

Behind the EU's energy-climate policy conundrum: erroneous power toolbox, deadlocks and the way forward

Probing the EU power toolbox

Abstract

This paper discusses EU energy and climate policy through the prism of multidimensional power. In so doing, it explores the forms of power EU policy draws from and employs. The paper argues that through its gas first policy the EU misuses its productive power and fails to shift structural power dynamics, while overplaying its institutional and compulsory power despite the EU's obvious limitations regarding the former and impotency in the latter. This mismatch between means and goals points to the need for an alternative power toolbox. This consists in the exercise of productive power to signify clean energy as the new normal; the use of structural/market coercive power to shape and regulate clean energy markets; and increased institutional power deriving from a comprehensive energy transition. This power toolbox relaxes the EU's gas first policy shortcomings, cements EU energy security and supports the global uptake of energy transitions.

Keywords

Productive power, gas, renewables, energy security, energy transition, climate change

Introduction

The study of energy and climate policy can only be conspicuous in the face of the fossil energy use-carbon emissions connection. In this context, energy security can be redefined to signify secure supply of energy at affordable costs within a strict carbon budget (Proedrou, 2018a).

The latter should be designed in such a way that it will contribute to the global goal of carbon emissions' stabilization below the 450 parts per million (ppm), a threshold that would constrain temperature increase to maximum 2 degrees (preferably to 1.5 degrees as the 2015 Paris summit indicated) (Geels, 2014, p. 22).

In the case of the EU, energy supply is based upon fossil fuels - indigenous coal, increasing consumption of mostly imported gas, and mostly imported oil - supplemented by a host of renewable sources (IEA, 2014, pp. 25-28). The share of solar and wind energy in particular has climbed up significantly, albeit from a very low base (Solorio and Jörgens, 2017). Against this background, the EU strives to ensure its energy security. Leaving affordability concerns aside, this paper focuses on supply security and sustainability, and aims to assess EU policy against these benchmark goals. The EU has approached both goals through a markets-based lens, by means of establishing a single energy market. Within this approach, the EU systematically aims to assist the development of market capacity and interconnections in gas trade, boost renewables capacity, and foment carbon trade (Buchan and Keay, 2015; Helm, 2014). To support their fulfilment, the European Energy Union established a mix of diverse, often inconsistent with one another, sets of policies, such as diversification, interdependence, liberalization and full market integration, advanced solidarity, internal restructuring, electrification, de-carbonization and renewables promotion (Pellerin-Carlin, 2017, p. 72).

The policy focus on the central pillars of the evolving single energy market, however, gas and renewables/ emissions, has been rather uneven. The EU has progressively prioritized and securitized gas imports. As a handful of official EU documents portray, gas has been steadily elevated as the key fuel for both supply security and climate goals, and thus acquired pivotal importance in the EU energy and climate policy. At the same time, the EU has weakened instruments and incentives for renewables generation and emissions reduction, thus running the danger of significantly compromising its climate performance (Hinrichs-Rahlwes, 2017).

This is clear in the watered down climate goals for 2030; the modest reforms of the still underperforming EU Emissions Trading System (ETS); and the reshuffling of state aid guidelines that weakens incentives for renewable energy generation.

These shifts essentially signify a re-configuration of the EU's power toolbox. They also draw from and employ different forms of power in the service of the management of the EU's energy and climate goals. Crucially, the exercise of different forms of power affects the EU's capacity to attain its energy and climate objectives. The persistence of significant supply risks and a large emissions gap (UN Environment, 2017; Anderson and Broderick, 2017) point to a substantial capabilities-expectations gap (Hill, 1993) in the energy and climate realms. In what follows, the paper presents the multidimensional power conceptual framework upon which the analysis is premised, unpacks in a more elaborative fashion the changes underway, and critically discusses them under the rubric of different forms of power. In doing so, it assesses whether such changes are a match with the EU's extant strengths and weaknesses, and subsequently suggests an alternative power toolbox to ensure EU energy security. The last section sums up the main findings, and provides relevant and consequent policy recommendations.

The conceptual framework of multidimensional power

Power inheres in diverse forms across all social and political settings. Since power is crucial as a means to achieve actors' goals, and different forms of power can yield different effects, zooming in on the different forms of power actors employ is indispensable to assess their performance, account for their success or understand the reasons of policy failure, and demarcate space for policy change. Since different forms of power interact with and condition each other, their systematic discussion must be particularly insightful for the generation of conclusions regarding policy evaluation.

This paper strives to unpack which forms of power are central in EU energy and climate policy; how they interrelate; whether they yield the results anticipated; and whether the EU should rethink its power toolbox to effect more positive outcomes. By weaving together the different forms of power into a coherent narrative the paper aims to account for the capabilities-expectations gap, disclose where the lack of capabilities inheres, and on this basis suggest a more appropriate power toolbox.

We use the taxonomy of power suggested by Barnett and Duvall (2005) due to its breadth that encapsulates very different, and often disguised, forms of power. This framework, or elements thereof, has been applied in policy areas ranging from energy politics and international relations to tourism, among others (see Proedrou, 2018b; Casier, 2017; Hampton and Jeyacheya, 2015). In particular, Barnett and Duvall (2005) differentiate among four different kinds of power:

- Compulsory power is usually equated with hard power and the capacity to impose one's will on another actor
- Institutional power encompasses all institutional arrangements that influence third states' decision and policy-making
- Structural power refers to power dynamics inhering in mutually constitutive relations, themselves premised upon the roles the parties possess within their relationship
- Productive power refers to systems of signification, and constitutes what counts as mainstream, natural, possible and likely. It boils down to the production of meaning, and to the signification of the value and desirability of certain policies.

While Barnett and Duvall (2005) also divide the four forms of power they suggest into direct and indirect modes of power exercise, the focus of the paper is on the former, as the EU

explicitly exerts direct power over its energy mix and resources, as well as its trade partners. Nevertheless, indirect, unintentional forms of power may also emerge and prove significant. We briefly extend the discussion in this regard towards the end of the analysis and in the conclusion.

This multidimensional framework of power brings the complexity of power into the debate, and allows ample space for the investigation of diverse critical factors. By weaving together the central tenets of institutional, compulsory and structural power, and the disguised, albeit critical, form of productive power, and showing how they condition and interplay with each other, the paper critically discusses what forms of power EU moves both constitute, and further require for the successful implementation of energy and climate policy. Premised upon this analysis, the paper assesses the effectiveness of the different forms of power employed, and sets out an alternative power toolbox more akin to EU energy and climate goals. In particular, the paper strives to establish:

- How can we make sense of the recent turn in EU energy and climate policy under a multidimensional prism of power?
- What do these changes mean for the EU's toolbox required to achieve them?
- Finally, can the EU make different use of these forms of power to strengthen its energy and climate policy?

Unpacking power

In this section, we focus on what the changes regarding the primacy of gas and the advent of the energy transition mean in terms of the use of productive, structural, institutional and compulsory power, whether they serve EU interests, and whether the EU can apply them in a more constructive fashion.

The prioritization and securitization of gas imports

Natural gas has been a central, and increasingly important, pillar of the EU energy security policy since the early 2000s (European Commission, 2000, 2006). This has been mainly due to its branding as a substitute to troublesome oil since the 1970s, and as the transition fuel in the climate change era. At the same time, gas is easy to store, a crucial asset for intermittent sources-based future energy systems, can be put to diverse end-uses and has the potential to de-carbonize in the future (Stern, 2017a).

Since the early 2010s, gas' importance has been further upgraded. This upgrade regards both the increasing frequency of policy focus on gas, as well as the new frames and policy instruments employed to accomplish secure gas supplies. The latter, in particular, has been the result of a securitization turn. Gas imports have been increasingly perceived as appropriate object of securitization, calling for and justifying a broad cohort of responses at the higher political level to enhance the EU's gas import portfolio (Judges and Maltby, 2017). This prioritization and securitization of gas is manifest in a handful of deliberations within the EU.

In particular:

- EU member-states empowered the European Commission to negotiate with gas-rich Caspian states infrastructure and supply schemes (Maltby, 2013, p. 440).
- The European Energy Security Strategy (2014) focuses on gas supply security risks, and prioritized the implementation of no less than 27 gas projects.
- The European Commission (2015, p. 4) even published an Energy Diplomacy Paper, highlighting the EU's prime goal to enhance gas diversification through Central Asia, the East Mediterranean, and LNG trade.
- The EU's Security Strategy paper (2016, p. 22) further stresses the prioritization of gas imports and diversification.
- The European Commission's (2016b) LNG Strategy underlined the role of LNG in

achieving diversification

These moves and documents render crystal clear the focus of the EU on increasing gas supply from external suppliers, and on fostering further diversification to ensure that these supplies will be secure. In light of the persistent deadlock over the previous 25 years regarding the opening up of new gas sources and routes of supply, inherent in this policy approach is a securitizing turn and the subsequent securitization of gas (Judge and Maltby, 2017). As the liberal-internationalist energy paradigm failed to lead to a functional pan-European gas market (Kuzemko, Keating and Goldthau, 2015, pp. 69-72, 85-6; Padgett, 2011; Proedrou 2012, p. 72), the EU intensifies its diplomatic efforts to enhance secure gas supplies, opens up its toolbox, and boosts the primacy of gas trade in its overall energy security strategy.

Rather than this policy trajectory being exogenously given, it constitutes an EU decision among other options and constitutes a form of productive power *per se*. Productive power is one of the most important, but least recognized, forms of power. Those actors able to cede concrete meaning to certain policies, prioritize items in the political agenda, and set the grounds for what constitutes 'normal and desirable' practice enjoy significant advantages in the global scene (Barnett and Duvall, 2005, pp. 55-57). In the energy sector, fossil energy retains centre stage. This is because a host of actors, primarily fossil energy behemoths but also other economic and social actors across the energy systems chain, have managed to signify traditional, centralized, fossil-based energy systems as the most efficient, the indispensable and sole realistic option to ensure uninterrupted flows of energy, while masking their adverse effects (Miller, Iles and Jones, 2013, p. 144). As the EU energy mix and projections for future energy consumption betray (IEA, 2014), the EU operates within this conceptual framework of fossil fuels dominance. Gas, in particular, has been framed as the transition fuel, and has been signified as indispensable to guide a smooth transition towards low-carbon energy systems (European

Commission, 2014, pp.19-20). This framing, however, misrepresents gas' impact on sustainability. First, instead of widely replacing and displacing coal and oil, coal and oil use remains high and gas competes with renewables squeezing the latter's potential. Moreover, in line with the EU Paris commitments, the temporal horizon for gas use is limited. In its 2 degrees commitment, there is no place for any fossil fuel, including gas, after 2035. In its 'well below 2 degrees' commitment, the EU fossil energy budget can stretch only as far as close to a decade (Anderson and Broderick, 2017). Such tight temporal horizons clash with contemporary investment plans on long-term gas supply contracts and pipelines (most emphatically the Nord Stream 2), which will lock-in gas consumption well beyond 2035, severely undermining sustainability goals (European Commission, 2016b, p. 2; Kuzemko, Keating and Goldthau, 2015, p. 49, 121).

The particular exercise of productive power by means of the entrenched policy focus on gas carries critical ramifications for relations with other actors along the gas chain, as well as for gas trade patterns. It renders the gas field a terrain of contestation in which vital (energy) security interests are played out; these in their turn justify an expansive array of policy instruments drawing on different forms of power to bring the EU gas strategy to fruition.

This is where structural power comes in. Structural power can only exist within, and derives from, the specific roles actors possess within a specified relationship (Barnett and Duvall, 2005, pp. 52-55). In the context of gas trade, the EU possesses the role of the importer, and it is in light of this role that it faces certain contingencies and risks. In structural terms then, and premised upon the concrete way the EU exercises its productive power as presented above, the EU not only remains tied in a mutually constitutive relationship with external suppliers, but also increasingly renders this structural relationship more important, lopsided, and hence perilous. This is because its declared goal to increase gas imports will only entrench the structural relationship with third countries upwards the gas chain, and the risks that come along

with it. While interdependence is far from negative in itself, and can also translate into leverage and wherewithal to effect broader positive outcomes, it comes with sources of sensitivity and vulnerability (Keohane and Nye, 1977). The main argument here is that interdependence with Russia remains deeply problematic and risky, at the same time that diversification carries significant risks on its own that also merit significant scrutiny.

This having been said, the EU has managed to circumscribe the leverage external gas players entertain through a combination of internal regulation and structural changes in the globalizing gas market. Subsequently, the EU has been able to equip itself against gas exports being used as a 'foreign policy tool' against it (Goldthau, 2016). Nevertheless, the EU's dependence on Russia carries substantial risks. The turmoil in Ukraine has led to supply interruptions in Ukraine, raising the specter of another cut of gas supplies to European consumers. For southeast EU members in particular, any escalation of the conflict in Ukraine could effectively block the only route through which they can receive (Russian) gas (Jirušek, Vlček and Henderson, 2017). The Baltics and (south-)east European states remain not only largely dependent on Russian gas, but also poorly interconnected to withstand Russian supply cuts (Siddi, 2017b).

Diversification may, in case successful, improve EU structural position in the EU-Russia gas trade, but will not alter broader producer-consumer relations and the EU's fixed position within this relationship. To the contrary, diversification expands dependence on a wider number of exporters and transit countries, creating fresh contingencies. First, a substantial increase of imports through LNG trade will render EU gas security increasingly contingent upon the globalizing gas geopolitics and economics determined by the main producers (Russia, Qatar, the US) and the main consumer (China) (Grigas, 2017; Hulbert and Goldthau, 2013).

Second, assuming Azerbaijan raises its gas production, transit risks emerge. Increasing imports from Azerbaijan means that Turkey will acquire a significant transit role. In light of the low

ebb in EU-Turkish relations and Turkish resurgent confrontational stance vis-à-vis Greece and Cyprus, transit through Turkey does not seem a prudent option. In case the Ukrainian corridor ceases to operate after 2019 and is gradually substituted by Turkish Stream (designed to carry Russian gas to Turkey under the Black Sea), Turkey will see its role upgraded to that of a gas hub transiting part of Russian and all of Azeri gas entering the European market (Siddi, 2017a). Turkish muscle will consequently strengthen, potentially creating fresh contingencies for European gas supply. A host of regulatory and contractual issues will also open up, as gas trade will shift from traditional exporter-importer exchanges to an entry and exit regime with on border purchases (Pirani and Yafimava, 2016).

These caveats are important, but concern only the eventuality that further gas schemes materialize and diversification ensues. The state of the art is that the EU retains a narrow gas import portfolio, features high dependence on a few exporters, and can realistically import more gas only in LNG form as long as the gas glut remains. In all, both scenarios remain problematic: further diversification will bring risks of its own, while the state of the art has been consistently assessed as unsatisfactory and perilous (Judges and Maltby, 2017).

In its quest to attract supply and infrastructure deals with gas producers, the EU has since the end of the Cold War heavily invested in its institutional power. Institutional power derives from actors' capacity to establish, shape or enter institutional structures, set/ co-decide their objectives, procedures and norms, and within them utilize bargaining leverage to influence the position and policies of third states (Barnett and Duvall, 2005, pp. 51-52). In light of its import dependency, the EU has established a broad-ranging institutional energy framework. Through the cornerstone project of the Energy Charter Treaty that set the legal grounds for the creation of a liberal pan-European gas market, the EU aimed to project its political, economic and energy interests and norms to its periphery. Russia's refusal to comply with and eventual decision to abandon the treaty in 2009 (Konoplyanik, 2017) has severely circumscribed the

Charter's field of application, not least as it effectively blocks free gas trade from the Caspian westwards. The EU also established the Energy Community Treaty in 2006, in effect extending the EU energy acquis to the Balkans and some east European countries (Hunt and Karova, 2010). It has to be underlined, however, that a potentially emerging gas hub, Turkey, retains only observer status, and aims to appropriate a role beyond transit functions (Padgett, 2011, pp. 1077-1084). Absent a functional pan-European energy market, bilateral sectoral dialogues, among which the EU-Russia energy dialogue naturally stands out, provide channels for fostering energy co-operation. Nevertheless, co-operation remains principally at a technical level; these forums have failed to mould the positions of third countries, most importantly Russia, and yield substantial, and favourable to the EU, changes in gas trade (Proedrou, 2012). In the same vein, the delegation of extra competencies to the European Commission, as the aggregator of the EU's market wherewithal, with an eye to strike ground-breaking energy deals with Caspian producers has also failed to generate any tangible fruits.

In the absence of any significant leverage deriving from productive, structural and institutional power, the EU seems willing to turn harder in its energy deliberations and exercise compulsory power. Compulsory power pinpoints to coercive modes of action (Barnett and Duvall, 2005, pp. 49-51). Nevertheless, it seems paradoxical to suggest that the EU is in a good position to resort to compulsory power. First, this goes against its preference for low-politics, and its soft power and peaceful identity, enshrined in the concept of normative power (Manners, 2002). Although the EU (2016) has lately identified itself as a civilian power, zealous to use all kinds of non-military means to coerce third states into what the EU views as preferred course of action, two factors weaken this resolve. The first is internal, and refers to the difficulty of striking EU-28 foreign policy decisions and backing them up with appropriate means. What prevails in most cases are watered down, lowest common denominator solutions (Elgström and Jönsson, 2000). Secondly, the EU has failed to match third parties' aggressive moves, including

military ones, and coerce them out of their tough stance.

The cases of Russia and Turkey are emblematic. Russia did not hesitate to invade Georgia in 2008, a move that met with only a lukewarm EU response. Moscow's belligerent tactics in Eastern Ukraine and the annexation of Crimea in spring 2014 have sparked Western sanctions, which, however, have produced little effect to Russian stance. Amidst the most severe post-Cold War East-West crisis, Gazprom has interrupted supplies to Ukraine, potentially impacting EU gas security, a move that did not provoke any EU response beyond sanctions already applied (Pirani and Yafimava 2016, p. 16).

The EU has also failed to back its energy policy with strong diplomacy in its effort to strike long-term energy co-operation schemes with Caspian producers (Proedrou, 2012, p. 73). Turkmenistan and Kazakhstan remain wired in the Soviet-era pipeline system, lack any feasible transportation options to carry their gas westwards, and are under pressure from Russia not to contemplate such schemes. Russia's geopolitical weight with regard to decisions on pipelines crossing the Caspian contrasts emphatically with the EU's lack of bargaining cards. The only Caspian producer lying west of the Caspian, furthermore, Azerbaijan, follows a multi-vector energy policy. Azerbaijan ships gas to Russia as well, this way reducing the amount of quantities available for export to the EU, and has not become a key exporter for the EU despite intensive EU gas diplomacy for decades (Proedrou, 2012).

In the East Mediterranean front, Cyprus' efforts to explore its oil and gas reserves within its Exclusive Economic Zone (EEZ) have invited a fierce Turkish reaction. This has stretched to the presence of Turkish military vessels that obstructed drilling explorations in the Cypriot EEZ, to threats to any party implementing explorations within the Cypriot EEZ, and to statements of intent to conduct its own explorations in another country's sovereign territory. The EU's reaction has been stark rhetorically (EUObserver, 2018), but has hardly moved beyond its declaratory tone, nor coerced Turkey out of its tough stance. The capability-

expectations gap (Hill, 1993) appears to be as real as ever (Table 1).

In sum, gas prioritization and securitization has failed to reduce supply security risks, while threatening to perpetuate unsustainable practices into the future. The employed gas power toolbox has served neither supply security nor climate change mitigation (Table 2).

Forms of power	Gas primacy and securitization	Productive power re-calibrated
Productive	Exacerbates gas primacy Squeezes space for clean energy Signifies gas trade as a field of contestation	Re-signifies the new normal in energy affairs Shifts policy focus on clean energy Relaxes gas as a contestation field
Structural	Retains importer status and associated dependency risks	EU largely dissolves gas trade EU shapes clean energy markets
Institutional	Circumscribed wherewithal to regulate gas trade	Gas institutional shortcomings insignificant Leverage to encourage others to go sustainable increases
Compulsory (speculated)	The capability-expectations gap	Window opens for coercive market instruments

Table 1: The effects of the contemporary and alternative power toolbox

Implications for	Gas primacy and securitization	Productive power re-calibrated
Energy policy	Supply security risks remain	Gas supply risks recede Supply security through clean energy sources and systems
Climate policy	Fossil lock-in effects	Sustainable climate goals can be

	Unsustainable energy practices	met
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Table 2: EU energy and climate goals under the contemporary and alternative power toolbox

The deceleration of climate policy

The second critical change concerns the slowdown of EU climate policy. Since the 1990s the EU immersed into setting emissions reduction goals, mandating energy efficiency increases, fostering market-based instruments to achieve climate goals, and boosting renewables production through favourable fiscal policy (feed-in tariffs) and regulation (priority dispatch mechanism). By the mid of the running decade, however, climate change policy seemed to have lost steam (Hinrichs-Rahlwes, 2017). This slowdown can be traced to four concrete developments:

- Despite the ample criticism of the EU ETS, reforms leading into its third stage in 2014 have been rather modest. Some sectors still remain outside its orbit, and caps remain high with the effect that carbon prices do not rise to discourage fossil energy use and emissions (Pelerin-Carlin, 2017, pp. 85-86). The third stage failed both to institutionalize the indispensable, for the encouragement of renewables generation, floor cap-and-trade price, and to build into the system the progressive increase of carbon prices to stimulate and fast-track carbon emissions reduction (Proedrou, 2018a). The latest reforms in February 2018 will effect a slight increase in emissions prices as well as a reduction of overall permits post-2020. Nevertheless, under the fear of relocation of economic activity, the reforms have remained modest, effectively maintaining subsidies to the fossil industry.
- The 2014 Energy Package came into force after fierce intra-EU deliberations. Following, and building upon, the 20-20-20 goals for 2020, the Package provides for

40 per cent emissions reduction, 27 per cent increase of renewables (but relinquishing commitments at national level), and 27 per cent increase of efficiency (a non-binding target) goals by 2030. The new Package has been criticized on three fronts: lacking grand ambition and being incongruent with increasing bars in climate policy; removing national renewable targets thus allowing members to relax renewables rollout; and, providing only for non-binding energy efficiency goals, thus weakening incentives for business to invest decisively in the efficiency direction (Buchan and Keay, 2015; Helm, 2014; Pelerin-Carlin, 2017, p. 88). On the back of such criticisms, the EU agreed in 2018 to increase its renewables and efficiency goals to 32 and 32.5 per cent respectively and to revise these targets upwards by 2023 (European Commission, 2018a). While this represents an interesting and encouraging development, it still does little to address the large emissions gap (UN Environment, 2017). Targets remain too low for effective climate mitigation, while the non-binding character of the energy efficiency target leaves the door open for non-implementation.

- On the back of criticisms for raising the electricity bill, and arguments that renewables should no more compete in the market without fiscal stimuli, the European Commission has removed feed-in tariffs from its state aid toolbox (Solorio and Bocquillon, 2017, p. 36). This banning remains a non-binding, soft law instrument, as it allows space for exceptions granted under certain circumstances. In February 2017, for example, the European Commission endorsed support schemes for three small-scale renewables projects in France. Nevertheless, the Commission's promotion of tendering systems undermines renewables expansion. Empirical evidence from states that reverted to tendering systems reveals significantly lower investments on renewables projects, a development that indirectly favours traditional fossil energy use and interests (Balcombe, Rigby, and Azapagic, 2014; Solorio and Bocquillon, 2017, p. 36). To make

matters worse, debate is ongoing within the EU policy circles on whether renewables should lose priority access to the grid; in case this materializes, incentives for renewable generation will weaken further (Proedrou, 2018a). Such moves, actual and speculative, mirror the resilience of the fossil regime and the pressure it exerts on policy-making structures to hinder energy transitions (Geels, 2014; Bosman et al, 2018).

- The EU has failed to supplement and empower energy transition pathways with further policy schemes across sectors, involving but not confined to taxation, investment and industrial policy. This having been said, the EU invests on the de-carbonization of the transport sector. It has drawn from several funds to utilize digital technologies and smart pricing in the transport sector, establish clean energy transportation systems, and encourage zero-emission vehicles. Rather than this being a pioneering exercise, though, it can be seen as long-needed action in a sector in which emissions reductions has been sluggish.

These developments do not bode well with the broader emphasis the EU places in its energy and climate discourse on de-carbonization, energy transition and green growth. While these goals have been integrated horizontally into broader policy areas, such as the circular economy, industry, agriculture etc. (European Commission), the mechanisms to achieve them become increasingly diluted. At the same time, the weak link in the EU energy transition remains the de-stabilization of dominant fossil regimes, while boosting the new economy (Geels, 2014; Bosman et al, 2018). Hence, coal, oil and gas retain alarmingly high shares in the EU energy mix. Renewables production has risen as addendum rather than substitute to fossil fuels, and emissions have fallen compared to previous years, but far from sufficiently to meet rising climate bars (European Commission, 2017, p. 22; Geels, 2014, p. 36). While energy security and de-carbonization feature as complementary in the EU's Energy Union Package, moreover,

they are in practice treated as antithetical and contradictory when the EU, in order to ensure smooth supplies, places emphasis on further gas supply that will lock-in further fossil use at the cost of renewables for decades.

In essence, then, the EU's productive power remains limited at best, as it fails to substantially redefine the new normal, the desirable practice in energy affairs. Doing so, however, would be beneficial for a number of reasons. First, it would circumscribe the primacy of gas and consequently render other forms of power that the gas first policy requires and which the EU either lacks or underperforms in, redundant, or far less important. In particular,

- the EU's unfavourable structural position in the international gas trade would be relaxed
- the repercussions deriving from its failure to bind gas exporters and transit states in favourable institutional structures would be limited, and
- there would be no need for the EU to endeavour to extend its toolbox into areas of outright confrontation, punitive measures and perilous competition with other states upwards in the gas chain.

Secondly, an alternative exercise of EU productive power would render clean energy sources and systems the new normal in energy affairs, this way opening up promising avenues for the fulfilment of both benchmark EU goals, supply security and climate change mitigation. The transition can range from an EU-wide electricity grid (Nicolaidis, 2010, p. 39) and a 'bulk power' utility-driven model of renewables expansion, to de-centralized modes of energy production and consumption, or a combination thereof. While in the former case intra-EU renewables trade will benefit some countries more than others, this should not be seen as cause for political concern. First, this is the case with intra-EU competition across sectors; there is no reason why the renewables case should be different/ problematic. Within a mutually agreed and adhered to common market, members are convinced that in the whole they all win in

absolute terms, and have little to fear from relative gains of fellow members. European integration by and large is based upon this axiom. Secondly, since energy is more efficiently used at source (Proedrou, 2018a, p. 81), extensive networks are one, but far from the ideal, mode of setting a clean energy market. Thirdly, concerned member-states can opt for increased energy efficiency to reduce renewables' imports.

Such an exercise of productive power requires a radical mindset change within policy-making circles, which will effectively reverse the fossil fix and put in its place a new clean energy regime. Its foundation will be climate targets that bridge the emissions gap. On this basis, policy-makers can re-calibrate energy and climate policy by means of agreeing to lower carbon caps and a higher floor carbon price, and bolstering efficiency and clean energy support mechanisms.

Far from such a reversal being unrealistic, increasing pressure generated by rising international commitments to address the emissions gap, and low hanging fruits in terms of supply security deriving from the overhaul of the energy systems, constitute solid grounds for member-states to take this path. Member-states can choose the most palatable and feasible policy tools (fiscal stimuli, taxation, bans, regulation, standards etc.), and adjust energy practices to their endowments and contexts to maximize output and benefits (e.g. the South solar energy, the North wind and geothermal energy, urbanized environments energy efficiency, the islands decentralized forms of energy etc.). Based on its market-building competences, the Commission can play a pivotal role in supporting states' de-carbonization schemes by allowing a flexible state aid guidelines matrix, incentivizing fossil divestment, encouraging niche clean energy innovations, and regulating the renewables and prosumers markets.

As power relations inhere in contemporary energy systems, inertia, path-dependence and lock-in effects should not be seen as passive phenomena, but fomented by the fossil regime's resistance to a more profound energy transition (Geels, 2014; Bosman et al, 2018). Likewise,

successful low-carbon transitions require strong political support by powerful economic actors (fossil and clean energy industry) and civil society/ prosumers. The unsustainability of current fossil-based systems (van de Graaf and Zelli, 2016, p. 48), and the collapse of energy companies' traditional business models (Akutsina, Rinaldi and Roy, 2016; Parag and Sovacool, 2016; O'Sullivan, Overland and Sandalow, 2017, pp. 16-17), create conducive ground for the re-invention and transformation of the energy business. Member-states and the Commission must seize this opportunity and exploit the strong link that undercuts niche low-carbon innovations and fossil phase-out with an eye to win business support (Geels et al, 2017: 1243). Such support is critical not only as a starting point; it also creates positive feedback loops that can further empower the drive for transition (Meckling et al, 2015: 1170-1171).

This new business landscape calls for meticulous attention to its social and distributional consequences to avert any backlashes (Geels et al, 2017: 1243-1244), as well as to the role of prosumers and demand-side measures. The European Commission's Winter Package features these possibilities and establishes the EU's intent to place more weight to this potential (EU, 2016a). The initial framework in place facilitates and regulates the role of prosumers, introduces load management and electricity price variability, and encourages electro-mobility through plug-in vehicles (European Commission, 2017a). This framework remains at an infant stage, commensurate with the low level of renewables penetration and the limited number of prosumers, plug-in vehicles and associated infrastructure (European Commission, 2017a). Nevertheless, a more sophisticated and supportive framework of regulations and incentives is in demand to signal the exponential deployment of renewables and smart, clean energy systems, as well as win citizens endorsement and political support (Leal-Arcas et al, 2018, p. 21-31).

Such legislation opens a backdoor for a different trajectory of the energy transition. The EU can break beyond its market-building fixation, and support transition not only in terms of fuels

and systems, but also in terms of ownership structures and agents involved. This avenue can be pursued in case the business community resists change forcefully; as a bargaining chip in governments' strategy to lure business into the energy transition; or as a very conscious attempt to redraw domestic (and European) politics and power constellations away from the market. Embracing a local-based, de-centralized model of energy transition, the EU can support self-generation, distributed energy resources, mini-grids and local energy projects run by energy cooperatives and municipalities. This calls for a quite different sort of politics; it has to tap into collaboration with local actors and embrace a more localized and de-centralized mode of governance. This blueprint bears similarities with the German political system (where local energy systems abound and utilities have lost substantial market share, see Inderberg, Tews, and Turner, 2016) and bodes well with calls for a more flexible Union (Youngs, 2018).

The exercise of productive power along these lines can stimulate EU structural, institutional and even modest compulsory power not only to strengthen its own sustainable supply, but also to encourage fast-track emissions reduction globally to achieve mitigation goals. To begin with, a profound EU energy transition will translate into substantial growth for the global clean energy market. The EU has ample space to (co-)shape the rules of the game, act as a global standards-setter and determine trade terms in ways that ensure sustainable supply of clean energy equipment/ flows. This is due to its 'governmentalized power of technical and political standards' (Kuus, 2010: 8), its market size and its capacity to 'alter the beliefs of other actors over the likelihood of possible outcomes', which more often than not lure them in trade cooperation with the EU in largely EU terms (Damro, 2012, p. 687).

Such power exercise also has aspects of what Barnett and Duvall (2005) call indirect forms of power. The EU will reshuffle its energy system to serve its energy and climate goals, but in doing so will affect other states' energy practices as well, for example through regulatory standardization, network codes and technical compatibility fixes. On the other hand, one should

not underestimate the EU regulatory state's external effects, and EU ambition and proclivity to extend its regulatory space and externalize its policies and standards. This power exercise can thus also in many cases be direct. On top of that, it can unleash substantial compulsory power dynamics. In case the EU ties market access, trade preferences, loans and aid to third countries' sustainable practices, it will utilize its structural power to coerce them into a particular change of course (Damro, 2012).

By investing on a profound energy transition, moreover, the EU will relax the classical fossil energy-geopolitics link and initiate an exit from traditional fossil-based geopolitics. This thwarting of the geography of politics within rigid, pre-morphed spaces, and the subsequent reconfiguration of the spaces that underpin the unfolding of global politics (Kuus, 2010: 2) will render the EU more sustainable while improving access to and availability of energy (Proedrou, 2018a). This is so for two reasons. First, clean energy investments will upend the traditional entanglement of energy security with grand strategy, which has served poorly the EU for decades. Second, contrary to averse gas trade dynamics, imports of clean energy equipment are of a one-off, rather than ubiquitous nature, and are more likely to take place in a competitive global market (Proedrou, 2018a). This contrasts with the oligopolistic, distorted global fossil energy market (see Kuzemko, Keating and Goldthau, 2015, pp. 16-17), and renders clean energy trade less susceptible to political manoeuvring.

In this changing background, a comprehensive energy transition will endow the EU, whose institutional wherewithal currently suffers from EU fossil dependence and its ambiguous record as a low-carbon actor, with increasing credibility as an international partner. At a practical level, showcasing that profound low-carbon energy transitions work can both inspire more ambitious goals, as well as provide blueprints for the uptake of similar policies in third countries (Table 1).

To sum up, exercising EU productive power to signify a profound energy transition as the new

normal in energy affairs displaces the contingencies the entrenched gas policy creates; stimulates EU structural power in ensuring supply security within a strict carbon budget; and foments institutional, structural and even compulsory power in bolstering energy transitions globally. This amounts to a more promising power toolbox for EU energy and climate policy (Table 2).

Discussion and conclusion

This paper used Barnett and Duvall's taxonomy of power to assess EU energy and climate policy. By employing their multidimensional framework, it aimed to locate the policy's strengths and weaknesses, as well as explore a more suitable power toolbox for the EU. The analysis focused on the central, but often unscrutinized, role of productive power in shaping the normal and desirable in energy affairs, and how productive power requires, conditions and interplays with other forms of power.

The entrenched policy focus on gas (productive power) engages the EU in gas trade links (structural power) in which supply security risks abound. It has led the EU to invest in the establishment of institutions that have failed to ensure EU supply security (institutional power), while as of lately it pushes the EU to speculate compulsory power measures to enhance its supply security. To the extent gas locks-in fossil consumption at the cost of renewables and in long time horizons, EU gas policy underserves EU climate policy as well. The multidimensional power analysis revealed that EU energy and climate goals appear incongruent with the gas power toolbox employed.

On the same conceptual basis, the paper suggested the exercise of productive power in novel ways to render a deep energy transition the new normal and desirable in energy affairs. This, in combination with the EU's structural power to set favourite clean energy trade terms, serves EU sustainable supply goals; cancels out the gas power toolbox and largely displaces its

contingencies; and foments the EU's structural, institutional and modest compulsory power to bolster the upscale of energy transitions around the world. The employed multidimensional power framework can guide alternative conceptualizations leading to a power toolbox more akin to EU energy and climate goals.

While Barnett and Duvall divide the four forms of power along a direct/ indirect dipole as well, this application of their framework is fraudulent on the aspects of indirect power exertion. Nevertheless, the establishment of an EU-wide low-carbon energy system constitutes a source of indirect power exercise vis-à-vis other actors. While there is hardly any space for such extrapolations in this paper, it would be interesting to study how such developments would affect lucrative fossil energy exporters.

Finally, at the heart of this study lies the question how the EU can upend its entrenched energy policy against the still dominant fossil regime. The analysis focused on a co-optation strategy with the business community to establish a radically greener energy landscape, and/ or with local communities and prosumers to advance a de-centralized model of energy transition. As Bosman et al (2018) show in their case study of the port of Rotterdam transition, transitions become more feasible as economic and socio-political pressures intensify; traditional practices become unsustainable and hence less profitable and legitimate; and, some regime actors revisit elements of their strategy. At a time when traditional business models collapse, the role of politics is to capitalize on social pressures, ally with those regime actors willing to break loose, and smoothly guide business into more sustainable, legitimate and profitable trajectories through demand creation. In cases of fiercer business resistance, governments can engage closely with prosumers, local communities and municipalities, reshuffle the loci and agents of political battles, and pave the way for a profound bottom-up energy transition.

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