commission, after the European Parliament elections, has reserved functional changes for the implementation of the EU energy and climate policy. The DGs energy and climate have been combined under a common portfolio, as recognition of the common and concerted action should be taken in both sectors. An Energy Union has been created in order to support efficiently member states in decreasing energy imports and the EU in leading the fight against climate change.

Although the so –called 20-20-20 targets have explicitly set rules towards a substantial reduction of green house gas emission through renewable energy and energy efficiency promotion, the new 2030 framework for climate and energy policies downgrades these policy instruments towards the Emission Trading Scheme (EU-ETS). We have observed that country-specific support schemes for renewable energy development haven't acquired the desired results and the RE development co-benefits haven't reached EU peripheral countries. We argue that effective EU RE governance manages to counterbalance economic efficiency, technological feasibility and political justice amongst EU member –states. We doubt that the 2030 framework set the appropriate preconditions for a future EU energy transition.

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