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Strategic Sovereignty in Energy Affairs

Reflections on Germany and the EU's Ability to Act

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Germany's energy sovereignty is undermined by US sanctions on the Nord Stream 2 gas pipeline. As a result, questions surrounding states' strategic capability in energy affairs have recently become a matter of discussion, particularly in Germany, where little attention was previously paid to the notion of energy sovereignty. In view of today's fundamental upheavals in international politics, especially with regard to the geostrategic US-China rivalry, debates about a state's ability to formulate its strategic interests, prioritise its actions and shape its options for energy policy are becoming increasingly important. China's industrial and connectivity policies, the role of the US in energy markets and the energy transformation at large are rapidly changing the global energy landscape and tipping balances of power. The Covid-19 pandemic further accelerates and reinforces these trends. Therefore, it is necessary to integrate energy sovereignty into political debates on the future of sustainable and resilient energy supplies, particularly at the EU level. In order for this to occur, strengthening EU cohesion remains a prerequisite, if not a *conditio sine qua non*.

Of the three vertices that constitute the strategic target triangle of energy policy, "environmental sustainability" and "competitiveness" have dominated Germany's energy policy since the turn of the millennium, while the third vertex, namely "security of supply", has been deemphasised. In Germany, energy supply has been seen through the lens of the functioning market, and rarely against the backdrop of geopolitics. This is because Germany's energy supply relies on functioning and competitive domestic and global markets. With the dissolution of the so-called *Deutschland AG*, Germany first privatised its energy companies, then unbundled and resold them. By contrast, in other (even market-oriented) EU Member States, such as the Netherlands, the state remained actively involved in the affairs of energy companies. Germany's market and efficiency-based orientation has meant that decisions regarding the country's energy policies have been driven by technical and commercial considerations. The situation is quite different in France, Poland and the Baltic States, for example, where sovereignty has long functioned as the guiding principle of energy affairs.

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Defining Strategic Energy Sovereignty

Strategic sovereignty in the realm of energy is characterised by an environment in which sufficient, reliable and affordable energy supplies and services are provided in a manner that does not conflict with, or further yet, endanger a country's values, interests or foreign policy goals (Daniel Yergin). Sovereignty in energy affairs is therefore not synonymous with supply security but instead requires a technically robust energy system that is resilient in crises and fortified against political influence, thereby forming the basis of the state's strategic autonomy and capability to act in energy affairs. Nonetheless, while necessary, such sovereignty is in and of itself insufficient in guaranteeing a country's sustainable energy security over time.

Strategic room for manoeuvre is determined by the ways in which energy security is guaranteed on a continual basis. This requires flexibility, diversification, and the ability to select from as many options as possible. Existent and future energy supplies should not prevent relevant actors from pursuing and implementing their own political, foreign, security and energy policy priorities. In doing so, states must have the institutional, political and material means to implement these priorities cooperatively or, if necessary, of their own accord (see SWP Research Paper 4/2019).

To maintain and expand the strategic ability to act, dependence must be reduced in instances where it leads to vulnerability. Autonomy, however, should in no way be confused with autarchy. On the contrary, strategic partnerships and mutual relations may well help to widen the range and scope of available actions.

Strategic sovereignty has an internal dimension, too, as goals, interests and guiding principles should be clearly defined. A basic consensus within a political community is required.

Nord Stream 2 and the EU Energy Union

Nord Stream 2 is a contentious issue, between the German government on the one side, and Brussels, certain EU Member States, and the US on the other. In Germany, the issue of energy sovereignty is almost exclusively discussed through the prism of Nord Stream 2, while in the EU, Nord Stream 2 presents a major obstacle to joint action.

Berlin's legal position, which is grounded in the application of German and international law (see SWP Research Paper 3/2017), was undercut in April 2019 when the EU amended its 2009 Gas Directive and therewith extended the rules of the EU internal market to apply to pipelines connecting EU territory with third countries. Consequently, more competences in the EU's foreign energy policy shifted from Member States to Brussels. Such represents a broader trend: increasing EU regulation transforms highly political issues into administrative actions. While this means that the issues at hand are less likely to be politicised, it also limits the scope of political action available to Member States.

Moreover, Berlin's sovereignty has been curtailed by the US's determination to prevent Nord Stream 2's realization. Here, the US issued a series of sanctions and public guidance (CAATSA, PEESA and PEESCA) that halted the pipeline's construction at the end of 2019. They also strove to halt its completion by targeting crucial services and technical operations. This has put the German government and its federal states in a difficult position, as they either buckle under US sanctions or actively flank Russian pipe-laying activities.

The developments surrounding Nord Stream 2 show how little Berlin has focused on its own interests in its external communications. The doubling of the capacity of pipelines from Russia directly to Germany to 110 billion cubic metres signifies a major strategic gain for Germany as it minimises transit risks, strengthens the German gas market and bolsters Germany's position as

a regional gas hub and industrial nexus. Certainly, this strategic added value should have been weighed against political rifts within the EU and considered the impacts on Ukraine. Indeed, the European Commission and several Member States saw this development as undermining the goals of the EU Energy Union and inhibitive of individual states' efforts to achieve greater energy sovereignty. Germany has so far not openly addressed this conflict of interest given its strict focus on the market and legal principles.

Article 122 of the Treaty on the Functioning of the European Union (TFEU) stipulates that the concept of solidarity shall be guided by measures appropriate to the economic situation. Thus, economic interests would have forced opponents of the pipeline to balance diverging interests — or at least to confront Germany's position. Finally, other EU states have called for solidarity based on their own political and economic interests. Security of supply, solidarity and trust form the first dimension of the EU Energy Union. At the same time, each Member State has the "right to determine the conditions for exploiting its energy resources, its choice between different energy sources and the general structure of its energy supply" (Article 194(2) TFEU).

Trust and solidarity are ultimately based on diffuse promises and assumptions about others' future behaviours based on common principles and leitmotifs. However, if guiding principles are not shared from the onset or if economic interests are opposed, Member States must seek to balance their interests. In the case of Nord Stream 2, it has not been possible to reach a consensus within the EU. Due to a complaint by Poland, the European Court legally assessed the exemption of the OPAL pipeline that connects Nord Stream 1 with the Czech Republic, and, in the course of the adjudication, readjusted the application of the solidarity principle. Since then, the principle has been established not only as a political leitmotif but also as a criterion for administrative and regulatory decisions. In the EU, the triad of energy security, solidarity and sovereignty thus faces major dissonance.

While the strategic target triangle of energy policy, consisting of "environmental sustainability", "competitiveness" and "security of supply", offers a unique frame of reference and provides for synergy between objectives, it also embodies inherent areas of conflict that must be balanced. The paradigm of the market has lost vigour to the primacy of politics, and Member States differ in their interpretations of energy sovereignty, supply security, and climate protection. These political tensions appear to be decoupled from the comfortable supply within oil and gas markets, from which the EU has benefitted for over a decade.

Security of Supply and Sovereignty

Supply security constitutes the basis for strategic action, and most of Germany's energy demand is still met by oil and gas (60 percent). Although Germany relies heavily on imports for its oil (98 percent) and natural gas (94 percent) supplies, increasing competition within the global oil and gas markets over the past decade has created many options and flexible sources of supply. This has led to a "buyer's market" that has shifted the balances of power in favour of consumer countries. As a result, buyers are able to set the rules of the game, e.g. by setting pricing linkages and schemes. Yet, the EU's internal oil and gas production is steadily declining. Germany sources more than 50 percent of its gas imports from Russia, but is fully integrated into an EU gas market that has become increasingly diversified over the past few years. Imports via pipelines continue to be dominated by Russia, Norway and Algeria, and the share of liquefied natural gas (LNG) varies significantly between 22 to 28 percent in 2020.

In the EU gas market, the principle of solidarity has been translated into EU secondary legislation through prevention and crisis mechanisms. These were tested during Europe's 2012 cold spell (see SWP

Comment 17/2012). Moreover, the 2014 and 2017 stress tests showed relatively high degrees of resilience if EU Member States cooperated. From the German perspective, market and crisis mechanisms can therefore be relied upon.

Eastern European Member States, however, have come to focus increasingly on energy sovereignty. This has resulted in the prioritisation of diversification away from Russia, and, first and foremost, integration into the global, not just EU, energy market. The German government has not perceived Russian imports as problematic in terms of contributing to economic vulnerability, but has instead regarded them as a component of mutual interdependence and the basis on which to create and foster common interests. Among other Member States, on the other hand, Russian energy imports have been increasingly "securitized", as economic issues of supply security are linked to broader security issues. The "compartmentalisation" approach propagated by Germany and Austria, i.e. the limitation of the topic to the purely economic realm, especially in relation to Russia, has therefore found insufficient support within the EU.

The differing approaches within the EU pose Germany with a dilemma: its ideas are not shared among EU Member States, yet it is foreseeable that Berlin will need EU cohesion in order to remain capable of acting and achieving energy security.

There is a growing trend within the EU, but more so globally, characterised by the interlinking of energy, foreign policy and security affairs. Indeed, geopolitics and geoeconomics are increasingly intertwined, power rivalries are being fought with economic means and economic pressure is being applied to achieve political goals. This creates a new environment and poses challenges for Berlin's, and Brussels's, ability to act.

The US: No Longer a 'Natural' Partner

The US had been a partner of the Europeans for decades; these two major consumer centres had formed the nucleus of an "energy security community" under the umbrella of the International Energy Agency (IEA). In terms of security policy, Europe profited from the US, which guaranteed it open and accessible sea lanes and trade routes, including those from the Middle East and the Caspian region.

The liberal principle of free trade of (energy) goods has lost its appeal today because the US has come to instrumentalise both its nodal role in global financial flows and the role of the dollar as the dominant currency in order to achieve foreign and economic policy goals. This is exemplified by Washington's unilateral sanctions against Russia, Iran and Venezuela. The secondary effects of the US's unilateral sanctions negatively affect European oil and gas companies, whose scope of action is being restricted in favour of state-owned corporations from Asia and the Middle East; a trend that the Covid-19 pandemic might intensify as state-owned corporations find themselves able to draw on state funds.

The shock for Europeans resultant of US policy is so profound because it highlights the new situation in no uncertain terms: the "energy-economic West" no longer exists. US policies expose Europe's own inability to act. More than just lacking consensus, Berlin and Brussels lack effective levers and instruments that could cushion or avert the effects of US sanctions (see SWP-Studie 28/2019 and SWP Comment 6/2019).

The newly emerged reality of US energy self-sufficiency and abundance has deprived the alliance of its essential foundations. While unlikely, if the Biden administration continues to exploit its foreign (economic) policy options, as under Trump, the divide between the EU and the US will persist. Compared to the EU, the US will remain self-sufficient and may further supplement its energy abundance by rapidly expanding renewables and by developing new technol-

ogies. The US is rich in solar and wind potential, and has the space to efficiently exploit these renewable energy resources.

The EU, on the other hand, will continue to face traditional challenges to its energy security in the mid-term and will be required to find partners in order to successfully pursue its sustainable energy transformation. Moreover, expensive oil production projects in the North Sea and in Norway have become less commercially viable given relatively low oil prices resultant of the Covid-19 pandemic. Indeed, the pandemic could have a catalytic effect, as the above-mentioned challenges highlight the EU's need for an orderly exit from oil and the necessity to manage this process cooperatively with its suppliers, who are deeply affected by plunges in demand and price that in turn contribute to instability among the EU's neighbouring regions.

Transformation of the Energy System, and the Strategic Capability to Act

The energy transformation involves a two-fold systemic change: the phasing out of the conventional energy system and the creation of a system based on sustainable energy. The challenges that this transformative process poses for governance are considerable. In parallel, supply security must be guaranteed, all while striking the right balance between efficiency and energy security.

From a climate and environmental perspective, transformation of the energy system is urgent. Once implemented, it will offer more political room for manoeuvre because renewable resources, which are available everywhere, can provide energy locally and in a decentralised manner.

However, this process of change brings with it a long list of imponderables (see SWP Comment 42 2018). Fossil fuels will continue to be cheap for the foreseeable future and affordable energy will aid the post-Covid-19 economic recovery in Germany and the EU. Here, difficult balances will need to be struck: on the one hand, short-term, quick profits maintain the existing energy system; on the other hand, relatively higher up-front costs of structural change bring with them the prospect of long-term benefits such as environmental sustainability and increased energy resilience. The systemic transformation requires incremental change and structural ruptures that are not necessarily congruent with the disruption caused by the Covid-19 pandemic. The phasing out of fossil fuel imports may result in more autonomy, but not necessarily in more opportunities to shape the future, as relevant channels of international reconciliation of interests, cooperation and dialogue are lost and the risk of conflict rises.

In the future, energy relations will be driven far more by political decisions than in the past, when the geological availability of oil and gas had a structural effect. One example of this can be seen in electricity grids; the decision to (synchronously) interconnect is based upon political choice. "Electricity grid communities" share both risks and benefits.

The EU's high degree of supply security in the field of electricity is due to EU market integration, which is the only way that Germany has been able to stabilise its electricity grids and trade electricity across its borders. In the future, Germany will grow even more dependent on a tightly meshed European network. In view of further electrification and sector coupling, the demand for electricity in Germany is expected to grow. At the same time, Germany's six remaining nuclear power plants and its coal-fired power plants, with combined capacities of 8.5 GW and 12.5 GW respectively, will be taken off the grid by 2022. In order to realise an exit path, Germany will need to pursue stabilisation measures, in particular by bolstering cross-border interconnection points and cross-border trade.

In the economic sectors in which direct electrification is not possible, climate-neutral molecules (see SWP-Aktuell 37/2020) will play an important role in the future. Here, too, more diversification is conceivable because climate-neutral hydrogen and its derivatives can be produced and trans-

ported in various ways and in various forms across the world. This enables a higher degree of flexibility and widens the scope for action, but requires international co-operation.

Finally, the transformation of the energy system requires access to and availability of metals and rare minerals, as well as their further refinement and processing. These value and supply chains engender new vulnerabilities, as they are sometimes dominated by only a few companies, including those operated by China.

China: the Systemic Challenge

The transformation of the energy system will see the rising importance of industrial and technological policies. This will create new challenges. In the modern sustainable energy system, economic value is no longer derived primarily from the energy resource itself, but instead at the stage of conversion into end-use energy and services (see SWP Comment 42/2018).

Clean energy technologies and innovations are becoming components of geo-economic competition. For Germany and the EU, the question of energy technology sovereignty is acutely relevant to the control and availability of critical raw materials, but also to (future) key technologies and skills. It is yet unknown which technologies and skills will be so strategically important as to justify their localisation within the EU. No doubt, the inherent tension between technological sovereignty, climate change mitigation and energy efficiency will rear its head in time. Simultaneously, value-creation in Europe will continue to be central to socio-economic resilience and welfare, but also key to fulfilling the promise of green growth and jobs.

What is clear, however, is that over the past decade China has placed itself in a key position with regard to energy technologies such as photovoltaics, batteries, electro mobility and concentrated solar power (CSP) tower power plants. Chinese companies offer platforms and system solutions; and they bundle smart applications through their supremacy in the fields of (5G) mobile internet, transmission networks and transformer stations. China dominates the supply and value chains of solar panels, from mining to refining the raw materials required for solar panel plants. China produces over 70 percent of the globe's solar modules. A Bertelsmann study on world-class patents shows China's rapid expansion in innovation-driven energy sectors. Germany has lost its top position in photovoltaics to China. With respect to batteries, China holds nearly 11 percent of the world's patents, behind Japan and Korea, while Germany only holds 7.5 percent thereof.

When it comes to the strategic roll-outs of infrastructure and technologies, Beijing throws the weight of its market into the balance. Abroad, China uses a variety of state instruments through tightly or directly controlled companies. It offers package-deals, including loans, planning, organisation and implementation as well as technical system solutions in a type of "one-stop shop".

Following the financial crisis of 2008/2009, Beijing invested in (critical) infrastructure and key technologies within the EU. A repeat should be avoided after the Covid-19 pandemic.

Beijing's "Made in China 2025" and "China Standards 2035" strategies are clearly formulated. With its thirst for innovation, China continues to focus on localising high-tech sourcing and production, all while striving for global technological leadership. Meanwhile, Beijing can build on advantageous path dependencies whereby two critical infrastructures, namely energy and telecommunication/information technology, are becoming increasingly intertwined.

Beijing's "Belt and Road" initiative further redefines global interdependence and establishes channels of influence; the vectors and dynamics of the initiative's network always lead to China. This strategy provides Beijing with access to and control over central nodes of energy and communication networks. Beijing uses these new techno-political spheres of influence beyond its territory to project political power

and authority (see SWP Research Paper 4/2020, contribution Schulze and Voelsen). This new antagonism of space versus network increasingly determines regional and global dynamics — also in the EU's neighbourhood.

Territoriality as a principle of order and power is on the retreat. Modernisation and restructuring of the energy system both lead to the decoupling and recoupling of energy networks, and hence energy systems create new infrastructural spaces. These new energy spaces do not necessarily coincide with jurisdictions any longer. Governance then takes place along techno-political spheres unbound from territory. Norms and standards are at the heart of this newly emerging paradigm shift. The EU has linked its most important instrument — regulation — to its own legal area and to the "community of law" within the framework of the European Energy Community. Traditionally, the sovereignty of the nation-state is bound to its territory, but if a states' ability to act depends on the availability of and control over new technologies, long-standing notions of political authority can be weakened. Spaces, roles and rule-making are changing and classical security policies and geographical spheres of influence are becoming insufficient in exerting control over highly fluid flows of processes, goods, knowledge, capital and information. In this way, the EU is being confronted with the permeability of its power.

Ways forward: towards Energy Sovereignty

The European Coal and Steel Community was the beating heart of European integration. It recognised the need to establish common control over strategically important sectors; a comparable strategic decision is due again today. If strategic sovereignty is to be granted greater weight, Germany and the EU must contemplate how the carbon-neutral industry will look in 2050 as the basis for EU's social market economy. The EU also needs to take inventory of its toolbox, which has so far been limited to ordo-liberal instruments and energy diplomacy. It is assumed that the strategic geoeconomic competition between China and the US will continue, pushing the EU to (re)position itself.

Firstly, while banal, cohesion within the EU is a necessary precondition to being heard within the concert of powers. To this end, the establishment of European sovereignty should be a clear reference point for Germany and Member States' energy policies, especially in the presence of existing dissonance.

Secondly, to address the challenges posed by a competitive geoeconomic environment, the EU should position itself to create and sustain technological leadership. Sovereignty should not be defined as self-sufficiency or autarchy, but rather rely firmly on international integration, diversification and cooperation. Raw materials, supply chains and production clusters must then be designed not only according to the criteria of efficiency but also with an eye to resilience by tracing the lines of substitutability, diversification and sustainability.

Thirdly, strategic energy technologies, competencies and industries need to be identified and sustained. With regards to their crucial function in the modern energy system, off-shore wind energy, hydrogen and its derivatives, and digital grid management among others should be identified as key areas. Rapid development and implementation of these technologies will be necessary to take advantage of the EU's good starting position, and not to gamble it away — as it did in the field of photovoltaics — to China. This means nothing short of producing strategically important technologies largely within the EU itself. Europe's core competencies must be preserved at critical junctions: in the high integration of renewable energies via transmission system operators, in near-real-time load management within the transmission system, in intra-day trading and in virtual power plants. By doing so, even if it has overslept the great information technology revolution, the EU would have a leg up with respect to these strategic

junctions. It may also be worthwhile to explore the possibility of an "Airbus"-like project for green hydrogen and off-shore windfarms. Fuel cell and battery production, electricity storage, carbon capture, utilisation and storage (CCUS), and next-generation perovskite solar cells can be added to the list of technologies that the EU should develop and nurture. This may require to make changes to the market, the regulatory framework and to provide state-sanctioned aid for the period of time spanning the energy transformation. Home-based industrial-sized production sites and supply chains constitute not only the basis for a more resilient, but also for a circular system. Last but not least, an own production base is the precondition to preserving strategic know-how, technology and innovation skills in the EU. Only if this succeeds, will the EU be on the winning side of the energy transformation.

Fourthly, international partnerships are key, in particular with countries that price CO2 and follow the same rules, norms and standards. Yet, Germany and the EU need to be prepared for "systemic rivalry". Its small and medium-sized enterprises and start-ups that dominate the fields of emerging technology face a difficult international environment. That which once spurred innovation and competitiveness has now become a disadvantage in foreign markets. Protectionism, localisation and sanctions make it more difficult to penetrate markets. The realisation and financing of strategic projects (such as the natural gas pipeline deals of the 1970s/1980s) must become possible again in order to support the competitiveness of technology that is "Made in Germany/the EU". In view of the new international environment, it is indeed a problem that today's state has no channels to directly influence the energy sector, and that Germany cannot sufficiently leverage its market power within its foreign policy. What then, can be learned from the model of *Deutschland AG*? The corporatist negotiation model offered opportunities at that time, creating strategically important social acceptance, too. Germany and the EU must then adapt their foreign trade instruments to the competitive international environment.

Fifthly, the energy transformation needs to be accompanied by a producer-consumer dialogue in order to make the EU and Germany's exit from and restructuring of the current energy system crisis-proof. This will necessitate an approach that commences the paths toward restructuring the status quo towards climate neutrality, as opposed to beginning at the 2050 target and then deriving energy policy from climate targets. The obvious discrepancy between communicated climate targets and the real paths of consumption complicate this dialogue.

In the face of the severe consequences of the Covid-19 pandemic, it should be emphasised in the end that energy sovereignty is of course only *one* guiding principle that must be balanced against "competitiveness" and "environmental sustainability" within the strategic target triangle of energy policy. It should be highlighted that the EU's Green Deal, which links energy and climate policy with technological and industrial policy, is a suitable guiding concept to promote the transformation of the energy sector. After all, "business as usual" will not serve to secure intergenerational justice, service debts or provide true energy sovereignty.

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