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The European Union (EU) and the Emerging Powers in Subduing the Energy Security and Sustainable Development Challenges: A Study Focus on the EU and China Policies

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Abstract

Introduction

Within the two last decades, the energy security and the sustainable development have been increasingly posed as the main challenges for many countries worldwide. In the midst of ongoing depletion and quantity diminishment of existing natural resources, most countries, particularly the industrialized countries and developing countries, will want to ensure that security of energy supplies is available, sufficient, affordable and sustainable through variety of measures in the long runs. At the consecutive paces, the issue of sustainable development has been inevitably an integral component of every endeavor to pursue the energy security objectives, chiefly related to renewable energy and reduction of gas emissions. Therefore, countries worldwide through many multilateral fora, namely the United Nations (UN) and World Trade Organization (WTO) and informal inter-state groups, like G-7 and G-20 have incorporated these two global challenges into the negotiations agenda in order to generate effective measures for problem solving. Millennium Development Goals (MDG) and Rio 20+ Mandates are two of the main results of these multilateral efforts.

Accordingly, within these multilateral fora the European Union (EU) has been for long periods playing the dominant roles in terms of initiative and policy-making. On the other hand, in the two last decades, four countries, namely Brazil, Russia, India, and China have been experiencing incredible economic growth, and have been predicted to become the

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“engine of new demand growth and spending power” in the forthcoming periods. These four countries, commonly known as BRIC countries, are largely considered as the emerging powers and thus have been expected and prophesied to play the decisive and prominent roles within the upcoming multipolar-multilateral relations particularly in the energy security and sustainable development domains. In particular, People Republic of China (hereinafter referred as China) as the sole country having the magnitude potential to play as a new emerging power in terms of demographic, political, economic and weight, has been implementing the uncompromising China-first energy security mindset and China-first geostrategic energy security programme in many occasions. In contrast, the EU as prominent actor in multilateral negotiations on energy security has been persistently concentrated on the attainment of the "20/20/20" climate/energy targets (including an increase to 30% of emissions reduction if the conditions are right) pursuant to EU 2020 vision as the golden bridge toward the smart, sustainable and inclusive growth. Hence, this paper attempts to analyze the differing approaches and methods which the EU and China employ in particular from the policy making and juridical perspectives and thus attempts to contribute in the current discussions concerning EU and China, as the Emerging Power, relations in the field of global energy security and sustainable agendas.

Keywords: *Global Energy Security, Sustainable Development, Green Growth, BRIC Countries, China-first geostrategic energy security strategy, EU 20/20/20 climate and energy targets 2020*

Introduction

Within the two last decades, the energy security and the sustainable development have been increasingly posed as the main challenges for many countries worldwide. In the midst of ongoing depletion and quantity diminishment of existing natural resources, countries worldwide, in particular the EU and China, as the leading country of BRIC (Brazil, Russia, India, China) Countries (Goldman Sachs, 2003) will be importing 80 per cent of their fossil-energy by 2030 (B. Lee, 2012). Thus, EU as developed region and China as the largest developing country worldwide, will want to ensure that security of energy supplies is available, sufficient, affordable and sustainable through variety of measures in the long runs. At same time, the issue of sustainable development namely green growth, relating to concern of environmental sustainability and global climate change, has been apex of priority agenda in EU and in China, because both of these herculean nation-state powers desire that in pursuing the energy security, the countries of the region will want to ensure that energy supplies are available, sufficient, affordable and sustainable. In addition, at the same time they are inevitably to consider the ecological and socio-justice implications of the energy security efforts to prevent profound externalities within their economic developmental efforts which include degradation of the environment, spreading of diseases, and increasing rate of child mortality and weakening of social services. (UNESCAP, 2007).

In terms of sustainable development, the EU and China, which altogether account for approximately 28 per cent of energy-related CO₂ emissions, have been carrying out significant sustainable development based measures such as making greater use of alternative and renewable energy up to now. Nevertheless, under the ongoing rapid economic growth of China, the sustainable development became to be focus of China's political agenda during the Presidency of Hu Jintao and Premiership of Wen Jiabao in 2003, and thus serve as the runner-up after the energy security policy, known as the China-first policy. (B. Lee, 2012).

On the other hand for the EU, the issue of the sustainable development and sustainability, security of supply and competitiveness of energy has been for the last two decades becoming the apex of its policies, chiefly the external ones. Indeed, the EU as the undisputed leader in global environmental and climate change politics, has been pursuing the strong sustainable development and environmental for decades, based on internal and external vested interests, as the key instrument in the external policies with BRIC Countries. To certain extent, these

efforts have culminated in the EU Action Plan “20/20/20 Targets”, which comprise greenhouse gas (GHG) emissions reduction, renewable resources consumption leveling-up, and primary energy use reduction.

Indeed, the existing issues of energy security and sustainable development can to a large extent create the excellent mutual cooperation spaces for the both global actors, as they face similar challenges in achieving a sustainable environment and secure energy mechanism. Nevertheless, there has been none of strong conceptual and empirical indications that EU and China are to gear toward convergence and thus synergic partnership within these two global challenges in the intermediate and in the long runs. Indeed, EU and China have to significant extent employed different approach and methods in tackling and managing the energy security and sustainable environment both in the domestic and international spheres, notably within the three observed aspects, which are: governance and international-multilateral negotiations and agreements postures. Embarking from the exposition of the facts, this paper attempts to analyze the differing approaches and methods employed by EU and China, as the leading country of BRIC, in particular from the policy-making and juridical perspectives. Additionally, this paper utilizes the economic analysis transnational law in the field of EU and China energy security and sustainable environment relationships (William J. Aceves, 1996). Moreover, in order to obtain holistic and inductive ideographic understandings and explanations this paper employs the qualitative research approach as well. (Hasudungan, 2012).

Embarking from those introducing points, the substances of this paper are to be organized into five sections. In the first, the backgrounds of the research problems are to be broadly outlined which mainly related to the two main global agenda, namely energy security and sustainable development, whereby within the issue of green growth is included. Accordingly, the differing approaches and methods of the EU and the People Republic of China as the leading country of BRIC are briefly introduced. In the second, this paper describes the position of the EU and China within the Turbulences of Energy Security and Sustainable Development Challenges by means of a series statistical information, which include their negotiation efforts in the multilateral fora, namely in the United Nations, World Trade Organization and in the informal forum of cooperation, G-20. In the third section of this paper, prevailing approach and common platform of BRIC Countries with regard to the energy security and sustainable development to establish a new economic and socio-political

multi-polar world shall broadly described; followed by the comparison and analysis of distinguished approaches and methods employed by the EU and China as the most prominent country in BRIC in tackling and managing the energy security and sustainable development challenges are to accomplish the objectives in the fourth. Finally, the summing up of the research study and feasible recommendations with regard to the global energy security and sustainable environment challenges shall be provided in the in the fifth section of this paper.

The European Union and China within the Turbulences of Energy Security and Sustainable Development

Within the two last decades many countries worldwide, in particular, the EU and China as the largest developing country and the most prominent BRIC country, have been facing the energy security as well as the sustainable development, chiefly related to climate change, because of at least two reasons: First, the impact of high and often volatile energy prices and second, concerns over environmental sustainability and particularly about the global climate, whereby these two challenges have become nowadays integral part of non-traditional security turbulences. From a theoretical perspective, these common concerns over the energy security and sustainable development are to provide golden pathways toward an excellent field for cooperation for both the EU and China, and thus can generate mutual significant benefits while complementing each other in several aspects of development efforts (J. Wouters, J.C.Defraigne, *et.al*, 2012)

With regard to the energy security, several international institutions have proposed following definitions:

According to *Asia Pacific Energy Research Centre*—In its report, *A Quest for Energy Security in the 21st Century*, the Asia Pacific Energy Research Centre defines energy security “as the ability of an economy to guarantee the availability of energy resource supply in a sustainable and timely manner, with the energy price being at a level that will not adversely affect the economic performance of the economy. Furthermore, European Union have stated: The aim of the European Union is to ensure the uninterrupted physical availability of energy products on the market, at a price which is affordable for all consumers, private and industrial, while respecting environmental concerns and looking towards sustainable development. While United Nations Development Programme (UNDP) has defined the term as follow: defined energy security as the availability of energy at all times in various forms, in sufficient

quantities and at affordable prices, without unacceptable or irreversible impact on the environment. These conditions must prevail over the long term. Energy security has both a producer and a consumer sides. (UNESCAP, 2007)

Moreover, with regard to the sustainable development:

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: First, the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and Second, the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.” (World Commission on Environment and Development, 1987)

In the subsequent institutional opinion pertaining the sustainable development:

“56. We affirm that there are different approaches, visions, models and tools available to each country, in accordance with its national circumstances and priorities, to achieve sustainable development in its three dimensions which is our overarching goal. In this regard, we consider green economy in the context of sustainable development and poverty eradication as one of the important tools available for achieving sustainable development and that it could provide options for policy making but should not be a rigid set of rules. We emphasize that it should contribute to eradicating poverty as well as sustained economic growth, enhancing social inclusion, improving human welfare and creating opportunities for employment and decent work for all, while maintaining the healthy functioning of the Earth's ecosystems.” (UNCSD, 2012)

Thus it has been globally considered that the issue green growth or green economics nowadays is an integral part of the sustainable development agenda. Several international organizations proposed conceptual perspectives on green growth:

“UNEP defines a green economy as one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities.” In practice, the green economy very much related to the implementation of engine of developments, creation of employment and poverty eradication. In more concrete forms, green economy refers to the increasing of green investment, quantity and quality of jobs in

green sectors, and share of green sectors in GDP. In contrast, green economy strives to decrease energy/resource use per unit of production, CO2 and Pollution Level/GDP and Wasteful Consumption.” (UNEP, 2011)

Moreover, according to the Organization for Economic Co-operation and Development (OECD) as “fostering economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies” (OECD 2011: 9). The United Nation’s Environmental Program (UNEP) established a green economy concept which aims at an “improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities.” (UNEP 2012) According to the United Nation’s Economic and Social Commission for Asia and the Pacific (UNESCAP), Green Growth “integrates the economic and socio-political growth within a limiting global environment capacity and its limited natural resources”, with prosperity going “hand-in-hand with ecological sustainability” (UNESCAP 2011: 1), and World Bank researchers state that “Green Growth is about making growth processes resource-efficient, cleaner and more resilient” (World Bank 2011: 3).

At present, the factual circumstances with regard to the energy security can be illustrated in following tables (IEA Energy Outlook, 2012):

Figure 1.1 • World primary energy demand by fuel in the Reference Scenario

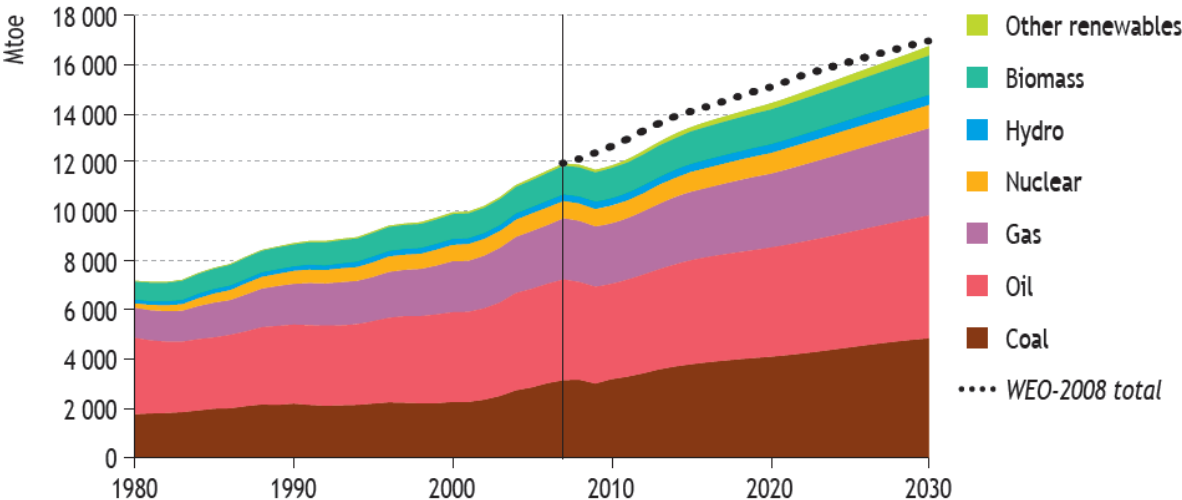


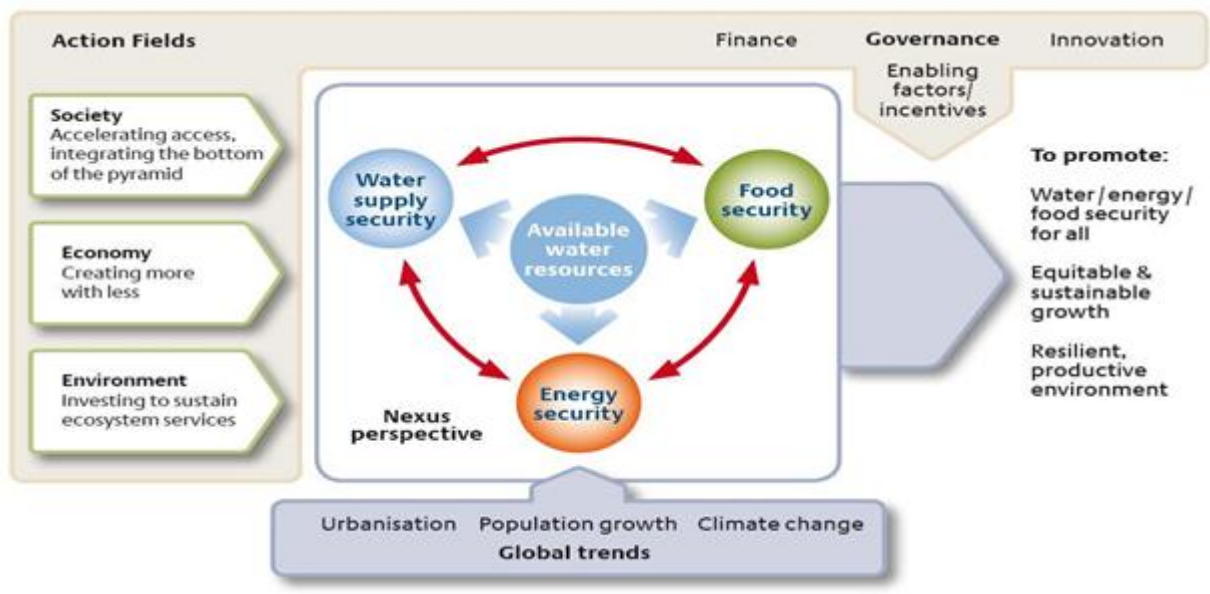
Table 2.1 ▶ World primary energy demand and energy-related CO₂ emissions by scenario (Mtoe)

	2000	2010	New Policies		Current Policies		450 Scenario	
			2020	2035	2020	2035	2020	2035
Total	10 097	12 730	14 922	17 197	15 332	18 676	14 176	14 793
Coal	2 378	3 474	4 082	4 218	4 417	5 523	3 569	2 337
Oil	3 659	4 113	4 457	4 656	4 542	5 053	4 282	3 682
Gas	2 073	2 740	3 266	4 106	3 341	4 380	3 078	3 293
Nuclear	676	719	898	1 138	886	1 019	939	1 556
Hydro	226	295	388	488	377	460	401	539
Bioenergy*	1 027	1 277	1 532	1 881	1 504	1 741	1 568	2 235
Other renewables	60	112	299	710	265	501	340	1 151
<i>Fossil fuel share in TPED</i>	80%	81%	79%	75%	80%	80%	77%	63%
<i>Non-OECD share of TPED**</i>	45%	55%	60%	65%	61%	66%	60%	63%
CO₂ emissions (Gt)	23.7	30.2	34.6	37.0	36.3	44.1	31.4	22.1

* Includes traditional and modern biomass uses. ** Excludes international bunkers.

Note: TPED = total primary energy demand; Mtoe = million tonnes of oil equivalent; Gt = gigatonnes.

Moreover, in a broader perspective the long-runs interlink between the energy security and sustainable development has been described by Bonn 2011 Nexus Conference on Water, Energy, and Food, which is best described in following diagram:



The issues on the global energy security and the sustainable environment or more specifically the green economics have since the two last decades been incorporated into the prolonged negotiations in the main multilateral forum, namely within the United Nations (UN) Conference on Sustainable Development and particularly in the he United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). From these multilateral

negotiations at least two main critical issues which are then becoming common agenda for existing 193 UN Member Countries, notably the two main agendas of UN Rio+20 as well as the Millenium Development Goals (MDG) Agenda. In the UN Conference on Sustainable Development or commonly known as UN Rio 20+ there are two main agendas which have been commonly worked out and thus pursued, which are: First, the implementation of a green economy in the context of sustainable development and poverty eradication; and Second, the institutional framework for sustainable development. Moreover, these agendas have been elaborated into 7 (seven) critical issues, requiring priority attention, which comprise: green jobs, sustainable cities, food security and sustainable agriculture, water, oceans and disaster readiness. With regard to energy security based on the Resolution ([A/RES/64/236](#)) agreeing to hold the United Nations Conference on Sustainable Development (UNCSD) in 2012 - also referred to as 'Rio+20', stipulates:

“Energy is central to nearly every major challenge and opportunity the world faces today. Be it for jobs, security, climate change, food production or increasing incomes, access to energy for all is essential. Sustainable energy is needed for strengthening economies, protecting ecosystems and achieving equity”. Therefore, the UN strives to promote the sustainable energy for all initiative to ascertain universal access to modern energy services, improve efficiency and increase use of renewable sources.” (UNCSD 2012)

Furthermore, the issues concerning the energy security as well as the sustainable development have been incorporated within the primary focus agenda of the Group of Twenty (G-20) forum, whereby (G20) is the premier forum for international cooperation on the most important issues of the global economic and financial agenda. G-20 Member Countries, represent almost:

- (1) 90% of global GDP.
- (2) 80% of international global-trade.
- (3) 2/3 of the world's population lives in G20 member countries.
- (4) 84% of all fossil fuel emissions are produced by G20 countries. At present China and the EU are prominent Member Countries of G-20 in particular related to the energy security and sustainable development negotiations. Through several summits, G-20 has been the main partner of International Energy Agency (IEA) not only to foster energy, but also highlighting other crucial energy challenges in the regional and global spheres. (M.v.der Hoeven, 2011)

BRICS' Common Platform on the Energy Security and Sustainable Development

The term of BRIC (Brazil, India, Russia and China) was introduced initially when the multi-national consultant firm Goldman Sachs published its report in 2003 which identifies these four countries as the global economic powers of the future. Subsequently South Africa joined to the group (BRICS), and then Indonesia has been thus considered as peripheral member of these prominent countries or so-called BRIICS. Moreover, according to a prominent international politics scholar “the long-term trajectory that foresaw the emergence of these new economic powers has been elevated. Catapulted forward by their economic resilience during the global financial crisis, the BRICS already have a more prominent place and role in the global system. The prediction less than a decade ago was that they would account for fewer than 10% of global output at the end of the first decade of the twenty-first century. Already they hold twice that share.” (P. Drysdale, 2011).

Within the last decade it has been observable that BRICS countries have several common characteristics, which comprises of three main aspects: Firstly, several , they possess a range of economic, military and political power resources and some capacity to contribute to the production of regional or global order. Secondly, they share the belief that they are entitled to gain a more influential role in world affairs. And thirdly, they are outside or on the margin of the US and EU unilateral and multilateral structures and is not closely integrated in an alliance system with the US and EU. Thus, this serves as the combination of factors, which explains the eagerness of the BRICS ‘to strengthen their mutual relations and to promote alternative or complementary international forums and linkages beyond the predominant Western-dominated institutions (EU DG for External Policies, 2011).

Moreover, a well-known scholar added: “It is true that each of the BRICS individually shares a competitive trade or resource relationship with the other, yet their divergences over the pressing issues of common international economic interest—global recovery, trade, finance, development, climate change, global economic governance—are much narrower, typically, than those with the West. It is this ‘co-dependency that implicitly supplies the BRICS their mortar: that if they do not hang together, they will hang separately as defections are progressively engineered within their ranks by more powerful constituents within the multilateral system” (Gupta S., 2011)

With regard to the energy security and sustainable development, based on the official summit meeting on 16 June 2009, in Yekaterinburg at the base of the Ural, the leaders of Brazil, Russia, India and China (or BRIC) issued the joint statement as the initial platform, whereas three relevant paragraphs state;

“7.The implementation of the concept of sustainable development, comprising, inter alia, the Rio Declaration, Agenda for the 21st Century and multilateral environmental agreements, should be a major vector in the change of paradigm of economic development.

8.We stand for strengthening coordination and cooperation among states in the energy field, including amongst energy producers and consumers and transit states, in an effort to decrease uncertainty and ensure stability and sustainability. We support diversification of energy resources and supply, including renewable energy, security of energy transit routes and creation of new energy investments and infrastructure.

9.We support international cooperation in the field of energy efficiency. We stand ready for a constructive dialogue on how to deal with climate change based on the principle of common but differentiated responsibility, given the need to combine measures to protect the climate with steps to fulfill our socio-economic development tasks.”

In the subsequent cooperation, the BRICS countries met on 29 March 2012, in New Delhi, India, under the theme "Partnership for Global Stability, Security and Prosperity and issuing the New Delhi Declaration on Partnership for Global Stability, Security and Prosperity, which calls for accelerating growth, sustainable development, and food and energy security. At least there are two main decisions resulted from this declaration: Firstly, on climate change, the Declaration welcomes the outcomes of the UNFCCC Conference in December 2011, held in Durban, South Africa, and reiterates their commitment to addressing climate change in accordance with the principles of equity and common but differentiated responsibilities and respective capabilities. The Declaration underscores that climate change action should focus on “sustainable and inclusive growth” rather than “capping development.”

Secondly, on sustainable development, the Declaration highlights the opportunity presented by Rio+20 to renew political commitments to sustainable development and underscores the importance of the principle of CBDR, Agenda 21 and the Johannesburg Plan of Implementation (JPOI). It notes the relevance of the conference themes, namely green economy in the context of sustainable development and poverty eradication, and the institutional framework for sustainable development (IFSD). The Declaration further affirms that the “still to be defined concept” of green economy has to be seen as a means for achieving sustainable development and poverty eradication, rather than an end, and opposes

any resulting barriers to trade and investment. The also Declaration reaffirms the Millennium Development Goals (MDGs) as fundamental, stressing the need for enhanced financial support to achieve the goals by 2015 and beyond. (BRICS New Delhi Declaration, 2012)

The China's Energy Security and Sustainable Development Policies Pursuant to China 12th Five Year Plan

As the largest developing country with more than 1.3 billion of population, People's Republic of China (hereinafter referred as "China") is not only experiencing profound industrialization, informaziation, urbanization, marketization and internationalization in multi-aspects of development, but also accelerated transformations within its economic structures and socio-political ones. Therefore, China, under the current leadership of Central Committee of the Communist Party of China (CPC), strives to develop and move forward to transform the growth pattern and to maintain a stable growth in per capital national income consecutively. Particularly, China carries out the national development programmes, which have been outlined comprehensively in the China 12th Five Year Plan, under the guiding principles which consist of: the socialism with Chinese characteristics introduced by Deng Xiaoping as well as principle of Three Represent put forwarded by Jiang Zemin, former China President in year of 2000. Three Represents" refers to what the Communist Party of China currently stands for, which are: It represents the development trends of advanced productive forces; It represents the orientations of an advanced culture; It represents the fundamental interests of the overwhelming majority of the people of China, which were put forwarded by Jiang Zemin, former Chinese president, in 2000. (cf. J. Fewsmith, 2012, China.org.cn)

Moreover, the developmental and policy efforts in China are to large extent influenced by the main traditional philosophies of Chinese people, notably Confucianism und Daoism, which have implicitly been emphasizing on upholding the sustainable development and energy. Accordingly, in terms of sustainable development ".....China is committed to pursuing sustainable development as a national strategy. As a matter of fact, sustainable development is embodied in China's traditional values. Over 2,000 years ago, the great Chinese philosophers Mencius observed that "refraining from over fishing will ensure fishing last forever" and "cutting wood according to the season ensure the health of forest" are the means to achieve harmony between man and nature." (Indian Express, 2013)

On the other hand, China due to its rapid economic growth within the last two decades China is experiencing a highly increasing dependency upon foreign supply of energy to fulfill the domestic demands. It has been projected that in 2020, China's total primary energy consumptions shall reach 98, 3 quadrillion Btu. In more specific terms, nowadays China as the largest developing country is experiencing an ever-increasing dependence upon foreign supplies of fossil energies, chiefly oil and coal in the long-runs, whereby according to scholar's observation "Coal still meets the majority of Chinese energy needs providing about 70 percent of total energy consumption for the country in 2011.² Currently, oil makes up only around 20 percent of the country's energy requirements. Even so, China's external search to secure an oil supply rightly dominates discussion of its energy security policies largely because the country's growing dependence on foreign oil is seen by Beijing as an area of potential strategic vulnerability. (J.Lee, 2012). In addition, at present China has been relied upon foreign imports for over 50 percent of the oil it consumes, expected to rise to 60—70 percent of total consumption by 2015, according to International Energy Agency (IEA) estimates. Outpacing overall rates of Chinese GDP growth, consumption of oil has increased by around 12 percent each year since 1980. (BP Statistical Review of World Energy 2011)

Accordingly, in response to these circumstances the China Government has devised and set out several strategic targets on the energy security and sustainable development, which are best illustrated in the table: (China 5 Year Plan 2011-2015)

Target		2010	2015	Change over 5 years (%)	Forecast or Binding
Farmland reserves (billion mu)		1.818	1.818	0	binding
Decrease in water consumption per unit of value-added industrial output (%)				30	binding
Increase of water efficiency coefficient in agricultural irrigation		0.5	0.53	0.03	forecast
Increase of non-fossil fuel usage in primary energy consumption (%)		8.3	11.4	3.1	binding
Decrease in energy consumption per unit of GDP (%)				16	binding
Decrease in CO ₂ emissions per unit of GDP (%)				17	binding
Total decrease in emissions of major pollutants (%)	Chemical Oxygen Demand (COD)			8	binding
	Sulphur Dioxide (SO ₂)			8	
	Ammonia Nitrogen			10	
	Nitrous Oxides			10	
Forest Increase	Forest coverage rate (%)	20.36	21.66	1.3	binding

Forest stock (m ³)	137	143	6
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Additionally, from the China 12th Five Year Plan there are several key points with related mainly to the energy security and sustainable development to be pursued in the operational level, which are: *Firstly*, to accelerate the reform of energy production and utilization mode, which means sticking to the guidelines of conservation first, diversified development based on domestic resources and environmental protection. Strengthen reciprocal international cooperation, adjust and optimize energy structure, and build a safe, stable, economical and clean modern energy industry system. This goal is to be achieved through: First, Promoting the development of diversified and clean energy sources, Second, optimizing the layout of energy development, Third, strengthening the construction of energy transmission channels, whereby this can be achieved through the construction of: Coal development and transformation, Stabilizing oil output and increasing gas output, Nuclear power, Renewable energy sources, Oil and gas pipe networks, and Power grids (Para.11, China 12th Five Year Plan). *Secondly*, the China government is to perform the green development, construct energy conservation and environment friendly society. Moreover, the China Government shall confront increasing resource and environmental restrictions, thus crisis awareness should be enhanced. Additionally, China will establish green and low carbon development ideas and focus on energy conservation and emission reduction, improve incentives and constraint mechanisms, and stimulate the establishment of resource-saving and environmentally friendly production and consumption to strengthen sustainable development and improve ecological standards. These efforts are then carried out by means of: First, Control Greenhouse gas emissions; Second, Increase adaptability to climate change; Third, Launch wide ranging international cooperation. (Chapter VI, China 12th Five Plan). *Thirdly*, China shall intensify the efforts on environment protections, mainly through: Enhancing the reduction and administration of pollutant emissions, Taking precautions on environment risks, and Enhancing environmental supervision. (Chapter 24, China 12th Five Year Plan).

In general it is to be inferred that there are three main driving factors for the China's energy security and sustainable development particularly under the framework of the 12th Five Year Plan, which are: *Fist*, energy security, from both an internal and external perspective. On the one hand, being able to secure a sufficient supply of energy domestically is already a major challenge given the extremely rapid growth of China's economy and its skyrocketing

demand for energy. This holds especially for the domestic supply of coal, given infrastructural bottlenecks, and for the necessary expansion of China's power sector in order to keep up with demand. On the other hand, its rapidly growing energy demand is also making it more dependent upon foreign, imported energy sources, a matter of increasing concern to the Chinese government: for crude oil, import dependency stood at 56 per cent for 2009 and is expected to surpass 75 per cent within the next two decades; for natural gas, it stood at 10 per cent and might reach 30 per cent by 2015.

Second, environmental concerns are playing an increasingly important Role due to pollution associated with the enormous use of coal in China's economy; causing problems like air pollution, acid rain and severe public health problems. *Third*, the third motivation for China to push forward with a progressive energy policy is the economic opportunity which it sees in developing low-carbon energy technologies.

The EU Energy Security and Sustainable Development Policy Pursuant to the Europe 2020 on a Strategy for Smart, Sustainable and Inclusive growth

Within the Communication of the EU Commission dated 03.3.2010, the EU has explicitly envisaged its long-terms plans concerning the sustainable growth objective, which means "...building a resource efficient, sustainable and competitive economy, exploiting Europe's leadership in the race to develop new processes and technologies, including green technologies, accelerating the roll out of smart grids using ICTs, exploiting EU-scale networks, and reinforcing the competitive advantages of our businesses, particularly in manufacturing and within our SMEs, as well through assisting consumers to value resource efficiency. Such an approach will help the EU to prosper in a low-carbon, resource constrained world while preventing environmental degradation, biodiversity loss and unsustainable use of resources. It will also underpin economic, social and territorial cohesion within the EU."

Therefore, to achieve the objectives and to maintain the conducive circumstances, chiefly pertaining the energy security and sustainable development, the EU is to strive following two main strategic agendas:

Firstly, combating climate change by achieving our climate goals means reducing emissions significantly more quickly in the next decade than in the last decade and exploiting fully the potential of new technologies such as carbon capture and sequestration possibilities. Improving resource efficiency would significantly help limit emissions, save money and boost economic growth. All sectors of the economy, not just emission-intensive, are concerned. We must also strengthen our economies' resilience to climate risks, and our capacity for disaster prevention and response.

Secondly, clean and efficient energy by meeting our energy goals could result in € 60 billion less in oil and gas imports by 2020. This is not only financial savings; this is essential for our energy security. Further progress with the integration of the European energy market can add an extra 0.6% to 0.8% GDP. Meeting the EU's objective of 20% of renewable sources of energy alone has the potential to create more than 600 000 jobs in the EU. Adding the 20% target on energy efficiency, it is well over 1 million new jobs that are at stake. (EU Commission COM, 2010)

However, in order to fully enable the implementation of those objectives, within the operational level, the EU has promulgated additional policy, which commonly known as the EU Green Paper on a 2030 framework for climate and energy policies, adopted by the Council on March 2013. The key objectives of this policy are to reducing greenhouse gas emission, securing energy supply and supporting growth, competitiveness and jobs through a high technology, cost efficient approach. Furthermore, the *raison d'etre* for this policy are as follows: First, long investment cycles mean that infrastructure funded in the near term will still be in place in 2030 and beyond. Investors therefore need certainty about objectives and what policies will be in effect. Second, clarifying the objectives for 2030 will support progress towards a competitive economy and a secure energy system by creating more demand for efficient and low carbon technologies and spurring research, development and innovation, which can create new opportunities for jobs and growth. Third, an international agreement on climate change is expected by the end of 2015. In advance of this date the EU will have to agree on a series of issues, including its own ambition level for 2030, in order to engage actively with other countries. Principally, the headline target of the EU based on the Green Paper on a 2030 framework for climate and energy policies comprises three main issues, which are to be achieved within the EU by 2020: First, a 20% reduction in greenhouse gas (GHG) emissions below the 1990 level. Second, a 20% share for renewable energy sources in the energy used. Third, a 20% saving in primary energy consumption (compared to

projections before the agreement on the climate and energy targets for 2020). Up to now the EU has achieved several conditions, which are: First, in 2011 EU GHG emissions were estimated at 16% below 1990 levels while GDP has grown by 48% since 1990. Second, in 2010 renewables' share of energy consumption was 12.7% compared to 8.5% in 2005. Third, in terms of primary energy consumption peaked in 2005/2006 at around 1825 million tons of oil equivalent (Mtoe). It has been slightly decreasing since then to reach 1730 Mtoe in 2011. (EU Reference: MEMO/13/275, 2013)

However, prior this green paper policy, several decisions had been issued by the EU in the field of energy security and sustainable development, for example the European Commission's Directive 2009/28/EC on the promotion of the use of energy from renewable sources aims to introduce a "20 % share of energy from renewable sources and a 10 % share of energy from renewable sources in transport" by 2020. (R.K.Larsen, 2012).

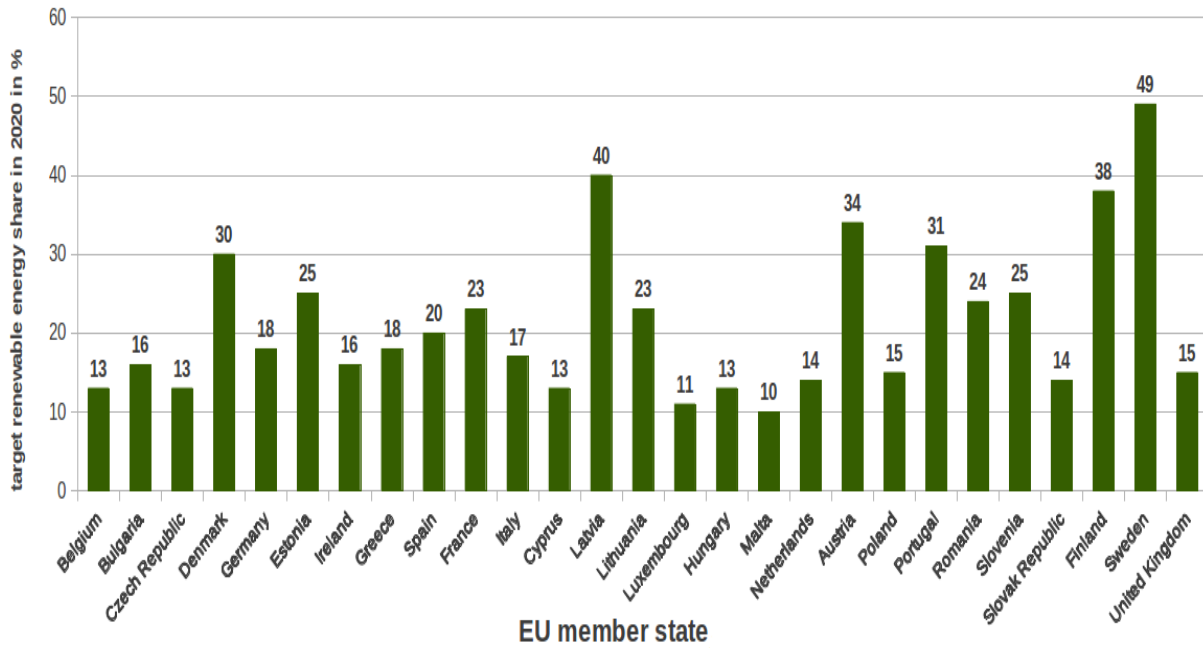
On the other hand, the EU's external energy dependence is constantly increasing. Whereby according to EU Statistics: " The EU meets 50% of its energy needs through imports and, if no action is taken, this will increase to 70% by 2020 or 2030. This external dependence involves economic, social, ecological and physical risks for the EU. Energy imports account for 6% of total imports and, in geopolitical terms, 45% of oil imports come from the Middle East and 40% of natural gas imports come from Russia. The EU does not yet have all the necessary means to change the international market. This weakness was highlighted by the sharp rise in oil prices at the end of 2000." (EU COM (2000) 769, 2009)

Analysis toward the EU and China Methodologies in the Field of Energy Security and Sustainable Policies

The energy security and sustainable development agenda have been common concerns for both of the EU and China, as they dealing with these two global challenges particularly in achieving a sustainable and secure energy system and ensuring the green growth consecutively. However the EU and China for the last decades have been devising and implementing the significant approaches and methods in their corresponding policies. Embarking from the existing *de jure* instruments as well as from *de facto* measures related to the energy security and sustainable development of both prominent global actor and in spite of wide spectrums of the EU and China policies on the two challenges, this paper concentrates on the three main aspects of the energy security and sustainable development policies which have been devised and employed. First, the analysis upon the governance aspect. Second,

the analysis pertaining to the international-multilateral negotiations and agreements postures, and Third, the modes of business operations in achieving and maintaining energy security and sustainable development.

With regard to the governance framework concerning the energy security and sustainable development policies, the EU hitherto has been to significant extent carrying out a centralized yet fragmented in terms of implementation. For instance, the Renewable Energy Directive (2009/28/EC) (EU-RED) setting out the European Union (EU) a target that 10% of the energy used in the transport sector across the EU should be generated from renewable sources. The absence of unified and policy-coherent for compliance mechanism particularly on the implementation of so-called Sustainability Criteria set out in several articles of RED as well as the absence of clear and distinct socio-economic criteria on the impact on local livelihoods due to implementation of renewable energy (biofuels). Consequently, the lack of comprehensive and solid governance on the EU renewable energy goals have incurred detrimental impacts for many countries, particularly for the exporting renewable energy supplying countries, such as Indonesia. Furthermore, this condition has thus led to a diversion of plantations in developing countries away from food production, thus negatively impacting on food resources. It can also lead to a loss of livelihoods or biodiversity through land grabbing or deforestation or a decrease in sustainability.(cf. R.K.Larsen, 2012; D.Georg, 2012). Furthermore, the EU and its Member Countries have different concrete targets on the attainment of renewable energy based on the EU-RED (cf. below Table, EU Commission Renewable Energy, 2012, which shall largely detriment the common governance of energy security and sustainable policies not only in the domestic jurisdiction but also in the third countries.



On the other hand, with regard to the governance within the energy security and sustainable development the policies of the China Government have been largely influenced and profoundly adhered to the progressive, highly state-centered and geostrategic approach. These refer to the stance that devising of policy and comprehensive mechanism of the energy security and sustainable development shall solely witholded in the hand of central government, namely under the leading of Central Communist Party (CCP) in order to maintain and to improve China's capacity to continually deliver rapid economic growth. China's Premier Wen Jiabao in 2011 asserted that ensuring GDP growth of around 8 percent each year and keeping inflation below 4-5 percent is linked to social stability imperatives required for regime security. Therefore, the China Government has created a national political economy structure, whereby even commercial decisions related of State Owned Enterprise (SOE) take place within the centralized control mechanism of CCP. In other words, in terms of energy security and sustainable development the Beijing strive to ensure highly unified decisions- making and compliance mechanism for all its state and commercial actors, instead of leaving these to markets to determine supply, pricing, and distribution of energy including for the corresponding policies abroad. (S. Zhao, 2008; cf. J.Lee, 2012). Thus, in order to achieve the energy security and subsequently sustainable development objectives China Government implement a geostrategic objective, whereby Beijing largely depend upon SOE to achieve the secure supplies of oil and gas for the domestic usages. In addition, the China Government supports heavily its SOE, namely the China National Petroleum Corporation

(CNPC), the China Petroleum and Chemical Corporation (SINOPEC), the China National Offshore Oil Corporation (CNOOC) to carry out the production, refinery and the off-shore exploration of oil and gas by providing comprehensive required facilities, such as financial resource and geo-political diplomacy support. (cf. S.Zhao, 2008)

With regard to the international-multilateral negotiations and agreements postures in the field of energy security and sustainable development, the EU and China have been to a large extent embracing different methods and approaches, in particular with regard to the Kyoto Protocol Greenhouse Gas (GHG) Emission targets: Kyoto emissions targets: Joint fulfillment, "burden sharing" and base years. To many developing countries particularly BRICS countries, the Kyoto Protocol is to be considered as an international instrument yet with a highly centralized, top-down approach which has very rigid targets in reducing GHG emissions. This means the way in which this agreement is managed, is essentially based upon a multilateral/universal membership. A top-down approach to a problem is a situation that begins at the highest conceptual level and works down to the details; in other words, it refers to the way in which an agenda for negotiations is prepared so as to define the overall shape of the agenda first and then proceed to consider how to deal with individual components. Accordingly, many of non EU and US countries have strongly opined that "from retrospective perspective, the EU and US have been the major polluters; they are responsible for most of the GHG emissions, and have the financial means and technological capability to tackle climate change." (R.L.Arcas, 2012).

For the EU, the issue of GHG emissions has been considered an integral part of its global climate and sustainable development politics, and thus the EU has been pursuing a strong environmental agenda for decades, driven by both domestic interests and external needs, leading the EU as the global actor in critically pushing up these energy and environmental issues to be global public policy agenda. For the EU, the agenda of sustainable development or green growth chiefly related to the climate change, pose a strategic opportunity to become a prominent leader in the global politics and thus serve as the source of its normative or soft powers in the international nation-state relations. (Freeman and Holslag, 2009). Thus, the EU without hesitate participated officially in the Kyoto Protocol, by its legislation approving the Protocol adopted in 2002, the EU stated that it and its 15 Member States at the time would make use of this provision to fulfill the EU's emissions commitment jointly. (EU COM (2010) 265). Through this adoption, the EU has committed to reduce their collective GHG emissions in the 2008-2012 period to 8% below 1990 levels.

In contrast, for the China Government, the climate change mitigation due to GHG emission under the Kyoto protocol were to be considered as the subset of the energy security policy to sustain rapid economic growth. Indeed the issue of climate change mitigation had been incorporated into the China's political agenda when President Hu Jintao and Premier Wen Jiabao came to power in 200. Additionally, in China the concern over GHG emission grew rapidly after 2002 when the expansion of high emitting sectors likes heavy industries became the engine of China's growth. (B.Lee, 2012). Although China has ratified the Kyoto Protocol under the UN multilateral forum, China to a large extent prioritizes and prefers to negotiate the climate change issue, namely the GHG emissions, within the informal forum G-20, in which China is the prominent member. One reason thereof, countries having large economies and large populations share their common as the main GHG emitters. Additionally, taking into account the causality between global economy and climate change, China considers the G-20 as an appropriate forum for negotiating and bringing forward its national interests on climate change and economic growth because G-20 brings together important industrial and emerging-market countries from all regions of the world. Together, G-20 member countries represent around 90 per cent of global gross national product, represented 66 per cent of the world's population and produced over 80 per cent of the world's GHG emissions. (cf. G-20 Cleaning Energy Factbook, 2010; R.L.Arcas, 2012). Accordingly, to the large extent it can be inferred that China relies more and have preference to fully utilize the bottom-up approach to negotiate the climate change and economic growth agendas and thus concluding a respective legally-binding instrument. The bottom-up approach means that is one that begins with details and works up to the highest conceptual level, such as 'a bottom-up model of the reading process.' Bottom-up architecture and decentralization are to be found, for instance, in the field of investment protection, which continues to rely upon bilateral agreements and has not formally embraced multilateralism. (R.L. Arcas, 2012)

From the law and economics of transnational law in the field of energy security and sustainable development, the China's approach serve to prevent or minimize the possible huge transaction costs in arranging, monitoring and enforcing the desired mutual compliances incurred from the negotiations and conclusion multilateral agreement related to the energy security and sustainable development. Indeed, the international system concerning the energy security and sustainable development has been for decades characterized as the decentralized system and lack of the hierarchical enforcement mechanism, which to the certain extent hinder long-term respective cooperation. (cf. W.J.Aceves, 1996) Because the EU and China

have to the profound extents embraced and performed different approaches and methods leading to increasing contingencies in the field of energy security and sustainable environment, thus in these two challenging global agenda EU has been prioritizing the multilateral forum like UN and WTO, while China under the China-first state led principle has been optimizing the negotiations and agreements within the G-20 forum and in particularly within the BRI(I)CS countries, as the prominent global emerging power.

Conclusions

Embarking from the research study upon the existing, prevailing decisions and legislations as well as factual measures concerning the energy security and sustainable development in the European Union (EU), with the seat of government in Brussel and in People's Republic of China, with the central government in Beijing, this paper reiterates two inferred conclusions and a recommendation. Firstly, the issues of energy security and sustainable development have been up to now considered as the global challenges and thus the common challenges, because of two reasons: First, the impact of high and often volatile energy prices and second, concerns over environmental sustainability and particularly about the global climate, whereby these two challenges have become nowadays integral part of non-traditional security challenges. To the certain extent the common concern is able to pave the way toward the synergy and comprehensive cooperation in the long periods between the global actors. Secondly, within the policies toward energy security and sustainable development challenges the EU and China have been adopting and thus implementing profoundly differing methods and approaches, in particular within the two principal aspects: the governance and international-multilateral negotiations and agreements postures. In the first aspect, the EU to a large extent a centralized yet fragmented, and incoherent policy in terms of implementation, in this case related to the renewable energy policy. On the other hand, China pursuant to the 12th Five Year Plan have largely adhered and performed the progressive, highly state-centered and geostrategic approach. While in the latter one, the EU has been embracing leading position in the multilateral fora pertaining the climate change issue, whereby the issue of GHG emissions has been considered integral part of its global climate and sustainable development politics, and thus the EU has been pursuing a strong environmental agenda for decades, driven by both domestic interests and external needs, to put forward its normative and soft power toward third countries. In contrast, China as the prominent Member of BRICS countries have been largely adhere to bottom-up, consensus

based approach in negotiating and in concluding the energy security and sustainable development agenda with other countries in the long runs. Finally, as the feasible conclusion in managing and overcoming the energy security and sustainable development challenges, the EU and China are to implement the Policy Coherence for Development as the policy tool having an objective aiming at working to ensure that the positive results and objectives of a policy are not undermined by other policies and do not negatively impact on developing countries. Furthermore, it also helps assess whether the policy is supportive to development objectives. (OECD 2005: 28; c.f. D.Georg, 2012)

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