

# Perceptions and Challenges of China-EU Energy Cooperation

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# Perception and Challenges of China-EU Energy Cooperation

Michèle Knodt, Nadine Piefer and Suet-Yi Lai

## Abstract

China and the European Union are the world's largest importers of natural resources, which make both of them highly dependent on other countries. Both are, hence, greatly challenged on the issue of energy and closely interlinked also on climate change, both areas which will demand changes in energy production, consumption patterns etc. These challenges could lead to competition between the two actors in the request for resources. At the same time, such a common situation could entail great potential for a closer cooperation. However despite the latest summit between the two partners, little indicates for such closer cooperation.

Thus, the aim of this paper is to understand which mutual perceptions the EU and China have in energy policy. How does the external energy governance of the EU and China function? Which mutual perceptions do both sides hold and which controversies exist?

**Keywords:** European Union; Energy Union; Foreign Policy.



# 1. Introduction

At the most recent summit between the European Union and China, at the End of June (2015), both parties celebrated the 40th anniversary of their bilateral relations. Progress was seen on the highly disputed issue of Intellectual Property Rights and also on the topic of climate change the willingness for cooperation was shown (European Commission 2015). A Statement on Climate Change was agreed upon, which is interesting looking at energy, as both issues are closely intertwined. Both want to take steps towards low carbon development and cooperation on emissions trading will be deepened as China plans to introduce a nationwide carbon emissions trading system by 2020. Looking at the upcoming UN Climate Summit in Paris, China and the EU “commit to work together to reach an ambitious and legally binding agreement” (European Council 2015: 2). Concerning this last point, especially, it remains to be seen whether such cooperation will be realized, having their different positions at the previous climate summits in mind. For the European Union such a common commitment would have great importance, especially at a time where the EU’s significance and influence in international politics is decreasing.

China and the European Union are the world’s largest importers of natural resources, which make both of them highly dependent on other countries. By 2030, the EU and China will import more than 80 percent of their oil (Lee et. al 2015: 2). Both are, hence, greatly challenged on the issue of energy and closely interlinked also on climate change, both areas which will demand changes in energy production, consumption patterns etc. These challenges could lead to competition between the two actors in the request for resources. At the same time, such a common situation could entail great potential for a closer cooperation. However despite the latest summit between the two partners, little indicates for such closer cooperation. “Despite the imperative for closer collaboration on energy and climate change, EU-Chinese relations have ebbed and flowed much since 2007” (Ibid.: 6). Instead, China seeks closer cooperation with other actors, e.g. the US and China agreed on a “Joint Announcement on Climate Change and Clean Energy Cooperation” (IEA 2015: 50). In several official policy papers on China’s policy towards the EU, energy is only given little attention, in comparison to other policy areas, as economic and finance (Lai 2016). Due to the Eurozone Crisis and changes in Chinese diplomatic priorities, the EU gains less attention from China, who has begun to focus less on multipolar multilateralism and instead more on bilateral ties in its foreign policy (Lee et. al 2015: 3) and there especially on bilateral cooperation with nation-states, not the EU (Knodt et al. 2016).

Thus, the aim of this paper is to understand which mutual perceptions the EU and China have in energy policy. How does the external energy governance of the EU and China function? Which mutual perceptions do both sides hold and which controversies exist? The data for this paper is derived from two international research projects which were completed in 2015. One was a three year project on “Challenges of European Energy Governance with Emerging Powers” (EnergyGov) which analysed the EU-Emerging Powers dialogues with Brazil, India, China and South Africa.<sup>1</sup> The other was a two year project “External images of the EU as a Normative Energy Power: BRICS vis-à-vis the EU” (EXIE)<sup>2</sup> which examined

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<sup>1</sup> The project was funded by the Volkswagen Foundation led by TU Darmstadt involving University of Aarhus, Peking University, Stiftung Wissenschaft und Politik (SWP), University of Cambridge, South African Institute of International Affairs, (SAIIA), Fundación para las Relaciones Internacionales y el Diálogo Exterior (FRIDE), The Energy and Resources Institute (TERI), Gesellschaft für Internationale Zusammenarbeit (GIZ), Federal University of Rio de Janeiro, University of Zurich. Data provided by this project comes from 33 in-depth interviews in Beijing and Brussels from March 2012 – July 2014 and a survey on China-EU Energy Relations. Data quoted as EnergyGov, 2014, Darmstadt.

<sup>2</sup> This project was supported by a Jean Monnet Lifelong Learning Programme. The project ‘External Images of the EU (EXIE): Images of the EU as a Normative Energy Player’, 2011-2013 was co-led by

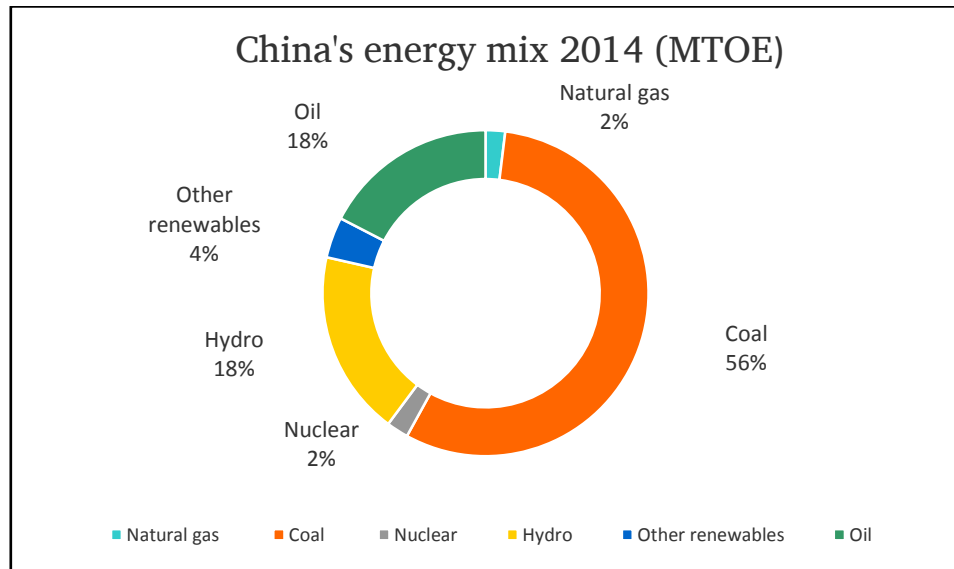
influential opinion making discourses on the EU' place in the global energy landscape. The two first sections of the paper will introduce China's and the EU's energy governance. Section three provides a first hint, why there might be a problem in the EU-China dialogue by having a look at the media discourse on the EU's energy governance within Chinese media and China's energy policy within the European media discourse. The latter will have a look at European media as European Voice as well as at the media discourse within Germany and UK as an example of two EU member states. Section four will describe the EU-China Energy Dialogue in order to show how the EU and China are working together in energy matters and what problems occur. Insights to understand EU-China energy relations will be given in section 5.

## **2. China's Energy Profile and Energy Governance**

During the last years China's energy consumption has increased substantially. Since 1993, China became a net energy importer. Today, China's energy consumption makes up over one-fifth of the world's total, in which industrial use accounts for 70 percent. According to the International Energy Agency's (IEA) World Energy Outlook in 2013, China is not only the biggest coal consumer and importer but also taking over the US as the world's largest oil importer (IEA, 2013, pp.55, 61, 62, 67). Particularly, this becomes obvious in the coal consumption as China's energy sector displays continuing dependence on coal. The volume of China's coal imports more than tripled in 2009 from a year earlier (China Daily, 10.2.2010) even though China is having the third largest coal reserves worldwide. Related to the overall energy consumption it can be stated, that there is an increasing gap between China's energy consumption and production which is continuously widening. This heavy reliance on fossil fuels contributes to China's huge energy-related greenhouse gas emission. It is now the world's largest emitter of CO<sub>2</sub>. Consequently, China's energy consumption and policy is no longer a domestic issue but having a worldwide influence (Zha and Lai 2015: 129).

The Figure of China's energy mix shows the reliance of China's current energy mix on coal. A huge local availability of coal in China means abundant, secure and low-cost local supply. In contrast, oil and natural gas resources are limited, whilst the development of non-fossil energy is rather recent and involves high cost. The renewables are dominated by hydropower. If we take hydropower separately, the rest of the renewables like solar, biomass, wind etc. only make it up to one percent of the energy mix.

**Figure 1: China's energy mix**



Source: BP Statistical Review of World Energy 2014

It seems that for a long time to come, coal will continue to dominate China's energy mix, even if the share of coal at the energy mix seems to decrease very slowly. This is posing a growing challenge for the country. Given China's huge population, the availability of energy resource per capital is indeed scarce. In addition, in most of its policy papers as well as in the five-year plans China has always highlighted its will to further urbanization, industrialization and economic growth. To cope with this problem, Chinese government is promoting energy efficiency measurements. Also the environmental and social burdens generated by energy-related carbon emission are of major concern of the Chinese government (Zha and Lai 2015: 130).

Thus, confronting the twin challenges of energy security and climate change requires strong governance structures in China (Kong 2011). The role as a net importer of energy has created China's self-perception of a high energy insecurity based on energy resources in the Middle East, Russia, Central Asia and Africa. With this China's energy foreign policy has expanded in during the 1990ies and the country established new relations with countries China did not or only had kept few relations before. But still energy does not seem to be a priority issue for Chinese government (Zha 2013). Chinese government even had decided to abolish its Ministry of Energy which was formed in 1988 at the same moment China turned into a net importer of crude oil. Despite having energy matters bundled within one ministry at national level, energy governance in China is complex and fragmented, with overlapping competences (Downs, 2008; Vaclav, 1981; Leung, 2011).

Between 1993 and 2003 the fragmentation of the national energy administration had been extremely high and has enhanced especially since the National Coal Industry Bureau and the National Petrochemical Industry Bureau were revoked and responsibilities had been distributed to other ministries. The major change in China's energy governance came with the shift in government 2003, when Hu Jintao and Wen Jiabao took over power and brought a new vision and policy approach into China's governance. "[...] when the Third Generation of leaders came to power, the scope and importance of information providers and interest groups affecting problem representation has grown considerably. For the Fourth Generation, the creation of study groups and seeking informed advice has become something of a trade mark" (Meiden et al 2009: 592, Knodt et.al. 2010) ).

In 2003 the National Development and Reform Commission (NDRC)<sup>3</sup> was founded. The NDRC is an agency, which reports directly to the State Council in different policy areas regarding economic and social development, including energy. Within the NDRC the Energy Bureau is responsible for energy, it was created in order to centralize planning and control under one institutional framework. To overcome the Energy Bureau's lack of authority China set up the National energy Leading Group (NELG) in 2005, composed of 13 members, from the NDRC and other key ministries including consultational links with think tanks.<sup>4</sup> The NELG is in charge of energy strategies and major policies, the development and conservation of energy resources, energy security and emergency responses, as well as energy cooperation with foreign organisations (Yu 2010: 2163). The administrative support is provided by the subordinate ministerial State Energy Office (SEO), while the NDRC Energy Bureau still retains its functions on policy implementation. Nevertheless, it seems that the NELG is not able to deprive from the influence of the national oil companies (NOCs) and ministries (and especially the NDRC) (Knodt et.al. 2010).

The failure to establish an Energy Ministry in the March 2008 which in future could have enhances leverage is one proof of the strength especially of the NDRC (Meiden et al 2009: 595). With the 2003 changes the sustainable use of energy was introduced as a new key priority for China's energy policy (Yu 2010: 2161, Knodt et.al. 2010).). Also since 2003 the electricity issue was regulated by the State Electricity Regulatory Commission (SERC). SERC was responsible for the united electricity regulatory system and electricity-trading mechanism. SERC was merged with the National Energy Administration (NEA, vice-ministerial level), which was established in 2008 under jurisdiction of the NDRC. After this recent reform, NEA's mandate covers formulation and implementation of energy development plans and industrial policies, regulation of energy sectors, promotion of energy system reform, as well as leading China's participation in international energy cooperation. Noteworthy, former leaders in SERC are the ones who take the leadership of the current NEA after the SERC-NEA merging (Zha and Lai 2015: 132).

In January 2010, another attempt to overcome the fragmentation was made and the National Energy Commission (NEC) was created. It is headed by the Premier. The linkage with the NEA is achieved by taking the head of the NEA as NEC deputy. The other nineteen members comprise mostly of different China's ministers. NEC main goal is to formulate a comprehensive and coordinated national energy strategy. Its daily work was undertaken by the NEA. But thus far, NEC has functioned on a crisis-driven basis (Zha and Lai 2015: 132).

The fragmentation within China's energy governance is completed with other ministries and national agencies holding power in certain energy-related matters. One important one is the Ministry of Science and Technology (MOST), which is in charge of the technology, innovation and research and development related aspects of energy. State-owned energy enterprises such as nearly all the other state-owned enterprises are under jurisdiction of the State-owned Assets Supervision and Administration Commission (SASAC). The Ministry of Commerce (MOFCOM) is responsible for all trade related to energy issues. The State Administration of Coal Mine Safety is responsible for regulate and monitor safety of coal mining. This brings an overlap of competence in many areas where the specialized ministry competences overlaps with NEA and NDRC. This has been acknowledged with the 12<sup>th</sup> Five-Year Plan on Energy Development published by the State Council in January 2013 which

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<sup>3</sup> NDRC was the predecessor of the state Planning Commission (SPC) founded in 1952 which was renamed State Development Planning Commission (SDPC) in 1988.

<sup>4</sup> For the energy policy field especially the Development Research Centre of the State Council and the NDRC Energy Research Institute are of relevance. They produced the two most authoritative reports on the main priorities for China's energy policy in 2004, at the request of Wen Jiabao: the National Energy Strategy and Policy Report (Beijing: Development Research Center, 2004); and the Medium and Long Term Energy Conservation Plan (Beijing: NDRC, 2004).



came up with a ‘division of labor’ table. Therein, besides financial issues the NDRC remains the main leader of the responsible ministries within one issue (Zha and Lai 2015: 133-135).

As energy business is in the hands of state-owned firms, they also play an important role in China’s energy governance. Especially State Grid Corporation of China (State Grid), the three Oil Giant - China National Petroleum Corporation (CNPC), China Petrochemical Corporation (Sinopec) and China National Offshore Oil Corporation (CNOOC) – and the major power-generators - China Huaneng, China Datang Corporation (CDT), China Guodian Corporation, China Huadian Corporation and China Power Investment Corporation (CPI) (Zha and Lai 2015: 133).

The Chinese governance system is also stretched over several levels (central, province, municipal). Decisions with respect to goals and regulations on energy are taken at the highest level by the central government. Provincial and municipal government are responsible for implementation. Implementation at those levels suffer delays and discontinuity due to other priorities like budget, industry protection etc. (Zha and Lai 2015: 133).

### **3. EU External Energy Governance**

Common energy policies seem to be one of the most truly ‘European’ issues. Looking back at the times of the European Coal & Steel Community (ECSC) and the European Atomic Energy Community (EURATOM), one would clearly regard this policy field as an example of early supranational cooperation, based on the idea of peaceful and reliable energy supply for a growing community. Instead the EU for a long time only exhibited weak competences in the treaties, as European energy policy has been regarded as a strictly national issue for most of the time and was only recently regulated at the European level as a shared competence. With gradual integration over time the European Commission could acquire a stronger energy profile (Piefer et.al. 2015). Thus, the Commission could extend its energy competences (1) within the new integrated environmental competences in the 1980s, (2) the development of a single European Market also for electricity, petroleum and natural gas as well as (3) through appending cross-border construction of energy infrastructure such as ‘trans-European networks’ (see Fischer 2009).

For the first time European Energy Governance was brought to a contractual basis by the Lisbon Treaty. Article 194 TFEU regulates, that “In the context of the establishment and functioning of the internal market and with regard for the need to preserve and improve the environment, Union policy on energy shall aim, in a spirit of solidarity between Member States, to (a) ensure the functioning of the energy market; (b) ensure security of energy supply in the Union; (c) promote energy efficiency and energy saving and the development of new and renewable forms of energy; and (d) promote the interconnection of energy networks”.

Those norms have been developed already in the 2006 Green Paper of the Commission on ‘A European Strategy for Sustainable, Competitive and Secure Energy’ (European Commission 2006). It states that European energy policies should strive to fulfill three main objectives (Knodt et.al. 2015):

**Sustainability:** (i) developing competitive renewable sources of energy and other low carbon energy sources and carriers, particularly alternative transport fuels, (ii) curbing energy demand within Europe, and (iii) leading global efforts to halt climate change and improve local air quality.

**Competitiveness:** (i) ensuring that energy market opening brings benefits to consumers and to the economy as a whole, while stimulating investment in clean energy production and

energy efficiency, (ii) mitigating the impact of higher international energy prices on the EU economy and its citizens and (iii) keeping Europe at the cutting edge of energy technologies.

Security of supply: tackling the EU's rising dependence on imported energy through (i) an integrated approach – reducing demand, diversifying the EU's energy mix with greater use of competitive indigenous and renewable energy, and diversifying sources and routes of supply of imported energy, (ii) creating the framework which will stimulate adequate investments to meet growing energy demand, (iii) better equipping the EU to cope with emergencies, (iv) improving the conditions for European companies seeking access to global resources, and (v) making sure that all citizens and business have access to energy” (European Commission, 2006: pp.17-18).

Article 194, 2 states that: “Without prejudice to the application of other provisions of the Treaties, the European Parliament and the Council, acting in accordance with the ordinary legislative procedure, shall establish the measures necessary to achieve the objectives in paragraph 1. [...] Such measures shall not affect a member state's right to determine the conditions for exploiting its energy resources, its choice between different energy sources and the general structure of its energy supply”. Thus, the EU and the Member States share energy competences within the European Union. Article 192,2 regulates that the Council within a “special legislative procedure and after consulting the European Parliament, the Economic and Social Committee and the Committee of the Regions, shall adopt [...] measures significantly affecting a Member State's choice between different energy sources and the general structure of its energy supply” (Art. 192,2 TFEU).

Already the reference towards the shared competences and the importance of Member State energy policy gives a hint that the coordination of EU and Member State energy activities should exhibit an important role in the EU's external energy governance. Indeed our research showed that agreements and partnerships of the EU and Member States within external energy governance have at times rivaled each other and there is considerable lack of information of Member States' activities in DG Energy. The European Commission has reacted to the obvious problematic non-coordination within the external energy policy. Only recently focus has also been laid on an information exchange mechanism with the EU Member States (Decision 994/2012/EU in Official Journal of the European Union 2012). According to the new mechanism Member States have to inform the Commission of all their new and existing international agreements (IGAs) with third countries in the field of energy; otherwise they risk sanctions.<sup>5</sup> Despite overall positive ratings for the bilateral cooperation, stated by the participants of the respective energy dialogues, relations and tensions between the EU and the Member States level issues of concern, as our data on coordination reveals. There does not seem to be an institutionalized coordination between the EU and the Member States level. At the same time, an overwhelming majority (86.1 percent) of the EU actors state that coordination between both levels would be an important issue. This discrepancy suggests that external energy relations tend to run on parallel paths, whereas possible synergies between the supranational and the Member States' level are not highly recognized yet. It also seems that for the characteristic challenges of 'realpolitik' – for instance the wish to negotiate over concrete technology transfers - the Member States' level is preferred over the supranational level. Coordination between the different negotiation arenas thus seems to be an issue that needs to be optimized, as enhanced coordination would be beneficial for energy cooperation (Piefer et.al. 2015).

As a cross-cutting issue, energy involves the policy fields of external relations, trade, energy, development, environment and climate policies. Thus, more than one EU Commission DG is part of EU external energy governance (Knodt et.al. 2015: 61-64):

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<sup>5</sup> As the EnergyGov survey was conducted in 2012 and 2013, this mechanism was either not yet in place or newly established, so that we cannot make clear statements interpreting our survey data on its prominence and effect.

Within the Commission, 'DG Energy' has the main responsibility for all energy related issues and it is clearly the leading DG of European Union energy policies. DG Energy has established a number of supranational activities, with the objective of strengthening relations with third countries and transnational energy companies. Internal and external EU energy strategies and policies are drafted and DG Energy takes the lead in energy dialogues with emerging powers. DG Energy has limited budget lines for cooperation programs with third countries to underpin the energy dialogues with emerging powers. This calls for close collaboration with other DGs with more funding for energy projects. Especially DG DevCo (see below) in the last years was one of the main cooperation partners of DG Energy in this respect.

'DG Climate Action' and 'DG Environment' would seem like natural partners for DG Energy, as there are considerable overlaps in policies and discourses. The discussions on the Commission Green Paper "A 2030 framework for energy and climate policies" (European Commission, 2013b) as well as the 20-20-20 goals of the Energy 2020 Strategy prove the close linkages between both issues. Yet, our survey has interestingly shown that DG Environment is not very knowledgeable within the EU-China energy dialogue, although our respondents attribute high importance to it. DG Climate is quite prominently visible due to the strong links between climate and energy policies.

For 'DG Trade' energy issues are one of the few topics that are not yet part of a consistent liberalization strategy, and according to our interviews with DG Trade officials, their activities concentrate on bringing this topic back into the liberalization discourse, e.g. in line with the demands of the Singapore issues<sup>6</sup> (Interviews Brussels, May 2012). 'DG Research' has a strong focus on emerging powers and partly shares goals with DG Trade, especially regarding intellectual property rights and possibilities of technology transfer. Coordination with Member States is exerted. Generally, a shift in R&D relations with emerging powers can be observed intensely with China.

'DG Development and Cooperation' (DevCo) is generally responsible for all energy projects implemented under the development heading in emerging powers. Within the current financial framework (2014-2019) phasing out of development cooperation with emerging powers is envisioned, which will be of great significance for the EU-China energy relations. As measures and programs in the energy cooperation between the EU and China have been predominantly financed through DG DevCo, new financial strategies have to be identified. In its 'Agenda for Change' (European Commission, 2011), the EU has set out a new development cooperation strategy, also with emerging powers. The broader aim behind this strategy is the need for a change of the relationship between the EU and emerging powers from a development (recipient) relationship to more equal partners. The new Partnership Instrument as well as the Industrialized Countries + Instrument are now pooling funding for cooperation projects beyond development cooperation. Certain budgets were allocated to energy projects, so now a challenge is to find financing for projects agreed in the energy dialogues as budgets are overall lower than before. With phasing out development cooperation comes a reduction of staff in the EU Delegations abroad, so that many energy contacts will be lost. As other staff in the Delegations - e.g. from DG Trade as in the case of China - have to be in charge of energy in addition to their other responsibilities, the importance of energy policy in the relationship is impaired.

Created under the Lisbon Treaty, the EEAS plays a very interesting role in EU energy governance and is characterized by several distinctive features: It aims at being the overall coordinator of EU energy governance. As a strategy it frames energy relations as 'energy diplomacy' in all its facets and thus tries to streamline energy into general external relations. In an internal non-paper on energy and EU foreign policy (EEAS, 2012) the EEAS

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<sup>6</sup> The Singapore Issues are a package of strategies for deep trade integration taking place beyond borders, namely competition in energy services should be introduced, and liberalization of government procurement and investment conditions.

acknowledges changing dynamics and power relations in energy governance and aims at supporting EU external energy relations by ensuring policy coordination. It sees itself as bridging political and business interests. Thus far, the EEAS lacks issue-specific competencies due to a clear role in the EU's institutional system. The EEAS' understanding of energy governance as 'energy diplomacy' is not yet accepted as a positive advantage by the other institutions that stand in concurrence over governing energy. 'Energy diplomacy' would imply a more flexible way of connecting public and non-state energy actors both in the EU and in the respective country. This might thwart the competencies of other EU actors involved, as long as roles and competencies are not clearly defined.

This institutional mapping shows that the governance network of European institutions resembles a polyphonous structure. Obviously the EU does not 'speak with one voice' and while the cross-cutting nature of energy issues underlines that there is not a need to do so, this institutional structure bears both potentials and risks. Ideally, these tailor-made modes of governance allow creating flexible relationships with the EU's strategic partners and allow releasing synergies deriving from close-knit coordination between the different DGs that are involved into energy relations. Knowledge management may be facilitated through close informal connections and through regular personnel exchange, which is one of the bureaucratic principles within the EU administration. At the same time, the institutional fragmentation as well as inadequately defined roles and responsibilities (e.g. the EEAS' positioning) may foster concurrence between different EU actors involved and this may result in highly fragile forms of coordination. Also, the absence of a clear leading position may hamper the cooperation with the EU's strategic partners. This is a point where the cross-cutting nature of energy issues may also weaken the role of DG Energy, as we can think of constellations where other actors such as DG DevCo or the EEAS may be in a more apt position to meet the interests of both the EU and its partners (Piefer et.al. 2015).

## **4. Mutual Perception of EU and China in Energy Governance in the Media**

Before going into details about the EU-China energy dialogue, this paper has a look at the mutual perceptions of EU and China in energy governance as such.<sup>7</sup> It is important for the EU to identify how China perceives it as an energy actor and to tailor the appropriate policies and outreach towards China in energy issues, as China has been such a giant energy consumer and energy-related carbon emitter. At the same time it is important for China to understand European perceptions of China's energy governance compared to other emerging powers to evaluate its standing in Europe. Especially when it comes to the sustainable use of energy, the EU has been more advanced than China. While the Treaty of the European Union issued in 1991 already highlighted sustainable development as an important norm for the EU (s. above), China officially introduced the concept to its domestic policy only in 1994 (China's Agenda 21, Lai 2016).

The data for the media analysis is coming from an media analysis of the *People's Daily*, China's most widely circulated national newspapers which also represents the thoughts and stands of the Chinese government as it is owned and run by the Chinese Communist Party. In terms of timeframe, the EXIE project comprised five years of media observation (2009-2013). Among those is the Euro Area debt crisis; the evolution of China's view of the EU from the

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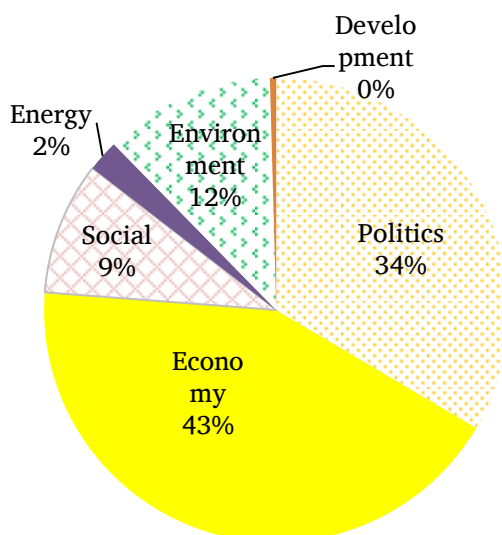
<sup>7</sup> Data collected within the EXIE Project, see Fn 2. A total of 761 news items was collected and analyzed from the *People's Daily* during the 2009-2013 COP periods. In the 2009-2013 COP (Conference of the Parties to the UNFCCC) samples, the mean and average of the monthly number of news articles featured EU-China interaction were 44. Seemingly, focusing the news collection period around the UNFCCC has not affected the attention paid on EU-China relations by the *People's Daily* (Lai 2016).

United Nations framework conventions on climate change (UNFCCC) in 2009 to 2013; as well as changes in EU-China energy relation initiated by the new leadership in China (since 2012, see Lai 2016). The insights built on previous research by Holland *et al.* (2007), Holland and Chaban (2010), Chaban and Holland (2013, 2014), the China Policy Institute of the University of Nottingham<sup>8</sup>, and Institute of European Studies of Chinese Academy of Social Sciences.<sup>9</sup>

Throughout the literature we can find some constant findings about the perception of the EU in China. In particular, the EU's role as an energy actor has been perceived to be minimal. Instead, its advanced development in economy, technology and life-style were the most recognized. In terms of partnership, the EU was affirmed as China's important partner in economic and political fields. Moreover, the attitude of the Chinese towards the EU have been seen as relatively positive and stable especially when compared to antagonist emotions vis-à-vis Japan and the US. Building on these findings, this paper narrows down the focus and concentrates on news items from 2009 to 2013 in the *People's Daily*, which featured EU-China interaction (Lai 2016).

As displayed in Figure 1, in the 2009-2013 COP samples, the EU was predominately framed as China's economic and political partner by the *People's Daily*. Although the search periods and search terms have designated focus on the EU's actions in the UNFCCC and in energy field, the collected news stories of the EU as an actor in energy or environment issues remained little. Notably, only five news articles among the 209 items featured the EU as an energy actor, in which the EU was usually a minor actor. The party-owned daily has not framed the EU as global energy player, or linked up EU-China energy interaction with the international climate change governance. This particular pattern in visibility got some explanation in the in-depth interviews with the Chinese newsmakers. An editor of *Energy*, a monthly magazine run by the State-owned Assets Supervision and Administration Commission of the State Council (SASAC), said 'the EU is not important for China because it cannot control the European energy countries' (Author interview, 7 July 2013). His two counterparts from Yicai, a news group which runs business news, thought that Europe as a whole was 'not important in China's energy, especially in coal and oil which China uses the most' (Author interview, 18 October 2013) (Lai 2016).

**Figure 1: Thematic framing of EU-China interactions in the *People's Daily* (2009-13)**



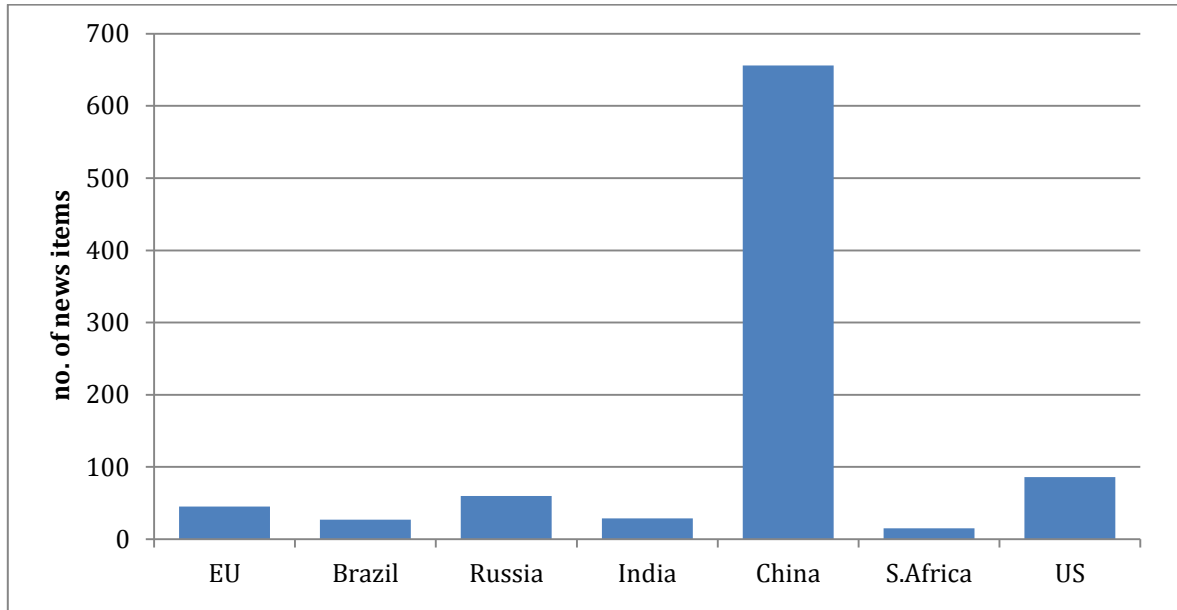
<sup>8</sup> For more information, see official website of the project (Chinese Policy Institute of University of Nottingham).

<sup>9</sup> For more information, see official website of the project (Institute of European Studies, Chinese Academy of Social Sciences) and Shambaugh *et al* (2008).

Source: EXIE Data 2015

As shown in Figure 2, the coverage of the EU in energy-related news was small, 45 pieces out of the 761 news articles collected. Among these coverage, 30 articles also featured China. When spreading the EU-related energy news across the years. Yet, in none of the years did the *People's Daily* cover the EU in more than 10% of the BRICS and EU-energy news. Among the news items that featured the EU, a majority mentioned also China. The only exception was the 2010 case, in which the EU interacted more with Russia than with China (Lai 2016).

**Figure 2: Frequency of appearance of the monitored actors in the energy-related news from the *People's Daily* (2009-2013)**

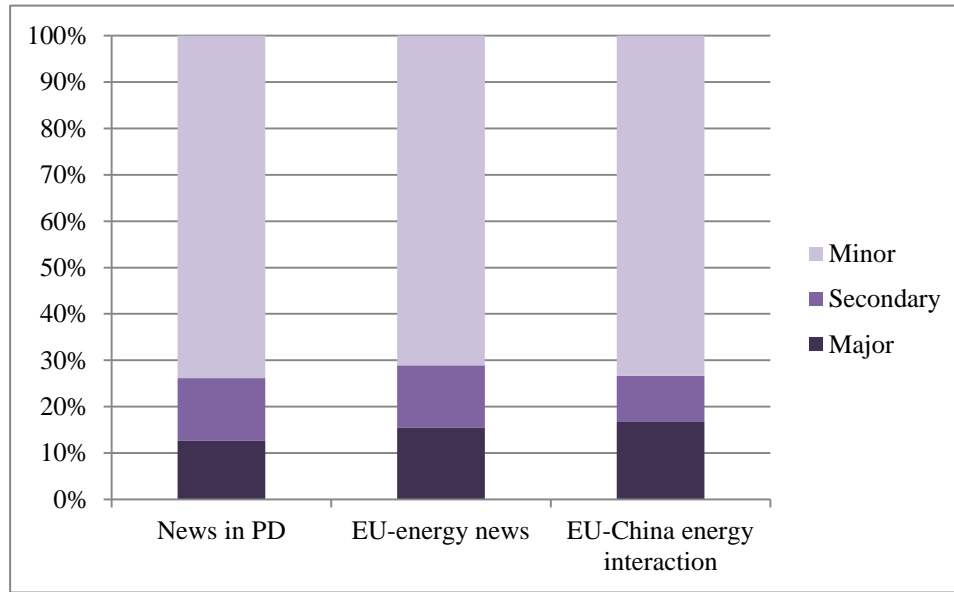


Source: EXIE Data 2015

If we look the media analysis, in terms of volume, an average between 4.4 and 6.3 news items was found in each edition of the *People's Daily*. Energy appeared to be a key topic in the party-owned newspaper. Yet, these energy-news articles were predominantly self-focused; China was mentioned in 87% of the collected energy news whilst the appearance of other BRICS countries and the EU was low.<sup>10</sup> Seemingly, the *People's Daily* views and reports energy more as an internal issue rather than portraying China's energy issues inside a global governance. This finding was further reinforced by the domesticity of the collected news: 65.7% of the reporting concerned local stories, i.e. what happened in China. As displayed in Figure 3, the proportion of the degree of centrality of energy issue remained similar in the total BRICS/EU energy-related news, EU-only energy-related news and EU-China energy related news. Over 70% of them included energy solely in the sidelines. There were solely 13 EU-related news stories in which energy issue was the main or secondary focus. By and large, the role of the EU as an energy partner of China has been presented limited in the *People's Daily* (Lai 2016).

<sup>10</sup> Noteworthy, this result has already excluded the internal energy-related news about China which did not mentioned the terms 'China' or 'Chinese' but use terms like 'our country', 'our government' or name government agencies without adding 'China' in front (e.g. National Energy Agency, National Development and Reform Commission).

**Figure 3: Degree of energy-focus in the collected news samples of the *People's Daily* (2009-2013).**



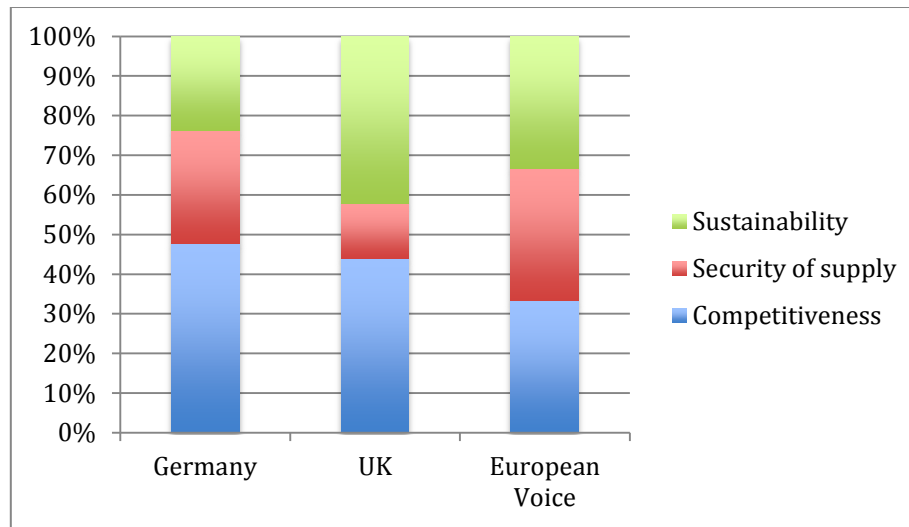
Source: EXIE Data 2015

Another prominent finding is that the types of energy that the EU (as well as within the news on the EU-China energy interaction) was reported to work with were hugely different from those of China. In the EU's energy action, the top three types of energy mentioned were 'clean energy', 'renewable energy' and 'new energy' respectively. By contrast, the top three types of energy mentioned in the energy action of China were all non-renewable sources: coal, oil and gas. Whilst the EU was framed as an actor who was working with the renewables, which are green and have lots of economic potential, China was portrayed as still using 'unclean' and old energy sources. However, these reports went further and said that China was indeed working to alter the situation. The top energy issues concerned China has been the promotion of energy-saving, energy efficiency and sustainable development. These issues have also been key concerns in EU-China interaction in the reporting. Generally, the EU was presented as more advanced in the development of clean energy than China was, but China's effort to improve its energy-mix and energy industry was repeatedly emphasised by the *People's Daily*. Thus, among the three energy norms, the EU was mainly framed as a sustainable actor in Chinese media. Competitiveness was the second most visible frame, closely followed by security of supplies (Lai 2016).

What is worth noting is that the energy cooperation reported in the *People's Daily* consisted of mostly bilateral cooperation of China with another country, which indicated that Chinese government has relied more on bilateralism in energy matters than on the global multilateral governance including the supranational actor EU. The evaluation of the EU's energy action was found more in positive light, especially when interacting with China. 26.7% of the EU energy action in general and 36.7% of its energy-interaction with China were reported in a positive tone. These positive reporting were from news on existing or potential energy cooperation between China and the EU. By contrast, the EU's negative evaluations were found in news articles about its conflicting stands as part of the 'developed countries camp' against the 'developing countries camp' which China belonged to in the climate change negotiation as well as news articles about EU companies as competitors of Chinese energy companies (particular the anti-dumping cases against Chinese solar panel in the 2012 coverage). In terms of frames, these negatively-toned reporting was found in the EU's action on 'competitiveness' and 'sustainability'. While the EU is not a really visible actor in Chinese media, China is by far the most visible actor among the BICS in European, German

and UK media.<sup>11</sup> This counts as well for the *European Voice*, where China is also the most visible actor among the BICS, however in general there is a low appearance of the BICS in the *European Voice* (Lai 2016).

**Figure 4: Perceptions of China's norm orientation in European media:**



*Source: EXIE Data 2015*

As it can be seen in figure 4, China is mainly framed within competitiveness within media. This seems to be most likely related to China's general drive for economic growth and hence energy as well it is seen within the economic terms and competition (Bain et. al 2016). The finding nevertheless is remarkable in contrast to China's self-perception shown below which is mainly characterized by energy security. China is however to a greater extent framed within security of supplies in German media, compared to UK media, where the second most visible frame is sustainability. Hence, in German media, China is more often viewed upon as an actor with a need to fulfill its energy demand and often "energy hunger" is used alongside China. In the UK, the greater visibility of sustainability is most likely connected with China's role during the climate summits.

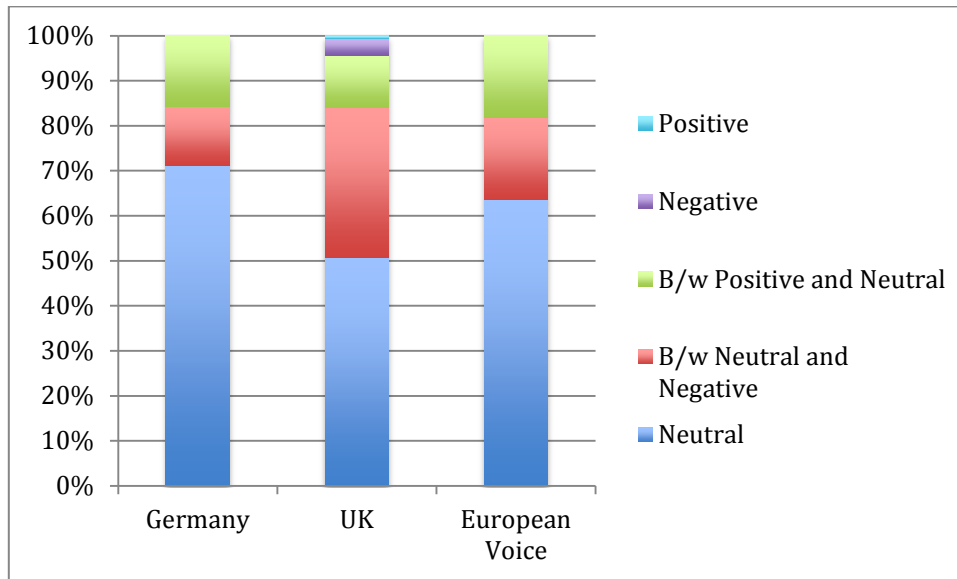
The European media mainly frame China as a competitive actor, while the EU values sustainability as the most important aspect in their cooperation. This does show a mismatch in how the EU wants to frame and view on the cooperation with China, and how China is in general portrayed as energy actor in the media. It is to be assumed that such a strong focus on competitiveness on the media will create a very specific picture of China which is transmitted to the public, and that EU's focus on sustainability is difficult to get through to the media, at least this counts for German media. In UK media, China is to a greater extent framed within sustainability (Bain et.al. 2016).

When it comes to the degree In German media, China is mentioned in 241 articles (total number 766), while in UK media it is appearing in 336 articles (total number 753). It is however also important to add to these findings, that China is often occurring in a minor perspective. In UK media, this counts for 233 articles and in German media 136 articles address China in a minor perspective. In the *European Voice* this pattern is even clearer, where China is appearing in a minor perspective in 17 articles, while only six articles mention China in a major or secondary perspective (Bain et.al. 2016).

<sup>11</sup> Media coverage included the following newspapers: for Germany: Süddeutsche Zeitung, Handelsblatt, Spiegel (media coverage: 766 articles); for UK: The Guardian, the Financial Times, the Economist (media coverage: 753 articles); for Europe: the European Voice (media coverage: 12 articles). The very low coverage in the European case has always to be taken into account!



**Figure 5: European perceptions of China as dialogue partner**



*Source: EXIE Data 2015*

In both German and UK press, as well as in the *European Voice*, China is evaluated in a neutral manner, while a clear positive or negative evaluation is hardly visible (see figure 5). This does not seem surprising as such a rather neutral approach is to be expected in quality press. The findings concerning the less clear-cut categories “B/w positive and neutral” and “B/w neutral and negative” are however important to notice (Bain et al. 2016). Here it can be seen that China is evaluated in a slightly negative tone in the UK press, while it is equally divided in the *European Voice*, on the other hand China is evaluated slightly more positive than negative in the German press. However the slightly negative and positive tone in German media are almost evenly present (Bain et al. 2016). The slightly negative evaluations in German media are often related to the competitive character of China, especially related to renewables, where China is considered as an “enemy” to the German solar industry (Nielsen, Policy Brief, Brussels, EnergyGov TU Darmstadt 2015). This would match with the negative tone in the Chinese press when it comes to conflicts with the EU.

## 5. EU-China Energy Dialogue

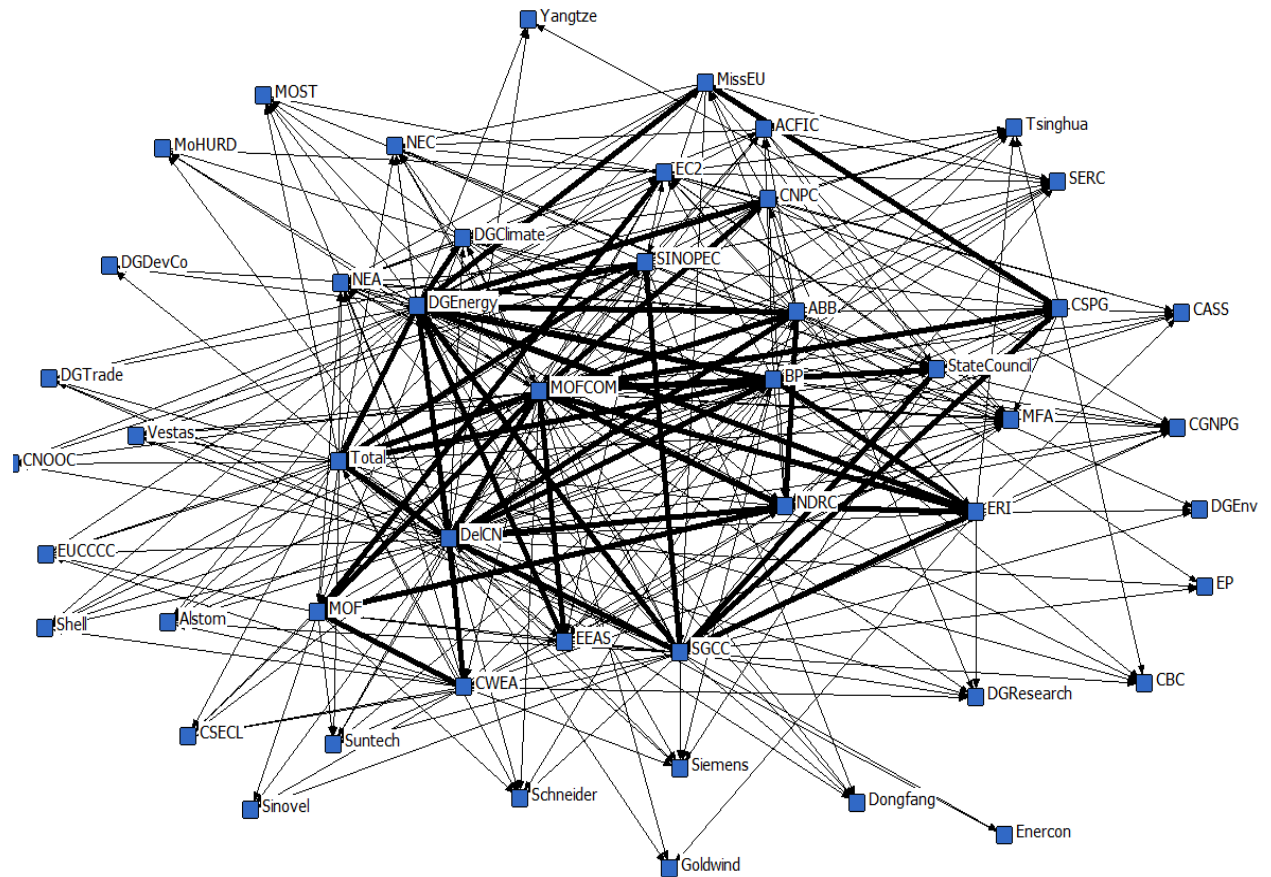
The energy dialogue between China and the EU has a long tradition and is very advanced, compared with other energy dialogues of the EU. It is based on almost 30 years of cooperation history enshrined in the EU-China Trade and Economic Cooperation Agreement (1985) and started with cooperation in basic energy science. As early as 1994, the EU and China initiated bi-annual energy conferences between the European Commission and the Chinese Ministry of Science and Technology. In 2005 the energy dialogue was initiated with the National Energy Administration (NEA) and six priority areas have since been identified for cooperation between the EU and China: renewable energies, smart grids, energy efficiency in the building sector, clean coal, nuclear energy and energy law. Furthermore, energy issues are discussed during the annual high level summits (DG Energy Homepage, 2013) (Knodt et al. 2015: 39).

The year 2012 marked interesting developments and a clear uplifting of China-EU energy cooperation. The first China-EU High Level Meeting on Energy took place in May and for the first time, the EU Commission plus the 27 energy ministers of the EU Member States met with Chinese representatives in this format to enhance cooperation on energy issues. The EU-China Partnership on Urbanization and the Joint Declaration on Energy Security are

milestones in the cooperation, as they were the first documents, which were agreed by all 27 Member States plus the European Commission with the Chinese side. It is remarkable that a dialogue on energy security has been initiated, which gives evidence that for the EU questions of the geopolitics of energy with China gained on importance. The EU discusses issues of Central Asian resources and the role of Russia in the region with its Chinese partners (see Zha et al., 2011). Also, the question of how to engage China in international energy governance reached the political agenda (for example IEA, ECT), as Commissioner Oettinger mentioned in a speech in the European Parliament (May 2012). China was also keen on talking about global energy markets. The EU-China energy dialogue is the only one of EU-BICS dialogues that has resulted in the joint implementation of projects. One example is the EU-China Clean Energy Centre (EC2), which was initiated in 2010 by the European Commission and the National Energy Administration (NEA) as well as the Ministry of Commerce of China (MOFCOM). The main aim of EC2 is to offer support to Chinese government officials in the clean energy sector through capacity building, policy advisory and provision of services in technologies in the focus areas of: clean coal technology, sustainable biofuels, renewable energy sources, energy efficiency in energy consumption, sustainable and efficient distribution systems. There is an EC2 project team of Chinese-European tandems for each of the above mentioned activities, who jointly agree on final results (EC2, 2014). EC2 acts as facilitator between the EU and China. At the 2013 EU-China Summit the 'EU-China Agenda 2020' was agreed including the six points on energy in the chapter on 'Sustainable Development' (EEAS, 2013). Most important, the EU and China want to reinforce cooperation on energy issues, with a special emphasis on global energy security within the framework of the Energy Dialogue (Knodt et.al. 2015: 39f).

In order to show the interaction structure of the EU-China energy dialogue we have carried out a network analyses which asked about the importance of all the actors participating as well as about their exchange behavior. The network structure shows that the Chinese actors are considered to be the most important, i.e. the Ministry of Commerce (MOFCOM), the National Development and Reform Council (NDRC), the National Energy Administration (NEA), and the Ministry of Foreign Affairs (MFA). The NEA has recently undergone a re-structuration process and has been merged with the State Electricity Regulatory Commission (SERC) (see above). As this was after the beginning of our survey, we still analyze both actors, keeping these changes in mind. The NEA is one of the main partners in the energy dialogues. The European Commission calls NEA its "natural partner in energy cooperation" (European Commission, 2014a). However, one would have assumed that the Ministry of Science and Technology (MOST) as another key partner ranks higher in importance (Knodt et.al. 2015: 40).

**Figure 3 Importance network for China-EU energy cooperation<sup>12</sup>**



Source: EnergyGov 2014, Darmstadt

At least European Commission's Directorate-General for Energy (EC DG Energy) called MOST its oldest Chinese partner in energy cooperation (European Commission, 2014a) but it seems to be that it has lost importance meanwhile. The position of the Ministry of Housing and Urban Rural Development (MoHURD) is quite surprising. MoHURD is the partner in the Urbanization Partnership, so that we also expected it to be considered as a very central and important actor (Piefer et.al. 2015).

**Table 1 Top five actors in China-EU energy dialogue<sup>13</sup>**

Importance network		Exchange network		Broker (exchange)	function
Five most important actors (indegree centrality)		Five most important actors (indegree centrality)		Five most important actors (betweenness centrality)	
NEA	33.3	DGEnergy	18.8	MOFCOM	9.0
MOFCOM	29.2	Tsinghua	16.7	DelCH	8.8
NDRC	29.2	CSPG	14.6	CSPG	4.5
MFA	29.2	ACFIC	14.6	DGEnergy	2.9

<sup>12</sup> Importance data: unilateral (thin ties) and reciprocal relations (bold ties).

<sup>13</sup> The table shows the five actors with highest indegree centrality values, both in the importance and exchange network. In the third column we added the data of the betweenness centrality within the exchange networks for the five most important actors in order to create data for the broker function. For an example of interpretation, see the Brazilian case.

DGEnergy 22.9

MFA 14.6

CNPC 2.5

*Source: EnergyGov 2014, Darmstadt.*

Evaluating the responses to our survey question about the importance of the EU COM's DG Energy was mentioned among the top 5 as only EU actor. DG Energy is not only appearing within the importance network but also in the exchange network and serves as broker. It was even seen as the most important actor in the exchange network. In the network picturing regular exchange, the Delegation of the European Union to China (DelCH) is a key actor in the broker function together with DG Energy. DG Climate is also mentioned here. The Delegation plays an important role as a broker, which seems quite reasonable. As a permanent resident in China the Delegation might often be the first contact with the EU in order to find a contact in Brussels (Piefer et.al. 2015).

Since business and market access interests are central for China-EU energy cooperation, the private sector<sup>14</sup> naturally plays an important role and is prominently represented in the network. In the Chinese case state owned companies (SOCs) are central actors with standards and policies being harmonized by the government. They generally have more power than other non-state actors because they are backed by public money and have best conditions to operate in third countries. The China State Power Grid (CSPG) and China National Petroleum Group (CNPG) have been among the most central actors in the exchange network. Also, according to our interviews, the EU Chamber of Commerce in China (EUCCC) in Beijing is central for the representation of European non-state actors' interests, although it does not feature as prominently in the network analysis. It seems that within the working groups the EUCCC is serving as a gatekeeper for European companies, through which they gain access to the dialogues and can shape lobby activities. The EUCCC informs them of developments concerning market access and in its energy working group advices on best strategies to engage with the Chinese authorities (Interviews Brussels, February 2012; Beijing, March 2012). Furthermore, business summits are organized parallel to the summit meetings (which are held without non-state actor participation) to benefit from the fact that all relevant stakeholders are already meeting in the same place (Knodt et.al. 2015: 42).

A glimpse at the network block matrices on importance and exchange indicates the high EU interest in cooperating with China. The EU regards the Chinese public and non-state actors as well as European non-state actors as important and exchanges information with them. Yet, the Chinese public actors attribute greater importance to the Chinese non-state actors and exchange information mainly with them and European non-state actors. From this observation, it can be assumed that Chinese interest is very high in technology transfer and exporting its renewable energy technologies to other world regions, including the European market. Thus, private sector cooperation is favored over public sector cooperation and exchange. Those findings match with the media findings which showed the relative low interest of China in EU energy policy (Piefer et.al. 2015).

<sup>14</sup> For the purpose of this analysis, also Chinese state-owned companies are regarded as part of the "private sector" due to their business logic of functioning vs. that of a public sector institution.

**Figure 4 Importance and exchange network block matrices (China-EU)<sup>15</sup>**

CHINA IMPORTANCE	CHINA EXCHANGE
<p>1 2 3 4</p> <p>-----</p> <p>1 0.188 0.152 0.102 0.121</p> <p>2 0.142 0.087 0.111 0.102</p> <p>3 0.296 0.176 0.185 0.192</p> <p>4 0.258 0.086 0.141 0.140</p>	<p>1 2 3 4</p> <p>-----</p> <p>1 0.146 0.132 0.074 0.091</p> <p>2 0.069 0.083 0.020 0.080</p> <p>3 0.139 0.150 0.222 0.141</p> <p>4 0.030 0.027 0.030 0.000</p>

\* 1 = Chinese public actors, 2 = Chinese non-state actors, 3 = EU public, 4 = EU non-state

*Source: EnergyGov 2014, Darmstadt.*

The EU-China energy dialogue has evolved considerably in the years since its inception and despite of different political prioritizations, indications of increased interest from both sides can be witnessed, such as the amplification of cooperation areas, the high level participants (as the Energy Commissioner or NEA Administrator), EU-Member State coordination within the High Level Meeting on Energy in 2012 as well as the establishment of joint centers and implementation of concrete projects. Generally, the prominence of the EU-China energy dialogue is rather high in comparison to EU dialogues with other countries. Yet, cooperation with EU Member States is often preferred and referred to as 'another cup of tea'. When considerable results and financial flows are expected, China is more likely to address the EU Member States than the EU as they have more to offer (Interviews in Beijing and Brussels, February–May 2012) (Knodt et.al. 2015: 42f).

Germany is China's most important trade partner from all EU member states. From all EU trade with China, the German share is about 29 percent.<sup>16</sup> The same holds true for

<sup>15</sup> Blockmodel: re-grouped data matrices according to the affiliation of actors to one of four categories: domestic public, domestic non-state, supranational public, and supranational non-state institutions and organizations. Calculation based on density values for the respective four sub-matrices. Graphs show the relation of each partition obtaining a density value equal or higher than the density of the respective overall network (attributed as a '1').

investment. Since July 2010 China is not more considered to be a developing country that could receive Official Development Assistance (ODA) from Germany. Instead Germany and China have converted their relationship into a strategic partnership (BMZ, 2014). Like the EU strategic partnership with China, the German-Chinese strategic partnership is having an energy dialogue. The dialogue takes place within the German-Chinese Forum for economic and technological cooperation. Two action group are responsible for Energy issues. Within the “AG Energy” the German Federal Ministry for Economic Affairs and Energy (BMWi) and the Chinese NEA are talking on renewable energies. In a second group (AG Energy Efficiency) the BMWi and the NDRC are working on energy efficiency and strategies for energy saving. In Oktober 2014 the Forum agreed on a common action plan on innovations where energy strategies in both groups are mentioned and an intensification of the effort was announced.

At the moment issues like energy efficiency, biogas, e-mobility and climate protection are on the agenda. Thus, the Bundesministerium für Verkehr, Bau und Stadtentwicklung - BMVBS (now Bundesministerium für Verkehr und digitale Infrastruktur – BMVI) had signed a common declaration on cooperation on sustainable mobility, energy efficiency and emission reduction, and innovative transport technology with the Chinese Ministry for Science and Technology. With regard to the two latter issues, the German Ministry of environment has signed a declaration with the Chinese Ministry of Science and Technology to intensify cooperation in environmental issues and a declaration of intent with the Chinese Ministry for environmental protection to expand the Chinese-German environmental partnership. The agricultural ministries of the two countries have signed a Memorandum of Understanding on biogas cooperation. E-mobility seems to be another major interest has become a major field of cooperation where the German Ministries such as for Transport and Digital Infrastructure and Education and Research are involved. Linked to the EU-China Energy Dialogue, also the German-Chinese strategic partnership in energy issues, technical cooperation in energy efficiency and low-CO<sub>2</sub> urban construction are of great interest for the two countries.

Chinese government is interested in the German Energiewende and keen on learning about best practices as well as sorting out possibilities for investment, such as the investment of the China State Grid Corporation in Desertec Industrial Initiative in 2013. The China State Grid Corporation is very active approaching all German research institutes as well as universities dealing with the Energiewende. At the same time the two countries are competitors on solar panels and RE technologies (Westphal 2015: 95f).

## **6. Understanding the China-EU Energy Dialogue**

Noting that the EU and China multi-level, multi-actor, multi-sectoral dialogue mechanism is in place for long time since 1994, two-third of the interviewees did not see the EU-China energy cooperation became important accordingly. One-third of the interviewees stated that the EU-China energy cooperation only became more important from 2000 onwards, while such growth concentrated in the cooperation in renewable and clean energy (EnergyGov 2014; Zha and Lai 2015: 138f).

If the EU-EP energy dialogue is perceived as being important, it is interesting to know if the actors involved perceive an impact of the dialogue on their own energy policy. Here, we assess how the different actors perceive the impact on the European energy policy.

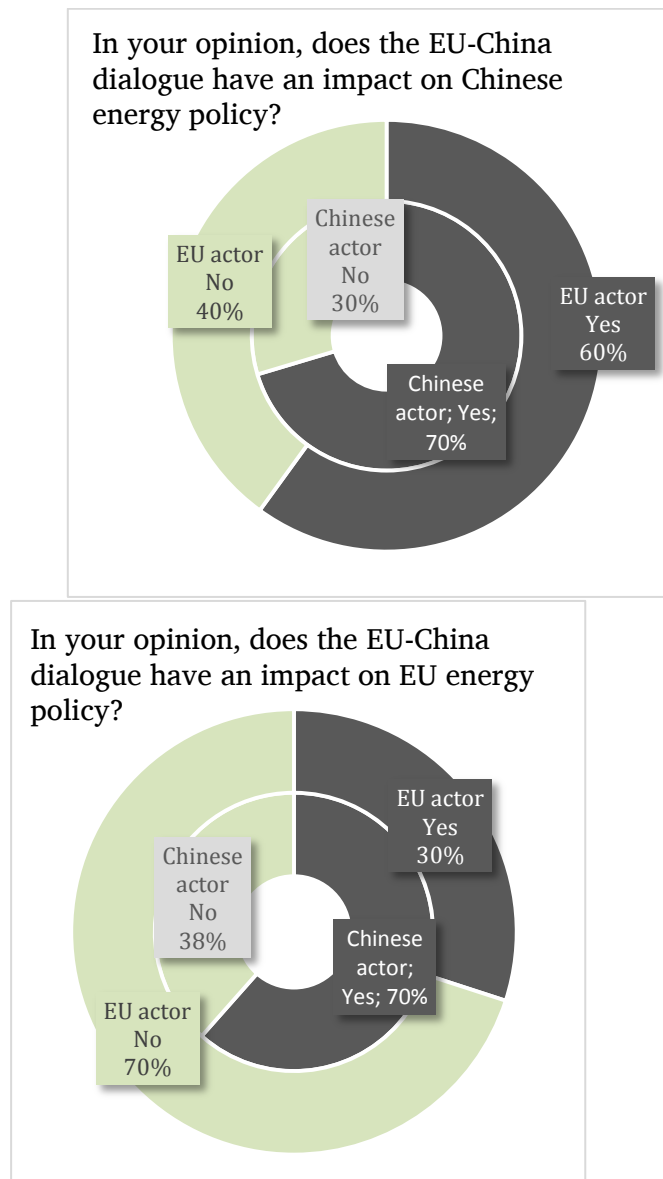
Interestingly, the Chinese and European actors saw the energy dialogue nearly as influential on China’s energy policy (70 percent) (see figure 8). Only one third of respondents

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<sup>16</sup> Eurostat, Comext Database [Accessed 13 November 2014].

felt that the EU-China energy dialogue has no impact on the Chinese energy policy respectively. If we disaggregated the data, we would even witness that 83.3 percent of the public Chinese actors belief that the dialogue has an impact on the EU energy policy (Zha and Lai 2015: 139).

**Figure 8 Impact of the China-EU energy dialogue**



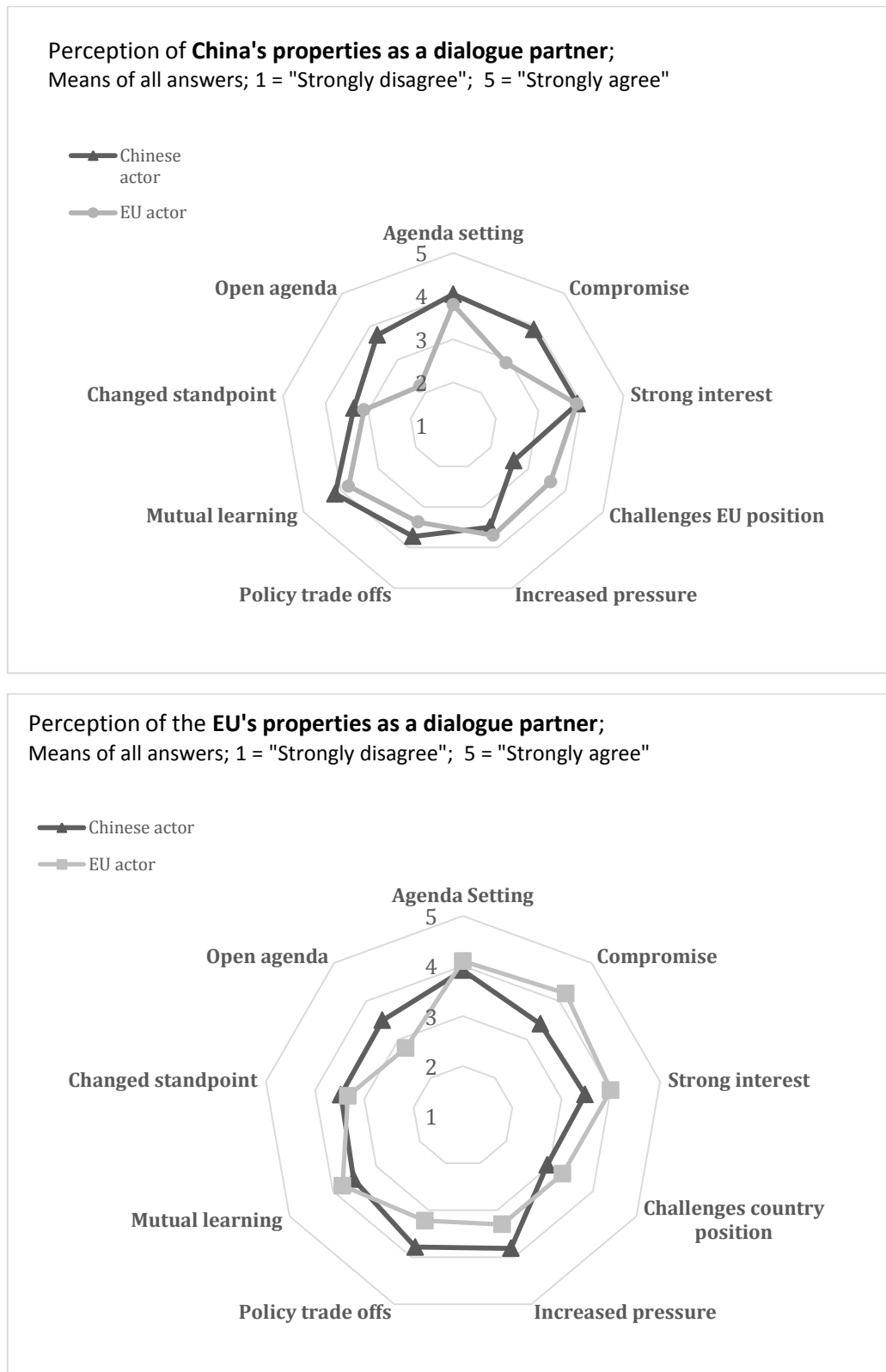
Source: EnergyGov 2014, Darmstadt.

Remarkably, the Chinese actors rate the impact of the EU-China dialogue having an impact on EU energy policy approximately the same whereas the EU actors are much more reluctant. When it comes to EU energy policy 70 percent of the EU actors deny such an impact.

As mutual perceptions of the actors are an important explanatory factor, as this gives evidence of how the dialogic partners view each other's political interactions, agenda-setting qualities, and consensus-building activities (Chaban et al. 2009; Lucarelli and Fioramonti 2010), we had a look at the mutual perceptions of the political and administrative elites. The mutual perceptions can display, to what extent the actors are willing and able to cooperate, or else, which neuralgic points need to be clarified in order to come to terms for cooperative policymaking. In order to explore this issue, we asked our respondents to assess different roles, for instance "being an agenda-setter" or "playing with a hidden agenda" (see

Figure 9). This allows further conclusions on the quality of bilateral energy cooperation and on strategies for optimizing energy cooperation. We, therefore, inquired the mutual perceptions of the dialogue partners, especially agenda-setting qualities, compromise-building skills and diplomatic attitudes in negotiations, such as initiatory activities, trade-offs, open vs. hidden agendas (Knodt et.al. 2015: 335).

**Figure 9 Mutual Perception of China's and the EU's properties as a dialogue partner**





*Source:* EnergyGov 2014, Darmstadt.

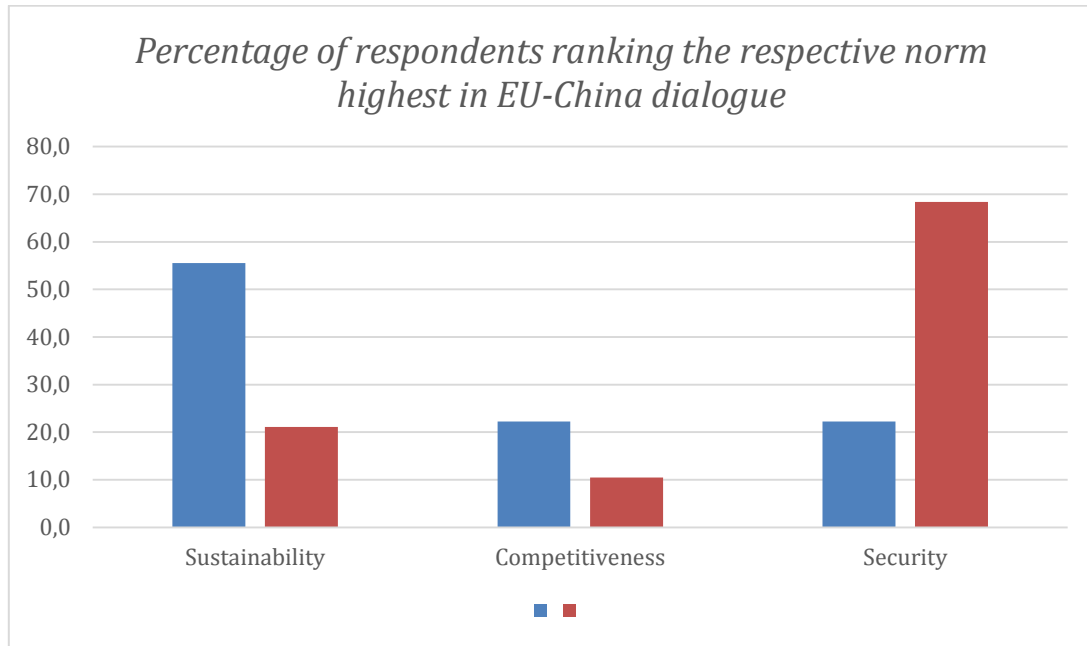
In their self-perception, the EU public and non-state actors tend to view the EU as an active agenda setter and emphasize high compromise-building qualities, as well as an interest in the other negotiation partner, which is also visible in the openness for mutual learning. This generally very positive self-image is slightly less supported by non-state actors, who also stress that the EU has been increasing the pressure on emerging powers during the course of negotiations, and has made use of trade-offs (EnergyGov 2014, Darmstadt). In order to assess this self-perception of the EU one has to contrast it with the xeno-perception of the EU by China. Figure 9 is assessing this self- versus xeno-perception for both parties – the EU and China.

The Chinese and European actors' perception of China in the dialogue converge not in all of the aspects of the Chinese role in the EU-China energy dialogues. As a dialogue partner, China is perceived by the European actors as not open about its positions. Thus, the EU actors perceive China as playing with a "hidden agenda" whereas the Chinese actors think their involvement as rather transparent. Clearly, there is a lack of trust between the two partners in the EU-China dialogue (Zha and Lai 2015: 139).

Some Chinese interviewees estimated that in energy aspect China had more to learn from the EU than vice versa, especially in technology, energy management and regulations. Several respondents mentioned the misunderstandings and misperceptions between China and the EU. These misunderstandings could indeed link back to the aforementioned lack of trust problem. The EU side tended to suspect China's long-term strategic intentions and see Chinese enterprises as competitors. The solar panel trade dispute served as an example. Owing to different stage of development in economy and energy aspects, the interests of the EU and China differ. The various communication mechanisms established were viewed as positive attempts to help the situation. However, the interviewees demanded for more and better communication. Another frequently named problem was the lack of openness of the Chinese and EU energy markets to foreigners, particularly the former. Trade frictions, hence, increase. Restrictions on market access also hinder the flow of technology and know-how. Blocking European companies from entering the energy market means that European advance technology and skills are also blocked from reaching China, while many European enterprises are already reluctant to sell their technology to China. Interviewees remarked that such market access problem could only be settled at EU level, between the EU and Chinese government (Zha and Lai 2015: 140).

Regarding normative orientations, we asked our interviewees to rank the aspects of sustainability, security and competitiveness and choose between different possible understandings of each norm. We then draw conclusions on the normative background that predetermines political interaction within energy governance.

**Figure 10** Normative orientation of EU actors



*Source:* EnergyGov 2014, Darmstadt.

In the EU-China dialogue normative orientations within the energy dialogue do not match. Here we find security as the widely preferred norm by Chinese actors, whereas the EU prefers the sustainability norm. Also our findings give evidence of a European configuration that follows a liberal understanding of energy governance, which increasingly tends to interpret sustainability as energy efficiency while China would subsume energy efficiency under the security norm. Here, it might be helpful for the EU to reframe political goals in light of China's security ambitions, in order to build more common ground on which political dialogue can be based. This might for instance imply a focus on the potentials of renewable energy for guaranteeing security of supply. The EU-China negotiations give evidence of a long-standing cooperation that strongly focuses on sustainability issues, a fact which is comprehensible, for instance when looking at the creation of the Europe-China Clean Energy Center (EC2) (Knodt et.al. 2015: 332f).

Compared to the EU and China perception in the media the perception of the EU by Chinese media converge, EU actors rank the sustainability norm highest within the dialogue and we can witness the same picture within the EU's image in Chinese media. Interestingly, the Chinese elite is ranking the security norm highest. In contrary European media is framing China over all within the competitive norm.

## **7. Conclusions: Lessons Provided by the EU-China Energy Cooperation**

Being the world's first and third largest energy consumers as well as the world's top energy market players, it is inevitably for the EU and China to boost up energy cooperation. Under the current mechanism, mutual exchange and trust are rather far from being at strategic level.

The China-EU energy dialogue, being the oldest and most advanced among the EU-BICS dialogues, has resulted in the joint implementation of projects. Energy efficiency, renewable energies, energy security, and urbanization are the topics which the EU and China have jointly agreed to address. Controversies over intellectual property rights remain to be resolved. However, the long tradition of the dialogue is not reflected in the network

structure; in fact the Chinese-European actors' network is not quite dense and centralized. Chinese actors dominate the network. The only European actor DG Energy is considered as the most important actor in the exchange network, the EU Delegation as well as DG Energy play an important broker role. All other European actors play a marginal role. It seems to be that the polyphonic and fragmented structure within the EU as well as within the Chinese governmental system in causing a loose and more decentralized network. Due to the cross-cutting nature of energy policy, there are many Directorate-Generals (DGs) and Chinese ministries involved in the policymaking which makes an efficient and effective handling of the dialogue a hard task (Zha and Lai 2015: 130).

The analysis has also shown that the EU actors rather try to reach and communicate with the Chinese actors than vice versa. Chinese actors show far less interests in the EU. This perception is supported by the media analysis. China clearly values bilateral cooperation with EU Member States higher than EU level cooperation. They are seen as very important partners for China but are not involved into the dialogues on an institutionalized regular basis, just some first steps have been taken which by now did not have been institutionalised.

Normative orientations and mutual perceptions provide explanatory perspectives, which allow shedding light on the way the EU and China construct, interpret and actually shape their relationship as well as the political orientations that pervade external energy governance. The empirical analysis indicated that China has not yet viewed the EU as a prominent global energy player or a major energy partner. Indeed, China was found rather internal-looking in energy issues. Its strong internal motivation in reducing reliance on fossil fuels and environmental damage makes China particular interested in the EU's advancement in sustainable energy development. Existing dialogue and cooperative projects between the two sides prioritize such aspects as energy efficiency, renewable energy and clean coal technology. In terms of norms in sustainable energy development, the EU was found recognised by China as an advanced norm-setter. A strong will is observed from the Chinese side to learn from the EU on these areas. But as the Economist (2010) stated 'The Chinese no longer want to be passive recipients of information from the outside world; they want to shape the information for consumption at home and abroad' (Lai 2016).

From the EU perspective, it marks a success of its policies and energy-dialogue mechanism towards China in the promotion of sustainable development. This is the EU's highest ranked norm within the dialogue. But, the EU does not seem to understand that China is much more interested in energy security in the first place. The same holds true for European media which attributes the competitive norm as the major norm in the case of China. Such misperception of the normative orientation of the cooperation partner and a normative mismatch within the dialogue is bringing severe problems. Yet, it is not a sample process of EU actively exporting norms in the input end and China passively receiving such norms as the output. Through the continuous energy dialogue and cooperation since the 1980s with the EU, China adopts ideas and practice which it finds fitting its own internal condition and demand. For instance, China valued the EU's advancement in the promotion of energy efficiency and renewable energy industry but disregarded the norms that the EU applied on the protection of private business. The EU's push on other international players for bigger legally-binding commitment at the UNFCCC has induced negative feeling in China. As a high official from the EU Delegation Office in Beijing remarked, 'the EU cannot make China change, China only changes something when it itself wants to do so' (Author interview, 22 October 2013). An example given by him was the lack of interest in the promotion of energy efficiency despite years of preaching from the EU, yet once the Chinese central government became interested, it rapidly proliferated many energy efficiency projects in the final period of China's 11<sup>th</sup> Five-Year Plan (2006-2010) (Lai 2016).

Our findings allow further conclusions regarding the quality of bilateral energy cooperation and for developing strategies to optimize energy cooperation. In their self-perception, the EU public actors tend to view the EU as an active agenda setter. Particularly,

they emphasize the EU's high compromise-building qualities, and recognize the EU's interest in the other negotiation partner, a habit, which is also visible in the openness for mutual learning. Certainly, this very sympathetic self-image needs to be brought in line with the perceptions China keeps of the European actors. Correspondingly, Chinas actors agree that the EU acts as an agenda setter, but is also willing and able to learn from the EP side. While they do not regard the EU as a dominant promoter of interests, they also point out, that the EU is not that reflexive in terms of compromise-seeking or changing a standpoint. During the interviews it was expressed that the EU was on some occasions acting with a hidden agenda which is not shown within the survey data. On the other side European actors showed a lack of trust towards the Chinese partners within the survey (Knodt et.al 2015: 336f).

For the future EU-China energy dialogue the following points seem to be important:

First, dialogue is important. China and the EU invested lots of time and efforts to figure out better ways to dialogue. They tried mechanisms with different representatives, different government levels and different time intervals. It is important for the two to build on existing platforms and initiatives and take stock of past successes. An assessment of the successes and the failures of existing dialogue mechanism should be conducted prior to any new dialogue proposition. Besides, duplication should be avoided, which demands better coordination between different government institutions as well as between the EU and its Member States. Chinese actors within our survey suggested more concrete actions at the China-EU level with reference to the more tangible outcomes at state-to-state level between EU countries and China; better communication and open more to each other's energy market (and avoid trade protectionism). Specifically to the EU, the respondents urged it to avoid duplicating the work of the individual Member States in China as well as to clarify the confusing role between itself and the Member States (EnergyGov 2014, Darmstadt).

Dialogue here is a two-way process, not having the EU as the only norm exporter. Also China has its own domestic agenda, demand and pride. It requests not to be treated as passive norm receivers but as equal partner. Only through a real dialogue the EU can identify common interests with its partners. The EU has to learn to speak 'with' its partners instead of 'to' them (Piefer et.al. 2015: 347-349).

The next step is concrete cooperation in the area of common interest. China desires tangible cooperation in order to secure its energy supply in a sustainable way. Chinese stakeholders urged for more tangible cooperation instead of pure talking. Noteworthy, China prefers state-to-state cooperation with individual Member States because it is easier and quicker to reach bilateral agreement with an individual EU country and to move to concrete actions. Moreover, several stakeholders pointed out that China enjoyed a better leverage when the EU is divided in a negotiation. If the EU wants to play a more important role within the EU-China energy dialogue it has to offer China interesting cooperation project and serve as a manager of the EU Member State / European Union energy governance towards China (Piefer et al. 2015: 350f) .

Whilst understanding that sustainable supply is the prime objective in China's energy policy, the EU can make itself a strategic partner of China by helping China to address its strategic need. Making China's energy consumption cleaner and more efficient is not only benefiting China but also others, including the EU, which is a net energy importer and pioneer in the climate change fight. The results of the China-EU energy dialogue successfully identify the areas where strategic cooperation is needed: joint research and development in clean energy (especially wind and solar) technology and energy efficiency. The next task for the couple to become truly strategic partners in the energy field is to tackle identified obstacles; namely lack of mutual trust, barriers in market access for each others' enterprises as well as weak coordination in each sides' external energy policy.

## References:

- Aggestam, L., 2008. Introduction: ethical power Europe? *International Affairs* 84(1), p.1-11.
- Anon, 2004. 中欧科技合作纵述. 中国科技奖励 (*China Awards For Science and Technology*), 10, pp.91-94.
- Bain, J., Greenland, B., Knodt, M. and Nielsen, L., 2016. A Polyphonic Marketplace: Images of EU External Energy Relations in British, French and German Media Discourses, in: Special Issue in Comparative European Politics. (ed. by Chaban N., Knodt M. and Verdun A.), forthcoming.
- Barnett, D. A., 1981. *China's Economy in Global Perspective*. Washington, D.C.: The Brookings Institution.
- Chaban, N. and Holland, M. (Eds.), 2013. Lisbon and the Changing External Perceptions of the EU: Visions from the Asia-Pacific. *Baltic Journal of European Studies* 3 (3).
- Chaban, N. and Holland, M. (Eds.), 2014. *Communicating Europe in the Times of Crisis: External Perceptions of the European Union*, Palgrave-McMillan.
- Chaban, N., Holland, M. and Ryan, P. (Eds.), 2009. *The EU Through the Eyes of Asia Volume II: New Cases, New Findings*. New Jersey: World Scientific.
- Chow, L.C.H., 1992. The Changing Role of Oil in Chinese Exports Since 1974. *The China Quarterly*, 131, pp.750-765.
- Delegation of the European Union to China, 2012. *Inauguration of China-EU Institute for Clean and Renewable Energy at Huazhong University of Science and Technology*. 30 October 2012. Available at: <[http://eeas.europa.eu/delegations/china/press\\_corner/all\\_news/news/2012/20121030\\_en.htm](http://eeas.europa.eu/delegations/china/press_corner/all_news/news/2012/20121030_en.htm)> [Accessed 5 November 2014].
- Directorate-General (DG) for Enterprise and Industry, Directorate-General (DG) for Energy and Transport of the European Commission and the Ministry of Housing and Urban-Rural Development of the People's Republic of China, 2009. *Cooperation Framework on Energy Performance and Quality in the Construction Sector*. Available at: [http://ec.europa.eu/energy/international/bilateral\\_cooperation/china/doc/building/2009\\_30\\_11\\_signed\\_mou.pdf](http://ec.europa.eu/energy/international/bilateral_cooperation/china/doc/building/2009_30_11_signed_mou.pdf)> [Accessed 5 November 2014].
- Downs, E.S., 2008. China's New Energy Administration: China's National Energy Administration will struggle to manage the energy sector effectively. *China Business Review*, November-December, pp.42-45.
- EEAS, External Action Service, 2012. Joint Declaration for Enhanced Cooperation on Energy between the European Union and the Government of India. Brussels and Delhi.
- EU-China Policy Dialogues Support Facility II, 2014. Available at: <<http://www.eu-chinapdsf.org/EN/pdsf1.asp>> [Accessed 6 November 2014].
- EURactiv, 2012. Large countries oppose EU Gazprom deals scrutiny, 12/09/2012, Available at: <<http://www.euractiv.com/energy/largest-eu-countries-oppose-gazp-news-514739>> [Accessed 3 June 2014].
- European Commission, 2006. *A European Strategy for sustainable, competitive and secure energy*. Green Paper. COM(2006) 105 final. Brussels.
- European Commission, 2007. *An Energy Strategy for Europe*. Communication from the European Commission to the European Council and the European Parliament. COM(2007) 1 final. Brussels.
- European Commission, 2011. *Increasing the impact of EU Development Policy: an Agenda for Change*. Communication from the Commission to the European Parliament, the Council,

- the European Economic and Social Committee and the Committee of the Regions. COM(2011) 637 final. Brussels.
- European Commission, 2013a. *Report from the Commission to the European Parliament, the Council and the European Economic and Social Committee, Implementation of the Communication on Security of Energy Supply and International Cooperation and of the Energy Council Conclusions of November 2011*. COM/2013/0638 final. Brussels.
- European Commission, 2013b. *A 2030 framework for climate and energy policies*. Green Paper. COM(2013) 169 final. Brussels.
- European Commission, 2014a. Energy from abroad. Stakeholders for EU-China Energy Cooperation. Available at <[http://ec.europa.eu/energy/international/bilateral\\_cooperation/china/stakeholders\\_en.htm](http://ec.europa.eu/energy/international/bilateral_cooperation/china/stakeholders_en.htm)> [Accessed 5 November 2014].
- European Commission, 2014b. Press release. Available at: [http://europa.eu/rapid/press-release\\_IP-96-1242\\_en.htm](http://europa.eu/rapid/press-release_IP-96-1242_en.htm) [Accessed 6 November 2014].
- European Commission 2015: EU-China Summit. Press Release.
- European Council 2015. EU-China Joint Statement on Climate Change.
- European Parliament, 2013. EEAS could do much better if institutions coordinated better. [Press release] 24 March 2013. Available at: <<http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-%2F%2FEP%2F%2FTEXT%2FBIM-PRESS%2B20130422IPR07535%2B0%2BDOC%2BXML%2BV0%2F%2FEN&language=EN>> [Accessed 3 November 2014].
- European Union, 2010. Consolidated Versions of the Treaty on the European Union and the Treaty on the functioning of the European Union. Charter of fundamental rights of the European Union. Publications Office of the European Union: Brussels.
- Europe-China Clean Energy Centre (EC2), 2014. Available at: <<http://www.ec2.org.cn>> [Accessed 23 October 2014].
- Finnemore, M. and Sikkink, K., 1998. International Norm Dynamics and Political Change. *International Organization*, 52 (4), pp.887-917.
- Fischer, S., 2009. *Energie- und Klimapolitik im Vertrag von Lissabon: Legitimationserweiterung für wachsende Herausforderungen*. Integration, I/2009. Berlin.
- Geden, O. and Dröge, S., 2010. *Integration der europäischen Energiemärkte. Notwendige Voraussetzung für eine effektive EU-Energieaußenpolitik. SWP Working Paper S13*. Berlin: German Institute for International and Security Affairs.
- Holland, M. and Chaban, N. (Eds.) 2010. *Reflections from Asia and Europe: How do we perceive one another?* Asia Europe Journal 8 (2).
- Holland, M., Ryan, P., Nowak, A., and Chaban, N. (Eds), 2007. The EU through the Eyes of Asia: Media, Public and Elite Perceptions in China, Japan, Korea, Singapore and Thailand. *Singapore-Warsaw: University of Warsaw*.
- ICARE, 2014. The ICARE Institute. Available at: <<http://www.ce-icare.eu/en/article/26/26-en-the-icare-institute>> [Accessed 6 November 2014].
- International Energy Agency (IEA), 2013. *World Energy Outlook 2013*. Paris: IEA.
- Klot, A., 1995. *Norms in International Relations: The Struggle against Apartheid*. Ithaca, NY: Cornell University Press.
- Knodt, M., Müller, F. and Piefer, N. Paper 2010: “Challenges of European External Energy Governance with Emerging Powers: Meeting Tiger, Dragon, Lion and Jaguar”, Panel on “A

- New Mode of European External Energy Governance”, 7th SGIR (Study Group on International Relations) Pan-European International Relations Conference September 9-11, 2010.
- Knodt, M., Müller, F. and Piefer, N., 2012. Rising Powers in International Energy Governance, Paper presented at the DVPW Konferenz "Politik und Ökonomie in globaler Perspektive: Der (Wieder) Aufstieg des Globalen Südens", in Frankfurt, 05.-07.03.2012.
- Knodt, M., Müller, F. and Piefer, N.: Explaining European Union External Energy Governance with Emerging Powers, in: Knodt, M., Piefer, N. and Müller, F. (Eds.): Challenges of European External Energy Governance with Emerging Powers, Ashgate, 57-74.
- Knodt, M., Müller, F. and Piefer, N.: Understanding EU-Emerging Powers Energy Governance: From Competition towards Cooperation?, in: Knodt, M., Müller, F. and Piefer, N. (Eds.): Challenges of European External Energy Governance with Emerging Powers, Ashgate, 327-344.
- Knodt, M., Piefer, N., Chaban, N. and Nielsen, L., 2016 forthcoming. EU-BICS Energy Perceptions, Nomos.
- Lan, L., 2012. Use of fossil fuels to decline. People's Daily Online. [online] 10 February. Available at: <<http://english.peopledaily.com.cn/90778/7725378.html>> [Accessed 6 November 2014].
- Lai, S.Y., 2016. How China Views the EU in Global Energy Governance: A Norm Exporter, A Partner or an Outsider?, in: Special Issue in Comparative European Politics. (ed. by Chaban, N., Knodt, M. and Verdun, A.), forthcoming
- Lee, B. et. al 2015. Enhancing Engagement between China and the EU on Resource Government and Low Carbon Development. Research Paper. Chatham House.
- Lee, B., 2012. The EU and China: Time for a strategic renewal? Chatham House ESPO Report, November, pp. 23-34. Available at: <<http://www.chathamhouse.org/publications/papers/view/187533>> [Accessed 6 November 2014].
- Leung, G.C.K., 2011. China's Energy Security: Perception and reality. Energy Policy, 39 (3), pp. 1330-7.
- Lucarelli, S. and Fioaramonti, L., 2010. External Perceptions of the European Union as a Global Actor. London: Routledge.
- Ministry of Foreign Affairs of the People's Republic of China (MFA), 2014. 中国同欧盟的关系 (China-EU Relations)" Available at: <[http://www.fmprc.gov.cn/mfa\\_chn/gjhdq\\_603914/gj\\_603916/oz\\_606480/1206\\_607640/sbgx\\_607644/](http://www.fmprc.gov.cn/mfa_chn/gjhdq_603914/gj_603916/oz_606480/1206_607640/sbgx_607644/)> [Accessed 6 November 2014].
- Ministry of Science and Technology of the People's Republic of China (MOST), 2010. 第八次中欧能源合作大会在上海召开 (8th China-EU Energy Conference took place in Shanghai). Available at: <[http://www.most.gov.cn/kjbgz/201007/t20100711\\_78370.htm](http://www.most.gov.cn/kjbgz/201007/t20100711_78370.htm)> [Accessed 6 November 2014].
- Mission of the People's Republic of China to the European Union (EU), 2009. China-EU Scientific and Technological Cooperation and Exchange. 9 March. Available at: <<http://www.fmprc.gov.cn/ce/cebe/eng/kj/t72211.htm>> [Accessed 7 November 2014].
- Müller, F., 2015. IRENA's Renewable Energy Governance: Institutional Change, Cooperation Opportunities, and Governance Innovations, in: Knodt, M., Piefer, N. and Müller, F. (Eds.): Challenges of European External Energy Governance with Emerging Powers, Ashgate, 307-325.
- Müller, F., Knodt, M. and Piefer, N., 2015. Conceptualizing Emerging Powers and EU Energy Governance: Towards a Research Agenda, in: Knodt, M., Piefer, N. and Müller, F.

- (Eds.): *Challenges of European External Energy Governance with Emerging Powers*, Ashgate, 17-32.
- Piefer, N., Knodt, M. and Lai, S.Y., 2015. *Perceptions and Challenges of China-EU Energy Cooperation*, Paper presented at the UACES Conference 2015, Bilbao
- Piefer, N., Knodt, M. and Müller, F., 2015. EU and Emerging Powers in Energy Governance: Exploring the Empirical Puzzle, in: Knodt, M., Piefer, N. and Müller, F. (Eds.): *Challenges of European External Energy Governance with Emerging Powers*, Ashgate, 33-53.
- Piefer, N., Knodt, M. and Müller, F., 2015. Policy Recommendations for enhanced EU-Emerging Powers energy Cooperation, in: Knodt, M., Piefer, N. and Müller, F. (Eds.): *Challenges of European External Energy Governance with Emerging Powers*, Ashgate, 345-354.
- Shambaugh, D., Sandschneider, E. and Zhou, H. (Eds.), 2008. *China-Europe Relations: Perceptions, policies and prospects*. London: Routledge.
- Soeya, Y., 1998. *Japan's Economic Diplomacy with China, 1945-1978*. Oxford: Clarendon Press.
- State Council Information Office, 2007. *China's Energy Conditions and Policies*. White paper on energy. Available at <http://www.china.org.cn/english/environment/236955.htm> [Accessed 6 November 2014].
- State Council, 2013. 能源发展“十二五”规划 (12<sup>th</sup> Five-Year Plan on Energy Development). Available at: <[http://www.gov.cn/zwggk/2013-01/23/content\\_2318554.htm](http://www.gov.cn/zwggk/2013-01/23/content_2318554.htm)> [Accessed 7 November 2014].
- United Nations Environmental Programme (UNEP), 2011. *Green Economy Report. Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*. Nairobi.
- Vaclav, S., 1981. Energy Development in China: the need for a coherent policy. *Energy Policy*, 9(2), pp. 113-126.
- Wiener, A. and Puetter, U., 2009. The Quality of Norms is as Good as What Actors Make of Them: Critical Constructivist Research on Norms. *Journal of International Law and International Relations* 5(1), pp.1-16.
- Yin, J. and Huang, D., 2000. Review of China-EU Energy Training Program. *Energy Engineering*, 4, pp. 5-7.
- Zha, D., 2013. China's Perspective: The Search for Energy Security. In: Tellis, A.J. and Mirski, S. (Eds.) *Crux of Asia: China, India, and the Emerging Global Order*. Washington, DC: Carnegie Endowment for International Peace. pp. 209-220.
- Zha, D. and Hu, W., 2007. Promoting energy partnership in Beijing and Washington. *Washington Quarterly* 30(4), pp.105-115.
- Zha, D., Gill, B., Melvin, N. and Duchâtel, M., 2011. Framing an EU-China Dialogue on Energy Security. Stockholm International Peace Research Institute and the School of International Studies. Peking University. Paper prepared for workshop at the Energy and Research Institute, National Development and Reform Commission, Beijing, China. 31 October 2011. Available at: <[http://file.eu-chinapdsf.org/Intranet/PDSF1/Energy\\_Security\\_draft\\_paper.pdf](http://file.eu-chinapdsf.org/Intranet/PDSF1/Energy_Security_draft_paper.pdf)> [Accessed 5 March 2013].
- Zha, D. and Lai, S.Y., 2015. China-Eu Energy Governance: What Lessons to be Drawn, in: Knodt, M., Piefer, N. and Müller, F. (Eds.): *Challenges of European External Energy Governance with Emerging Powers*, Ashgate, 130-147.



Zhang, M., 2011. Analysis of Policy and Mechanism of China-EU Energy Cooperation. *Quan Qiu Ke Ji Jing Ji Lian Wang* (全球科技经济瞭), 26 (3), pp.26-35.