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The Political Economy of an Interrupted Energy Transition:

Power relations, civil society, and hegemony in Spain.

Abstract: In this article, I analyse the conflicts around the interrupted energy transition in Spain from a Gramscian perspective by distinguishing two competing hegemony projects, a grey and a green one. Spain's renewable energy boom was based on a hegemonic constellation including dominant electricity companies. With the outbreak of the financial and economic crisis, the material basis of Spanish pre-crisis energy transition eroded. A closer look at societal power relations indicates that social forces pushing for an energy transition were only weakly rooted in civil society. Against the background of a growing tariff deficit within the Spanish electricity sector and in line with general austerity-based crisis management, Spanish authorities suspended the transition. With the intensification of social struggles from 2011 onwards, however, the energy issue became increasingly politicised. This article provides empirical insights into the energy transition in Spain and contributes to rising debates about the political economy of energy transitions by analysing the mediation between overall economic developments and struggles within civil society and the state.

Key words: energy transitions, Spain, political economy, austerity

Introduction

In 2013, Spain was the first and only country in the world in which wind energy with a share of 21.2 percent formed the most important part of the electricity supply (together with nuclear energy)(REE, Red Electrica de España 2014). Besides wind energy, photovoltaic boomed in 2008 and solar thermoelectric installations grew remarkably in 2009 and 2010. A broad constellation of different actors, including the huge, transnationalised energy companies like Endesa or Iberdrola, whereas the latter is the largest wind farm operator of the world, supported the boom in wind energy. Spain was - together with Denmark and Germany - one of the front runners in the transition towards renewables within Europe (del Río González 2008, Toke 2011). But the renewable energy boom took place against the background of an economic boost that was driven by high capital imports and a focus on the real estate sector, which is highly electricity-consuming (López and Rodríguez 2011: 265-368).

With the outbreak of the financial and economic crisis in Spain, demand decreased and the material basis for the energy transition eroded. Distributional conflicts broke out. Renewable energy industries became entrenched in employing to crisis dynamics. Retroactive cuts for renewable energy operators and a suspension of Feed-in Tariffs for new installations in early 2012 are core elements of the austerity-driven realignment of Spanish electricity regulations. As in other European countries, transition dynamics are nearly suspended under current conditions of crisis and austerity (Geels 2013: 26-30).

This development challenges sustainability transition studies as they focus on the question of what causes transitions to sustainability. Although there has been a shift to a stronger recognition of factors restraining sustainability transitions in more recent years (Geels 2014), little is known about cases in which advancing transitions are almost entirely stalled. The

analysis of the Spanish case therefore provides important insights to this issue and a better understanding of the embeddedness of energy transitions in social relations. I argue in this article that to understand the developments in Spain, a political economy perspective is needed that goes beyond the field of energy policy. Building on Gramscian approaches, I analyse the mediation between overall economic developments, dynamics within Spanish civil society and the Spanish state. These modes of interaction are key to understanding why the transition to a renewable energy regime was interrupted. I argue that the crisis and austerity-driven stalling in Spain's energy transition reveals that it was elite-driven in the first place, yet not based on an active consent within civil society. However, several efforts closely connected to rising social movements within the last few years have been undertaken to push for a green transformation that contains the potential to refresh the path to a renewable energy regime.

In the next section, I will discuss different perspectives on energy transitions and develop my own perspective on energy issues, which is based on Antonio Gramsci's understanding of politics and the literature on hegemony projects. The following section provides a more detailed historical insight into growth dynamics of the pre-crisis economic and electricity system in Spain as well as into the social forces behind the boom of renewable energies. Following that, I will illustrate how the outbreak of the financial and economic crisis changed the political and economic contexts. Those changes are accompanied by shifts in the social relations of forces within the electricity sector. Finally, I will focus on the realignment of the green hegemony project within the actual crisis constellation by building on insights of social movement theories. I will conclude that in the mid-term future the reorganization of the green hegemony project has the potential to gain an active consent for a new energy model.

This theory-led single case study on Spanish energy/electricity transition is based on a literature review on sustainability/energy transitions, Gramscian theory, political economy of Spain and Spanish energy politics. Furthermore, I analysed position papers and studies of relevant actors in Spain as well as press releases and laws. To develop a precise understanding of the pursued strategies and tactics, of the relations of forces and modes of interactions within the field of Spanish energy policy, I conducted 23 interviews in 2014 with experts from companies, bureaucracy, and civil society organizations.

Theoretical perspectives on energy transitions and transformations

Multiple crises, which include intertwined financial, economic, energy, climate, food, and other crisis dimensions, have marked both political and scientific debates about roots of these crises and possible solutions to it (Markard *et al.* 2012, Scoones *et al.* 2015a). As Ulrich Brand (2011) illustrates, most scientific approaches in this field show a steering optimism that is routed in a lack of analysis of the social conditions of production and reproduction. Instead of an analysis of the elementary social conditions of power and authority (like class relations, societal nature relations or patriarchal gender relations that are underlying the current trajectory of unsustainable development), leading transition approaches fixate on technological solutions and address political and economic elites. Brand, and in a similar way Andy Stirling (2015: 54), denote such approaches with the term transition, while transformation approaches, following Karl Polanyi, go beyond steering strategies and are interested in (potential) changes in economic and social power relations.[i]

Regarding energy transitions, the "Dutch" School that embeds energy transitions in broader societal, economic and institutional changes is most prominent. It is based on a multi-level perspective differentiating the niche, the regime, and the landscape level (Verbong and

Geels 2010, Geels 2011b, Grubler 2012). Due to several criticisms, the approach developed further (Geels 2011b). Florian Kern and Adrian Smith (2008: 4102) argue in their study about the Dutch Energy Transition Project that transition debates underestimate the obstacles and possible incoherencies of policy outcomes, while they are at the same time "overly optimistic about the role of governments." Geert Verbong and Frank Geels (2012) claim that transition approaches are often focused on technological innovations and underexpose societal dynamics and conflicts by assuming civil society as driver of green innovations.

A second shortcoming they identify is the focus on policy instruments and economic links, which underestimates the role of values and ideology. Addressing these shortcomings and because of intensifying conflicts within European electricity markets, e.g. in Britain, Geels (2014: 21) demands that transition research should shift their focus to obstacles to transitions. It should rather include insights from political economy regarding power relations, instead of trust in niche innovations: "[…] many transition-scholars have too high hopes that 'green' innovation will be sufficient to bring about low-carbon transitions. Future agendas in research and policy should therefore pay much more attention to the destabilization and decline of existing fossil fuel regimes."

Jordan Kinder(2016: 8) further underlines this point by suggesting that from a Gramscian/historical materialist perspective, energy has to be considered as a social relation that is mediated with the economic structure as well as the integral state. While Adrian Smith (2012) explores that civil-society is a contested terrain, James Angel (2017) conceptualises the struggles of the Berliner Energietisch campaign as directed "in-against-and-beyond the state." This indicates that from a Gramscian perspective the state plays an ambivalent role in energy transitions, as it constitutes a field of hegemonic contestation. Geoff Evans and Liam Phelan (2016) further develop an aspect Angel only remarks on, that

is, the importance of politics of alliances in struggles over energy transitions. They argue that in Hunter Valley, Australia's most important coal mining and exporting region, the hegemony of fossil fuel interests can only be overcome by a broad alliance of counter-hegemonic forces. Those forces have to address workers' concerns with "just transition" discourses and link them to "environmental justice". Lucy Baker *et al.* (2014) highlight similar challenges to abandoning a deeply anchored fossil fuel pathway in South Africa. In their empirically well-founded paper, they develop a political economy perspective on the conflictual energy in South Africa and argue that South Africa's influential "minerals-energy complex" based on cheap coal is a main obstacle to energy transition. Below, I will build on several aspects of these works inspired by Gramsci and develop a perspective based on the concept of hegemony projects.

The most profound analysis on the Spanish energy transition was authored by Mischa Bechberger (2009) - before the crisis developed to its full extent. Using an advocacy coalition framework, he argues that an ecological (in favour of renewable energies) and an economic coalition (sceptical towards the development of renewables) had emerged, while the ecological coalition stays clearly dominant. As will be shown below, this result clearly falls short as the analysis lacks a theoretically grounded understanding of contested social power relations. Instead what is true for South Africa also applies to Spain: "[…] Transitions are deeply political, involve struggle against powerful and deeply entrenched interests, and take years if not decades to bring about" (Baker *et al.* 2014: 814).

A Gramscian perspective on Spain's energy transition

Antonio Gramsci developed a specific understanding about the reproduction and renewal of capitalist class domination from a Marxist perspective through his specific conception of

hegemony. Hegemony is understood as a form of domination/leadership that is based on a combination of coercion and consent. The ruling class seeks to organize consent by leading the common sense of the subaltern classes in a way that they perceive their interests as congruent with the interests of the ruling class. As a result, the subaltern will consent actively or passively/spontaneously to their being ruled/led (Gramsci 1992: 244, 370). While active consent implies that the subaltern classes reproduce a hegemonic constellation out of conviction, passive consent takes the form of acceptance without strong involvement. Following these considerations, the core of political struggle is about universalizing particular interests via ideological leadership. Material concessions and policies of alliances, however, are important elements in these struggles over hegemony, too.

Conflicts over hegemony take place within the 'integral state', which contains civil society and the state: "'civil society', that is, the ensemble of organisms commonly called 'private', and that of 'political society' or 'the State'" (ibid.: 12). Gramsci links these considerations in the following formula: "State = political society + civil society, in other words hegemony protected by the armor of coercion" (ibid.: 263).

The application and operationalization of the concept of hegemony has been the subject of extended debates among researchers (Scherrer 2007). Several approaches have employed the term hegemony project (or hegemonic project) in order to to analyze the articulation of concrete struggles within the overall conditions of social capitalist (re-)production (van der Pijl 1984, Jessop 1990, Bieling and Steinhilber 2000, Kannankulam and Georgi 2014). There are two ways to identify a hegemony project: first, to detect different fractions of capital by assigning them a common political interest; or second, by identifying them through strategic empirical practices and tactics of different actors. All attempts to define hegemony projects share the insight that they are neither static and coherent nor immediately existing but

structure the field of conflict by an underlying understanding of politics in a Gramscian tradition (Buckel 2011: 640).

In order to differentiate competing hegemony projects struggling over Spain's energy transition, I am building on Bob Jessop's (1990) understanding of different accumulation strategies and John Kannankulam's and Fabian Georgi's (2014) approach to aggregate different actors to a hegemony project by analyzing their pursued strategies and practices. While Jessop defines an accumulation strategy as a "specific economic 'growth model' complete with its various extra-economic preconditions" (Jessop 1990: 198), I use the term in a narrower sense referring to the energy sector. Therefore, I distinguish two competing accumulation strategies. The grey[ii] accumulation strategy builds on the valorization of capital that is bound to the fossil-nuclear energy regime, whereas the green[iii] accumulation strategy builds on the valorization of capital through the establishment of a renewable energy regime. In order to understand the political articulation of the two competing accumulation strategies and their concrete struggles within the integral state, it is essential to identify central actors within the policy field, examine their pursued strategies, and group them in hegemony projects on the basis of those two accumulation strategies (Kannankulam and Georgi 2014: 63-4). Interpreting my interviews, position papers, reports, statements, and the scientific literature enables me to identify two hegemony projects that share a common interest.

Regarding the struggles over the character of Spanish energy politics, I can distinguish two competing hegemony projects: The grey hegemony project is bound (materially and ideologically) to the old fossil-nuclear energy regime. The common interest of the project accommodates a slow change of the energy model, privileging the capitalist interests of fossil and nuclear businesses. The five energy companies that form the business association

UNESA (Asociación Española de la Industria Eléctrica), most prominently Endesa and Iberdrola, build the core of the grey hegemony project as they dominate the Spanish electricity market. Within civil society, large parts of labour unions and especially the conservative and business press as well as think tanks like FAES (Fundación para el Análisis y los Estudios Sociales), which is close to the conservative party (PP), form the grey spectrum. Regarding the Spanish state, the Ministry of Industry (MINETUR) being responsible for energy policy can be seen as part of the grey project too. While there was a very low level of conflict during the Spanish boom, grey actors blamed renewable energies, especially solar energies, to be expensive and primarily responsible for the tariff deficit with the outbreak of the crisis[iv]. Furthermore, actors of the grey hegemony project were in favor of sharply increasing electricity prices in order to maintain the profitability of their existing facilities.[v]

The green hegemony project, in turn, is bound (materially and ideologically) to the emerging renewable energy regime. The common interest of this project is a fast change of the energy model towards 100 percent renewable energies. The agential core of the project comprises many new small and medium-sized companies that emerged and established their business models along different scales of the value chain in renewable energy businesses. These developments condensed in a diversification of associations, most prominently is APPA (Asociación de Productores de Energías Renovables), founded in 1987, which covers all renewable technologies. In addition, UNEF is the photovoltaic industry association (Unión Española Fotovoltaica). It was founded in 2012 as a merger of two solar business associations. AEE, the wind industry association (Asociación Empresarial Eólica) was founded in 2002. As big electricity companies invested in wind energy facilities in Spain during the growth period, AEE is strongly influenced by those corporations and therefore takes an

ambivalent position[vi]. All the other business associations are marginally influenced by UNESA companies and follow a clear approach towards a renewable energy regime.

Within civil society, there has been a broad affirmation of renewable energies but apart from environmental NGOs like Greenpeace and Ecologists in Action (Ecologistas en Acción, EeA); there were no vibrant institutions. The participation of the population in the energy transition was quite low, particularly when compared to countries like Germany or Denmark (Bechberger 2009: 296-319, Haas and Sander 27-9, Toke 2011). The actors of the green project seek to universalize their interests by framing it as common welfare. However, as I will show later, there are different visions about the technological and social character of the new energy model within the project. While some actors focus primarily on a change of the technological basis (transition), others push for energy democracy that implies a higher involvement of civil society and further aspects of justice (transformation).

The Spanish pre-crisis (energy) model

Like in most European countries, a Spanish fossil energy regime emerged in line with the Fordist social formation in the 20th century. The fossil energy regime coincided with the emergence of the grey hegemony project. While in 1941, hydropower covered 94 percent of the Spanish electricity supply, the relative importance of this energy resource shrank in the years thereafter. In 1973, 72.9 percent of the Spanish primary energy consumption relied on oil, while 18.2 percent were provided by coal, the only fossil energy source with significant domestic reserves. Between 1968 and 1988, Spain's energy companies constructed ten nuclear reactor blocks. As a result, a highly centralized fossil-nuclear energy regime with state-owned utilities and a very high external dependency emerged (Bechberger 2009: 55-134).

However, heavy social conflicts accompanied the development of nuclear energy. They laid the ground for the emergence of the green hegemony project. In the 1970s (temporally overlapping with the Spanish transition to democracy) a broad anti-nuclear movement evolved in Spain and conflicts especially culminated around the construction of the nuclear power station in Lemóniz, in the Basque country. In 1984, the socialist Spanish government approved a nuclear moratorium and the termination of five reactor blocks under construction was stopped (ibid. 86-124). At the same time, people close to the anti-nuclear movement triggered the development of renewable energies. One example are the founders of the worker's cooperative Ecotecnica who started to design wind turbines (Puig i Boix 2009: 191-5, Toke 2011: 68).

The struggles within Spanish civil society were partly transmitted to the state apparatuses. In 1986, the Spanish government adopted the first renewable energy plan (Plan de Energías Renovables), aiming to increase the share of renewable energies (without large hydropower) in Spanish primary energy consumption up to 3 percent in 1992 (1986: 0.2 percent). The explanatory statement focused less on environmental reasons, but more on industrial policy and employment. Furthermore, the state financed research institutes and introduced the subdivision for the Diversification and Saving of Energy (IDAE) within the Ministry of Industry. The aims of the first renewable energy plan were met mainly because of the fast development of biomass industries (Bechberger 2009: 328-32).

During the 1990s, the green hegemony project gained momentum, the development of renewables continued, and the wind sector became the leading renewable energy branch. With the electricity sector reform act in 1997 (Ley 54/1997), the newly elected conservative Aznar government started to liberalize the electricity market as demanded by the European Union (EU). This new law included a Feed-in Tariff for renewable energies that minimized the

operators' risks by guaranteeing investors a fixed price for produced electricity. Another important aspect of the sector reform was the implementation of a price regulation to ensure that Spain fulfils the inflation target set by the European Monetary Union (EMU) (Sebastián 2013: 41). The liberalization and privatization led to an emergence of five big electricity and gas companies, who today form UNESA. These companies, foremost Iberdrola, were forerunners in the development of the fast growing wind industry.

An economic boom in Spain from 1995 onwards coincided with the liberalization of the electricity market. High capital inflows, corresponding with growing private indebtedness and a real estate bubble, fuelled this boom (López and Rodriguez 2010: 177-314). The industrial base of Spain did not broaden significantly, apart from some exceptions like the renewables sector (Royo 2008: 196). Because of the structural current account deficit and the need for capital imports to guarantee the stability of Spanish accumulation, this regime is characterized by a high degree of financialisation due to massive capital imports and a slim industrial basis (Becker and Jäger 2012: 177-8). Because of weak efficiency policies and economic growth being to a large extent driven by the electricity-consuming construction sector, electricity consumption in Spain rose markedly - by around 86.7 percent - between 1994 and 2007 (Bechberger 2009: 669-70).

New wind and gas power stations mainly satisfied the additional demand. This development path constituted a compromise between the grey and the green actors as both were able to pursue their accumulation strategies. Between 1997 and 2008 the wind power production grew by a factor of fifty, covering 11.3 percent of gross electricity demand in Spain (ibid.: 159-61). Due to volatile feed-in of wind turbines, the growth of wind parks was flanked by a rapid increase of gas power stations, as they are flexible to run up and down. Between 2002

and 2007, the production of electricity by gas was increased by a factor of 13 (ibid.: 67). Mainly the UNESA companies built the new gas power stations.

The tandem of wind energy and gas power stations was flanked by other renewable energies, but those did not become a relevant part of the electricity generation until 2007. In 2007, however, there was a modification of the Feed-in Tariffs. With the Royal Decree Law 661/2007 (Real Decreto Ley, RDL) the Spanish government laid the basis for the photovoltaic bubble in 2008. Due to excessive Feed-in Tariffs, 2511 MW were installed in 2008; this was a share of 45.2 percent of global installations (EPIA, European Photovoltaic Industry Association 2009). The new installations were first and foremost large free-standing solar plants and only to a minor part small-scale PV systems (Bechberger 2009: 679-80). In contrast to the wind energy sector, huge energy companies did not participate in the photovoltaic market. Mainly private persons and institutional investors financed new solar capacities.

Summing up, the beginning and acceleration of Spain's energy transition gained momentum in a specific constellation based on two pillars. The first one was a rapid growth of the economy driven by high capital imports and a real estate bubble, which laid the basis for a tremendous additional demand for electricity. This increasing demand was further supported by a lack of energy efficiency policies and political pressure to keep electricity prices low. Secondly, a hegemonic constellation supported this growth constellation. The central actors of the grey hegemony project were able to continue to valorize their assets bound in the fossil-nuclear energy regime, while creating new spheres of accumulation by investing in wind and gas capacities. In the meantime, new green fractions of capital emerged and developed their business models along different links in the renewables value chains. These business sectors enjoyed continuous growth and consumers benefited from

moderate prices. Due to the electricity transition, the Spanish state was at least able to fulfil its commitments to the renewables directive of the EU from 2001 (EU COM 2001, Brunnengräber and Haas 2014: 224) while Spain would have missed its Kyoto targets without excessively using flexible mechanisms (Bechberger 2009: 634-641).

However, I do not want to neglect here that some conflicts between green and grey actors accrued. For example, NGOs like Greenpeace or EeA kept on pushing for a nuclear phase-out and a fast transition to a renewable energy regime (Greenpeace 2005). Nevertheless, there were no intense social struggles after the nuclear moratorium was passed in 1984. Instead, the Spanish electricity transition was merely based on a passive consent within civil society, or, as one expert has phrased it: "Until 2008 nobody was disturbed by renewable energies".[vii]

Energy in the financial and economic crisis

Spain was hit hard by the financial and economic crisis. The weakness of the financialized Spanish regime of accumulation became apparent. The real estate bubble burst, investments declined, the Spanish financial sector got into serious trouble, unemployment grew dramatically, capital inflows decreased, as interest rates and public debts increased (López and Rodríguez 2011: 369-474). While the second Zapatero government (from 2008 until 2011) initially tried to stimulate the economy, it switched to an austerity-line from May 2010 onwards (Banyuls and Recio 2012: 209) in the sense of a "reduction of wages, prices, and public spending to restore competitiveness, which is (supposedly) best achieved by cutting the state's budget, debts, and deficits" (Blyth 2013: 2). This logic guided the European adaptation to the crisis (Bieling 2015). Certainly, the above-mentioned crisis dynamics as well as the turn to austerity also directly affected the energy market. The energy transition

was interrupted and, pushed by grey actors, the tariff deficit became more and more prominent: “Any debate on energy regulation in Spain is currently dominated by the overwhelming problem of the so called 'electricity tariff deficit'” (del Guayo 2015: 354). At the same time, the green hegemony project got into a defensive position.

While the average annual growth rate of electricity demand was around 5 percent between 1996 and 2007, there was a growth of only 0.3 percent in 2008, and demand even decreased by 5.8 percent in 2009. In 2013, demand for electricity was more than 10 percent below the level of 2008 and around 30 percent below the level that was expected in 2008 (REE, Red Electrica de España 2014). With the declining demand, on the one hand, and the priority feed-in of the renewable energies, on the other hand, the latter became a serious problem for big energy companies. The main ”victims” of this constellation, with regard to access to grid, were the gas power stations that had an unutilised capacity of more than 80 percent in 2013. The grey actors reacted with a strategic shift, focussing on the tariff deficit and blaming the renewable energies for being primarily responsible for it (Fabra Portela and Fabra Utray 2012). Representative for this, the authors of a FAES study conclude: “This burden [the tariff deficit, note by the author] has its basic origin in an uncontrolled increase in premiums for renewable energies” (Navarrete and Mielgo 2011: 11). But since the UNESA companies also have large shares of wind energy, they concentrated their attacks on solar energies (UNESA 2011, 2012, Solorio Sandoval 2013). Before the general elections in 2011, UNESA demanded a solar moratorium, but not a green moratorium (UNESA 2011).

The second Zapatero government reacted to the growing tariff deficit mainly by two measures. First, there was a sharp increase in electricity prices. They augmented by 15.8 percent in 2008, 4.6 in 2009, 13.3 in 2010 and 18.8 percent in 2011 (Fabra Portela and Fabra Utray 2012: 90). Second, the government heavily reduced the support rates for renewable

energies, which caused a slowing down in growth of renewables and started retroactive cuts for already existing renewables capacities. With the RDL 1578/2008, the government approved a law that regulated the development of photovoltaic installations, by which they drastically cut the support rates and introduced a register for inscription. These measures slowed down the development of solar energy and caused a loss of around 20,000 jobs (Bechberger 2009: 449-463). Grey actors used the short boom of the photovoltaic market with excessive overcompensation to argue against further advancements of photovoltaic installations. Miguel Sebastián, Minister for Industry and Energy, proclaimed that the sector would receive € 126,000 million within the next 25 years before starting the retroactive cuts in 2010 (Breva 2014). Triggered by the RDL 661/2007, he estimated the costs of the solar boom at 75,000 million within 25 years (Sebastián 2013: 39). The first retroactive cuts were introduced by the RD 1565/2010 and the RDL 14/2010, which, among other new regulations, limited the yearly maximum funded hours of operation of photovoltaic installations to 1,250 hours. In spite of these measures, the tariff deficit was rapidly rising, it amounted for € 5,108 million in 2008, € 4,300 million in 2009, € 5,554 million in 2010 and € 3,850 million in 2011 (Sallé Alonso 2012: 108).

As I will show below, the following conservative government did not only sharpen austerity-policies but also pushed for an austerity-driven reorganisation of the electricity sector with a large burden for renewable energies (Paz Espinosa 2013a: 3). While the Ministry of Environment has traditionally been in favour of renewable energies, this changed with the establishment of the new PP government in the end of 2011, i.e. with the new minister Miguel Arias Cañete[viii]. In January 2012, a moratorium for the renewable energy support scheme was approved (RDL 1/2012). From there on, only renewable energy projects that were already registered were able to receive Feed-in Tariffs.

As there were big overcapacities in the market and the prices for electricity at the electricity stock exchange declined, the only economically viable way to further develop renewable energies for the green actors was based on self-consumption facilities. This window of opportunity was, after years of uncertainty due to a lack of a legal basis, largely closed in October 2015 by the RD 900/2015, which imposes high administrative burdens and grid use charges (peaje de respaldo).

In the end of 2012, with the RDL 15/2012 the government introduced an electricity tax about 7 percent, affecting all types of energy production, taxes on fossil and nuclear energies and a tax of 22 percent on the production of electricity based on large hydropower plants. At the same time, electricity prices for consumers increased again. Fabra and Fabra (2012: 97) estimate that consumers will have to pay an extra amount of around € 2,200 million, while the renewable energy operators will lose € 750 million and the big hydropower operators € 200 million.

With the RDL 2/2013, the support system for renewables was changed another time with the effect of decreasing revenues. In July 2013, an "austerity-driven energy reform" (Paz Espinosa 2013a) was approved by the Law 24/2013 which was rendered more precise by further decrees. According to the government, the tariff deficit would have exceeded the mark of 10 billion Euros in 2013 without the actions taken in 2012 and early 2013. The government aims to save € 4.5 billion with these new measures, whereby renewable energies have to bear a loss of € 1.5 billion, which is equivalent to a reduction of 15 percent[ix]. Other reductions affect distribution and transport utilities. Prices for fixed charges in consumer bills were increased by 77 percent, whereas the variable part, which depends on the amount of electricity consumed, was slightly decreased (ibid.).

In sum, the financial and economic crisis and its austerity-driven course coincided with a radical shift of the conditions and relations of forces within the electricity sector. Three main changes occurred. First, with the shrinkage of the economic output and the burst of the real estate bubble, the electricity demand decreased and caused high overcapacities within the market. This trend, together with a sharp increase of the tariff deficit, led to the second major change, namely the outburst of heavy distribution conflicts among different actors in the electricity sector, the UNESA companies, the renewable energy industry, the mainly privatized net operator REE, and the consumers (who have quite a weak lobby). Third, the grey actors made a strategic shift to attack renewable energies, especially solar energy, for being responsible for the escalating tariff deficit. As a result, the green actors lost influence and access within the state apparatuses from 2010 onwards.[x]

	Grey hegemony project	Green hegemony project	Policy outcome/political constellation
Pre-crisis phase until 2008	- valorization of capital bound to the fossil-nuclear energy regime - accessing new spheres of accumulation through investments in gas power stations and wind energy	- accessing new spheres of accumulation through developing and investing in different renewable energy technologies (foremost: wind and pv)	Hegemonic constellation - low electricity prices - continuity in carbon and nuclear policies - diversification of the energy mix (installation of gas, wind and to a minor extent pv and solar thermoelectric facilities) - grey and green accumulation strategies were satisfied - private consumers benefited from low electricity prices while they fuelled the real estate bubble/"Spanish miracle" - diversification helped to meet international binding climate and renewable targets

Crisis phase from 2008 onwards	- valorization of capital bound to the fossil-nuclear energy regime - slowing down/stopping the transition - tariff deficit as a leverage to blame pv/renewables for being responsible and too expensive	- defending capital bound to renewable energy facilities - trying to keep a window open for new renewable energy facilities - realigning with sprouting social movements, attacking grey actors for being anti-renewables	Post-hegemonic constellation - sharply rising electricity prices - continuity in carbon and nuclear policies - stalling of the energy transition-heavy distributional conflicts - austerity-driven reorganisation of the electricity market - retroactive cuts for renewable energy operators - tax increases, etc.

Table 1: Interests and strategic approaches of the two competing hegemony projects and policy outcome/political constellation in the pre-crisis phase and during the crisis.

The realignment of the green hegemony project

Against the background of the erosion of the hegemonic constellation that was underlying the Spanish electricity transition, green actors found themselves in a defensive position without access to state apparatuses and with shrinking economic resources. The Spanish electricity transition followed to a large extent Stirling's (2015: 54) definition: "managed under orderly control, through incumbent structures according to tightly disciplined knowledges often emphasizing technological innovation, towards some particular known (presumptively shared) end." Green capital associations (APPA, AEE, associations of solar industries) and environmental NGOs like Greenpeace or Ecologists in Action mainly carried the green hegemony project. Only few social struggles emerged, Spanish society remained largely passive.

As I argue here, there have been important efforts made within the last six years to renew the green hegemony project and to push it in a transformative direction in order to gain an active consent for a green transformation. According to Stirling (ibid.), such a transformation implies the involvement of "more diverse, emergent and unruly political alignments, more

about social innovations, challenging incumbent structures, subject to incommensurable knowledges and pursuing contending (even unknown) ends." As the realignment of the green hegemony project was closely linked to the intensification of social struggles and the upcoming M-15 movement from May 2011 onwards, my analysis will be inspired by findings from social movement theory. Following Melissa Leach and Ian Scoones (2007: 10-6, 2015: 119), four aspects to build movements are central: to mobilize resources, frame issues, construct identities and strengthen networks.

The mobilization of resources was pursued by the foundation of four new actors that strengthened the green hegemony project. The Renewables Foundation (FR, Fundación Renovables) was founded in 2010 as a think tank to push for a new energy model based on renewable energies, energy savings, and higher efficiency. The five founders[xi] are important intellectuals of the green spectrum and have different professional backgrounds: they are from labour unions, environmental NGOs, science, journalism, electricity companies, and business associations. However, as members and spokespersons of the FR they do not represent their employers or any particular interest directly. Even more, the formal independence from any particular interest is of high importance for their work. Apart from developing proposals for the path to a renewable energy system, the FR focuses on networking and social media.[xii] ANPIER (Asociación Nacional de Productores e Inversores de Energía Fotovoltaica) was also founded in 2010 to represent the interests of small producers and investors in solar energies. ANPIER stresses to represent 62,000 Spanish families that have invested in renewable energies. As these investors remained largely passive during the 2000s, it is with the foundation of ANPIER that they started to organize themselves and to articulate their interests.

In the same year, the energy cooperative Som Energia emerged. In the meanwhile, Som Energia has more than 24.000 associates and gives an important impetus to a participatory, decentralized renewable energy regime by pursuing a grassroots democracy approach with importance given to the autonomy of local groups.[xiii] In a similar way, the Platform for a New Energy Model (Px1NME, Plataforma por un Nuevo Modelo Energético), which was established in 2012, pushes for a decentralized and renewable energy regime. It has very close ties to the M-15 and anti-austerity movements. The impulse to found the Px1NME gave the hunger strike of a mayor of a small community in Extremadura against the green moratorium. Several solar thermoelectric projects were planned but could not be conducted in his municipality, which has an unemployment rate above 40 percent. A circle of several supporters including people being active in the FR constituted the Px1NME.[xiv]

The above-mentioned actors have close ties and (re-)produce very similar frames regarding the energy issue. To understand the framing approaches of these actors it is essential to bear in mind the overall crisis context in Spain. Following Geels (2013: 2), who argues that "[c]rises are not self-apparent phenomena, but need to be narrated and explained […] [and] multiple interpretations compete with each other", crises can open up a space for searching alternatives to the existing reality. The central slogan of the M-15 movement was to claim real democracy now (real democracia ya!), which delegitimized the Spanish political system that was established after Franco's death (Huke *et al.* 2015: 742-4). The new actors and movements in the energy field have built on this narrative and also centre the claim for energy democracy (democracia energética) (Puig i Boix 2009) or energy sovereignty (soberanía energética)[xv]. The call for energy democracy implies, on the one hand, that the current energy regime is not democratic (this message is pushed amongst others by the crowdfunded documentary "oligopolyoff" by Px1NME) and on the other hand, that there is a

need to struggle for its realization. This points to the necessity to give a shared identity to different players and persons who identify with the slogan of “energy democracy”.

This identity as a movement for energy democracy is mainly based on two pillars. First, there is an irreconcilable antagonism to the fossil-nuclear energy regime, including the social forces carrying it. The UNESA-companies, yet especially Iberdrola, were under fierce attacks. Greenpeace started a campaign in 2013 accusing Iberdrola for being a company hostile against renewables (Greenpeace 2013). The documentary “oligopolyoff” attacks the UNESA-companies for being an oligopoly with very close ties to political leaders. With the campaign “A la porra Soria”, the platform scandalised the close connection between the responsible Minister Soria and huge energy companies by making a poll, asking not if, but only for which energy company he would start to work after leaving the government. The winner received a solar kit for producing green energy.[xvi]

This refers to the second pillar of the movements’ identity: the grassroots development of new forms of decentralized renewable energy options against all odds. The key actor for giving this positive identity of energy democracy is the fast growing cooperative Som Energia. Especially Px1NME realigns the struggle for a new energy model with the fight against energy poverty, which has become a more and more serious problem during the crisis and contributes to build bridges between the energy movement and emerging protest movements (Romero 2014).

The strength of those different actors fighting for energy democracy is the close linkage between them. In particular, the FR pushes networking in order to tie the movement for energy democracy together and to give it a certain degree of coherence. Networking efforts, however, are not reduced to the movements, but are flanked by attempts to configure parliamentary opposition in line with green energy policy. On April 9th 2014, initiated by the

Px1NME, all opposition parties signed a declaration to withdraw the electricity reform approved by the conservative government in the case of being elected the next government; on May 31st 2014, the broad majority of parties, including the socialist PSOE, announced to prohibit fracking in Spain when coming into power. There were close ties between the ecological wing of the PSOE, represented by Hugo Moran, who is a spokesperson of the FR, and the Px1NME. However, to be clear here, the signing of a letter as an opposition party does not ensure that promises will be converted into political action.[xvii]

These developments indicate that there have been several promising efforts to strengthen and broaden the green spectrum within civil society in close relation to an intensification of social conflicts. These realignments not only broadened the green spectrum but also transformed the green hegemony project by moving away from the logic of a transition into the direction of a movement for transformation. However, the overall crisis and austerity context as well as the economic dominance of grey capital forces leaves green actors in a subaltern position so far.

Conclusions

The analysis of the Spanish energy transition with a Gramscian perspective primarily offers four insights. First, the transition dynamics are strongly associated with the erratic development of Spanish capitalism. During the pre-crisis economic boom, there was a great scope of distribution enabling both the grey and the green accumulation strategy. The competing hegemony projects were integrated in a hegemonic constellation.

Second, as the material basis of this hegemonic constellation underlying Spain's energy transition eroded with the outbreak of the crisis, it becomes important to have a precise understanding of the social relations and struggles within the integral state. As I showed

above, the passive consent within Spanish society for the development of renewable energy was not sufficient to prevent a suspension of the transition in accordance with the overall austerity-driven adaptation to the crisis.

Third, the distinction, between transition and transformation approaches, inspired by Brand and Stirling, proves valuable to understand the social character underlying the energy transition in the pre-crisis phase and the changes within the green hegemony project during the crisis. In touch with sprouting social movements, electricity provision and its mediated power relations became increasingly politicised.

Forth, the classification of two competing hegemony projects is helpful to structure the field of conflict and to highlight the continuities and changes in Spain's energy transition. However, as indicated above, hegemony projects are analytical tools on a high level of abstraction. They are neither immediately existing nor do they map all lines of conflict. Nevertheless, operationalised in this way, they allow an understanding of the interplay of material interests, ideologies, discourses, and strategic approaches.

In sum, the Gramscian perspective and the definition of two hegemony projects offers insights into the articulation of energy struggles with economic developments, the civil society and in relation to the state. It reveals the importance to link energy related struggles with the overall conditions of social production and reproduction. It is fruitful to develop a political economy perspective on Spain's energy transition instead of "introducing Politics and Power into the Multi-Level Perspective", as Geels (2014: 21) suggests. Furthermore, the Gramscian approach opens a perspective that prevents focussing either on green niches or on incumbent actors. Instead, one can capture the complex and dynamic interplay and interlocking of competing (grey and green) actors.

With this case study on the interrupted energy transition in Spain, I demonstrated the importance of a political economy perspective to unveil the mediation of overall economic developments with competing accumulation strategies and energy related struggles within the integral state. Nevertheless, several fields of research need to be further investigated. Regarding Spain, I outline three aspects. First, regarding upcoming struggles, a more detailed understanding of the production of knowledge, the coverage in the media, and the mediation with the common sense of the people would be fruitful to better understand not only the overall developments of the energy transition but also the interplay with everyday life and modes of living (Brand and Wissen 2017). This is especially interesting, and this brings me to the second point, as there are several efforts unfolding on the local level to re-municipalise energy infrastructure in Spain, for example in Barcelona (Ajuntament de Barcelona 2016). To grasp this, an analytical perspective that is more sensitive towards the scalar dimension of the Spanish energy transition (this article focuses on the national level) would be helpful. Third, building on that, a better understanding of the policy process within the (multiscalar) state in a narrower sense would be fruitful to investigate the interplay within the integral state and the importance of knowledge production.

While these aspects also apply for other case studies on energy/sustainability transitions, I want to highlight three further aspects building on this case study. First, operationalising two competing hegemony projects turned out to be fruitful for the case of Spain's energy transition. As it is a novel approach to transition studies, several question occur regarding its potential for a more general use: Does this approach apply for other energy transitions and sustainability transitions as well? If the answer is yes, is there a need to define hegemony projects in a different way? If so, what are the factors causing a necessity for a different definition of hegemony projects?

A second important aspect that remains often underexposed in transition debates, and in this case study as well, is the issue of labour. As Evans and Phelan (2016) show in their study on Australia's Hunter region, labour is a crucial aspect in struggles over energy transitions. Further research is needed to better understand the role of labour in struggles of hegemony in energy and sustainability transitions (Newell 2015: 70).

And third, transitions – at least energy transitions - always imply the emergence of new material infrastructures. That is why they coincide with a reconfiguration of global commodity chains and dynamics of resource extraction taking place mainly in the Global South. Solar panels need silver, batteries need lithium, and wind turbines often contain rare earths. These examples indicate that a more holistic perspective is necessary to understand the effects of transitions on North-South relations (Levy 2008, Radhuber 2015). It remains an open question if this can be achieved with the Gramscian perspective I developed above.

The Gramscian perspective on Spain's energy transition gives important insights in the mediation of radically changing economic developments with developments in civil society and the state in a narrower sense. However, several questions remain unanswered regarding the Spanish case as well as how to further apply this approach to study different cases of sustainability transitions.

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[i] This distinction between transition and transformation approaches is an analytical one, based on the etymological roots of the terms. In the literature, the two terms are mainly used as synonyms (Brand 2011: 51-52).

[ii] Grey symbolizes fossil and nuclear power stations. See also Haas and Sander (2013)

[iii] As Ian Scoones *et al.* (2015b) notice, there are various understandings and shades of green. In this context, green stands for renewable energies.

[iv] "Tariff deficits are shortfalls of revenues in the electricity system, which arise when the tariffs for the regulated components of the retail electricity price are set below the corresponding costs borne by the energy companies." (Johannesson Lindén *et al.* 2014: 3) In Spain, a price regulation was established with the electricity market law of 1997. Several factors apart from the generation of electricity from established technologies cause costs like renewable generation incentives, support for domestic coal, reimbursements for the nuclear moratorium, capacity payments, transmission and distribution, the additional costs for the non-peninsular territories etc. In

2012, the tariff deficit accumulated to nearly 22 billion euros. This equated to 2 percent of Spanish GDP (Paz Espinosa 2013b). Apart from Spain several other European countries face tariff deficits within the electricity sector, especially Portugal and Greece (Johannesson Lindén *et al.* 2014).

[v] Interviews with UNEF, May 2014 and Ecologistas en Acción, April 2014

[vi] Interview with AEE, May 2014

[vii] Interview with labour union Confederación Sindical de Comisiones Obreras (CC.OO), May 2014; author's translation

[viii] He is now Commissioner for Climate and Energy within the European Commission.

[ix] The special regime covers the so-called regulated part of the electricity market, which includes renewable energies, cogeneration and waste.

[x] Interview with APPA, May 2014, UNEF, May 2014 and AEE, May 2014

[xi] The founding president Javier García Breva was head of IDAE and head of the photovoltaic session of APPA, the vice-presidents Domingo Jímenez Beltrán, Fernando Ferrando, and Secretary General Sergio de Ott, had a long professional experience within green enterprises, business associations, and different administrative and scientific institutions. Vice president Pepa Mosquera is founder and editor of the magazine ‚energías renovables' (renewable energies).

[xii] Interview with Fundación Renovables, April 2014; see also: www.fundacionrenovables.org

[xiii] www.somenergia.coop

[xiv] Interview with Px1NME, May 2014

[xv] The Px1NME claims energy sovereignty (soberanía energética), referring to La Via Campesinas claim for food sovereignty (Leach and Scoones 2015: 122-4). The claim for sovereignty has a slightly more radical orientation but is in line with the claim for energy democracy.

[xvi] Interview with Px1NME, May 2014: see also: http://www.nuevomodeloenergetico.org

[xvii] Interview with Px1NME, May 2014: see also: http://www.nuevomodeloenergetico.org