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economic sociology. perspectives and conversations

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Suggested Citation: Lis-Plesińska, Aleksandra (2022) : Predictions of electricity prices as embedded devices for coordinating European futures, economic sociology. perspectives and conversations, ISSN 1871-3351, Max Planck Institute for the Study of Societies (MPIfG), Cologne, Vol. 24, Iss. 1, pp. 11-17

This Version is available at:
https://hdl.handle.net/10419/266597

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Predictions of electricity prices as embedded devices for coordinating European futures

Aleksandra Lis-Plesińska

Introduction

With the completion of mass electrification projects in Europe, electricity supply seemed to have gradually escaped the political attention of European publics. No more new villages to connect to the national power grid, no more political celebrations of remote communities entering modernity and sharing its achievements. Electricity supply, even if randomly exposed to delivery cuts, became a taken-for-granted good, an invisible, though acutely essential, part of modern economic infrastructure. With the centrally organized and largely state-controlled organization of electricity production and transmission, the European public could turn to other, more controversial goods and get politically excited about them. These times seem to be fading away as the electricity supply becomes more and more costly, driving up inflation in the whole of the European Union. The term *greenflation* was coined to grasp the inevitable increase in electricity prices – signaling that investments in new renewable energy infrastructures are now part of the European project. This project has taken shape from the beginning of the 2000s, when the European member states led by the European Commission started to devise climate and energy policies – turning concerns about climate change into industrial and economic policies for phasing out fossil fuels and enhancing energy efficiency in Europe.

Today, after two decades of the climate agenda being pushed forward and meticulously tied together with energy policies of the EU and each of the member states, the Russian war in Ukraine has shaken the confidence of the European leaders and added an acutely material reality to the debates on the security of energy supplies, electricity included. The threat of Russian aggression on other countries – the Baltic States or Poland – the sanction games touching upon energy fuel trade, and the prospect of a cold winter season bringing about new political unrest vis-à-vis national governments stir up debates about the value of energy supply and its future prices. And while concerns about climate change introduced a new environmental dimension to electricity valuation – one that has already been difficult to fully reconcile with the modernist logic of valuing electricity solely as part of well-functioning economic systems – the war introduced yet another, moral dimension. This new moral valuation puts the value of energy security, of peace and human life into a conflict – making debates about energy inherently linked to the questions of sacrifice and solidarity against the Russian aggressor. And while oil and natural gas made the headlines in relation to the current war, electricity, generated partly with these two highly politicized fuels, entered the spotlight as well.

Moral arguments related to the war inevitably colored the European debates on climate and energy policies and called into question the European future and its projects. The European Commission restated its devotion to renewable energy right after the outbreak of the war, brining in the security argument and calling Europe to become independent of Russian energy supplies by developing renewable energies locally. In this vision, the acceleration of energy transition – even at the cost of future high energy prices – is the best security strategy for contemporary Europe. Renewable energies are "freedom energies," as German finance minister Christian Lindner recently put it. However, the threat of high energy costs, and the uncertainty of their future predictions, revived some old controversies and divides. In Poland, for example, the pro-coal voices became stronger, reclaiming coal as a guarantor of domestic energy security. Thus, the new moral dilemmas stretching far beyond attempts to reconcile the economic and environmental rationalities of European climate policies carved out a political space for reconsidering coal as a valuable fuel for con-

temporary Europe. All this in a paradoxical situation of the absence of European coal, not its abundance.

This article addresses the complex and ambivalent nature of current discussions on future electricity prices and their relation to national and European political projects. To embed the debates on electricity price predictions historically, I take the reader back to the beginning of 2000s, when the European Union Emission Trading Scheme (ETS) was established to set electrical energy in two regimes of valuation – economic and environmental. Electricity price predictions at that time serve as a point of reference for the builders of ETS – the central instrument of EU climate policies – and as a device for coordinating negotiations of its design. Consequently, the final shape of ETS is a political compromise between different visions of the future of electricity prices in particular member states, with environmental and economic rationales of EU climate policies not fully reconciled. Whether to protect national economies or global environment is still posed as a legitimate question when new climate policy targets are proposed.

In the article, I will address the difficulties in negotiating environmental and economic regimes of valuation for European economies by focusing on electricity price predictions as devices for coordinating future European projects, and the embedding of these devices into different organizational fields. In the time of pan-European inflation, the increase in electricity prices is a timely issue, as costs of energy are part of the inflation calculation. Price predictions, I argue, are devices some actors use to communicate their interests across organizational fields and to coordinate cross-market projects, the EU's green energy transition being one of them. However, as the analysis unveils, price predictions also allow actors to challenge the proposed projects openly, or direct attention toward alternatives – such as national economic growth or energy security – and propose alternative imagined futures to override the EU-driven visions. The focus on price predictions of embedded devices for coordinating European futures opens up broader questions regarding the ability of the EU's institutions to successfully carry out moral projects, especially if they touch upon the existing markets and fragile geopolitical positions of particular member states.

In the following part of the article, I discuss price predictions as market devices and make an argument for studying predictions of electricity prices as devices embedded in various organizational fields. Following in the footsteps of Eloire and Finez (in this issue), I take a Durkheimian perspective on prices, which considers them as things, without any preconceptions on the part of the researcher. Prices should be interesting to sociologists in the sense that they are made in practice by various social actors. From this angle, the law of supply and demand becomes "a maxim of action rather than a generalizable rule" (this issue) – a claim that can empirically be supported by a number of historical cases. I then go on to provide a brief examination of the 2008 ETS reform to develop a historical case about the way in which ETS evolved through various controversies about future electricity prices, especially with the participation of Polish industry and power sector representatives. In the conclusions, I show how these ambivalences and difficulties in reconciling logics of different fields have created difficulties in stabilizing the current discourse on the reasons for the increase in electricity prices.

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Price predictions as embedded devices for negotiating futures

In economic sociology, most attention has been paid to price formation processes as the outcomes of social and political forces (Eloire and Finez 2021; Beckert 2011; DiMaggio and Powell 1991; Fligstein 2001), but not much has been said thus far about the role of price predictions. While Latour said that science is politics by other means, I would say that electricity price predictions are the means of climate politics, and highlight their coordination and communication roles in politics. Price predictions have been studied by Caliskan (2007) in the Izmir cotton market, where he discovered that three types of prices are set during one day of trading cotton. Each type plays the role of "a prosthetic device deployed to further various trading objectives" (242), to end a trading day with a closing price. Caliskan's study (2007) may be the closest to the one I outline in this article. Each price set in the Izmir cotton market is not exactly a price prediction, but it is a proxy for the final price one can expect to obtain at the end of the trading day. While cotton market prices serve to further trading objectives, predictions of electricity prices further various political and economic agendas – at the EU and national levels.

Price predictions are thus a particular kind of expectation, though not necessarily referring solely to financial gains but also to a broader range of political and social objectives. As Beckert (2013) points out, "expectations, under conditions of uncertainty, are pretended representations of a future state of affairs" (226). This reduction makes it possible to make a decision as if the conditions for action were known. For example, in the case of ETS reforms, price predictions come across as exceptionally strong visions, ones that help to imagine potential costs and gains, losses and profits, and future market and political positions of a broad array of actors – businesses, industries, consumers and households as well as voters and the ruling governments. Price predictions can also stir up political conflicts; in the ETS case they functioned as fictional expectations and devices both for reducing and enhancing uncertainty, depending on whether a certain actor wanted to sustain or dismantle the proposed ETS system. For all these reasons, when price predictions are expressed about commodities that are perceived as being central to the performance of the economy – such as electricity – then the mobilization of various affected actors may also be very high.

This mobilization takes place within and across multiple fields and is shaped by their distinct structures. The EU can be examined as a complex organization of different market and political fields (Fligstein 2009), where coordination among them presents one of the main political challenges. Focus on fields, which can most generally be defined as "structures of relations of force" (Bourdieu 2005, 77), introduces the problem of power relations and power struggles to the analysis of price formation and their predictions. For example, a study of pricing looks in the fashion industry shows how the structure of the field of fashion, divided into two circuits of editorial modeling and commercial modeling, shapes the formation of prices for modeling jobs (Mears 2011). Development of these two circuits can be studied as a historical process of the formation of the fashion market as a quasi-artistic field with the economic logic reversed (Mears 2011). Price formation may also be influenced by legal rules as in the example of an oil spill caused by ExxonMobil in the Mexican Gulf, a case analyzed by Marion Fourcade (2011). The ETS reforms and other instruments of EU climate policies use legal rules to change the pricing principles of emission allowances, fuels, and thus also electricity.

As some researchers note, prices play a crucial role in making heterogeneous objects and services commensurable (Fourcade 2004; Aspers and Beckert 2008), thus indirectly coordinating economic exchange and action (Beckert 2011, 759). Prices are thus both formed in social relations and also communicate relations among actors, things, ideas and processes. Some relations, as Zelizer (1981) discovers in the case of insurance for children's life, cannot be priced, as they are regarded as being emotionally priceless and economically worthless (1036). Therefore, a tension may emerge between the socially perceived value of goods and their prices, the translation between which cannot always be achieved and successfully stabilized. Negotiations over the right price for a given value become even more evident when a given object becomes set within distinct principles of valuation (Boltanski and Thévenoth 2006; Stark 2009), or different orders of worth – the concept that fuses the dichotomy between value and values and recognizes "that all economies have a moral component" (Stark 2009, 19).

This is the case for electricity prices, which I examine in this article. Electricity – as a modern infrastructural *spiritus movens* of industrial production, households' daily functioning, state power, and almost every aspect of modern life – lies dormant beneath various things and processes that we explicitly value, such as light, movement, warmth, communication, speed, connection, sound. Sometimes the value of electricity – its worth – becomes apparent when its supply fails, which reminds us of its infrastructural position as we tend to notice infrastructures only when they break down (cf. Star and Bowker 1999). The explicit, policy-driven valuation of electricity in economic and climate/environmental terms is fairly recent and not necessarily intuitive or historically grounded. Debates on future electricity prices problematize this link – positively and negatively – making it possible to relate material futures of various European actors to the European moral projects of climate and energy security.

In this article, I examine one moment of the ETS, its 2008 reform, to examine how electricity prices became technically embedded in the EU's Emission Allowances market. We could argue after Hayek (1945) that in the time of negotiating market reforms, price predictions contain all the necessary information. However, a sociologist would add that this information needs to be interpreted and narrated by actors. Numbers do not speak for themselves, because actors' different embeddedness in market and political fields gives them different perspectives for reading the numbers. The field, with its sociopolitical structure and a cultural context, changes actors' perspectives and their interpretations. Actors' narratives establish links between climate policies and electricity prices to bring about new visions of the future. The political economy of electricity price predictions, I argue, lies at the heart of Europe's future-making, which is contingent on the reconciliation of two distinct regimes of valuation – economic and climate/environmental – differently

perceived by actors positioned within various economic and political fields.

Unpacking ETS: A market-based climate policy instrument for politicizing electricity prices

ETS was established by a 2003 Directive and started to operate in 2005. It is a market for trading allowances for CO_2 emissions and a policy tool for cutting these emissions. Initially, it covered several industry sectors, like steel, cement, paper, glass and electricity production. With time it reformed to include aviation, transportation and housing, though this is still ongoing. ETS is of double nature: it is a market and a policy instrument that commoditizes pollution – a mere externality of industrial production processes in the past (Engels 2006). As a market, ETS is constituted by the relation between supply and demand for European Union Allowances (EUA), and all social processes that stand behind the construction of each of them. One EUA is the equivalent of one ton of carbon dioxide. As a policy instrument, ETS is designed to cut carbon dioxide emissions. The construction of the EUA supply is where the roles of ETS as a market and as a policy instrument meet – making the construction of the rules according to which EUA is supplied to ETS participants the most controversial issue of the consequent phases of ETS reforms.

The supply of EUAs in the ETS is organized according to allocation procedures. Depending on whether allocation of EUAs is free of charge or not, companies from different sectors incur different costs for emitting carbon dioxide and the competition over EUAs shapes up differently. The incurred costs will be accounted for in companies' books (Engels 2009) and should be one of the factors to influence companies' decisions: whether to invest in new technologies to reduce greenhouse gas (GHG) emissions, divest in fossil fuels, or carry on with business as usual and keep buying EUAs to cover their own emissions. Methods of EUA allocation indirectly influence the position of particular companies on markets for goods that they produce – electricity, steel, cement, etc. If EUAs are to be purchased on a common ETS market, a heavy polluter, by bearing high costs of emissions, may lose competitive advantage against a company that pollutes less in the same sector. If prices of EUAs are high, in principle, companies should invest in low carbon technologies. However, by the time all investments bear fruit, the ECB predicts greenflation, that is, an increase in prices of different products due to the high costs of investment into greening various parts of the economy – in particular the electricity sector. Greenflation, even if the term suggests new, green reasons for the increase in prices, in principle means higher electricity prices and higher inflation in Europe.

For all the reasons outlined above, the consequent ETS reforms (2008, 2013/14 and 2018) engaged actors in complex processes of negotiating the construction of the supply side of ETS and the EUAs' allocation algorithms as well as the allocation of revenues from EUA trade. This mobilization, I argue, was organized with electricity price predictions as devices for negotiating the impacts of ETS on the economic and political situations of the European member states and industry sectors. And though ETS does not cover all economic sectors in Europe, its impact on electricity prices linked it to non-ETS sectors as well, including households. Predictions of electricity prices became central to today's debates on green transition and climate policies in Europe, stirring up a lot of emotions and blaming discourses.

While the EU administration persistently welcomed high prices for EUAs, and high electricity prices as the consequence of the former, national governments and some industry sectors consistently fought against it. It is thus at the intersection of national governments and EU-level administration, as well as at the intersection of various sectors of European economy, that electricity prices become embedded in different regimes of valuation: environmental and economic. This in turn makes it difficult to stabilize the discourse of blame and responsibility when electricity prices go up, as they are currently doing, and even harder when new moral concerns and orders of valuation enter debates on how electricity should be valued socially, economically and politically. The political economy of EUA valuation is thus embedded in various market and policy fields and takes place across them, facing the challenge of negotiating variously embedded interests and field-related perspectives.

In January 2008, the European Commission proposed amendments to the 2003 ETS Directive which introduced full auctions of EUAs for the power sector companies and partially free allocation of EUAs to industries based on performance benchmarks for the trading period 2013–2020. At that time, the European Commission assumed that the price of an EUA would be around 40 euros. The Impact Assessment study prepared by the European Commission, as an expert document accompanying the proposal of the new ETS Directive, predicted that the new ETS scheme would cause an average increase in the EU's electricity prices of around 22 percent. This figure served as a communication device that various economic and political actors in the European member states could refer to when evaluating consequences of the ETS re-

form for their economies. However, the 22 percent proved to be a problematic figure because it averaged out the potentially diverse impacts of the reform, thus causing most contention, for example, in Poland, the EU member state with around 90 percent of electricity produced from coal. In Poland, industry and power sector representatives interpreted the calculation of 22 percent as a "statistical hoax" that concealed the actual complexity and diversity of energy mixes across European countries (Interview with an industry expert, Warsaw, January 2009). Polish businesses and the government questioned the Commission's legitimacy to speak on behalf of Poland.

A Polish energy markets expert, Jankowski (2008), argued that full auctions for the power sector would increase electricity prices most harshly in Poland, the Czech Republic, Denmark and Bulgaria and to a much lesser extent in France, Austria, Germany and the UK. As to indirect costs, Poland would be most burdened. Many countries would avoid high costs by having significant proportions of nuclear, hydro or wind energy in their energy mixes. Jankowski argued that nuclear power plants and hydroelectric power stations would enjoy the greatest share of benefits on ETS: "The French EDF [Électricité de France] will be in an especially favorable position in the new ETS" (Jankowski 2008, 18). The Polish reports created a new device – predictions of electricity prices in Poland which could be communicated to the European Commission and compared with its own predictions. According to the Polish power sector and industry lobbying group, these figures represented the actual ("real") relations between the Polish electricity market and the proposed design of ETS.

This device enabled further interpretations and framing of relations between various actors on the electricity market in Europe. In a short article, the main Polish expert in the ETS negotiations, Żmijewski (2008b), outlined the main challenges faced by Poland as a result of the new ETS. According to him, the existing economic inequalities between countries would be perpetuated if industries and power sector companies from all over the European Union would have to purchase emission allowances on a common market. Smaller companies with less capital, like the Polish power sector companies for example, would have to bid against bigger ones in the pan-European auctions. The bigger and richer companies, like E.ON, RWE or EDF, would be able to invest more capital to buy out greater volumes of emission allowances (EUAs) while they were relatively cheap and sell them when they were more expensive and more in demand.

The point about the unequal positions of power sector companies on ETS was important in the light of the then expected privatization of the Polish power sector companies. The method of allocating EUAs through auctions could serve as an instrument for fostering cheap privatization of Polish electricity producers. Once the cost of purchasing EUAs grows, Polish electricity producers may have problems financing new projects and thus may have to look for more capital. One way of raising capital is privatization. And the fear among the Polish power sector companies and the government, the owner of most of the power sector companies in Poland, was that the post-2012 ETS would lower their value on the market. The consequence of the introduction of the new ETS, according to Żmijewski (2008a), would be that rich power sector companies based in, or owned by, old EU member states like Germany or France could more easily buy out companies in Central and Eastern Europe.

After the Commission published its Impact Assessment with price predictions for EUAs and the predicted average increase in electricity prices in the EU, actors started to propose narratives about the expected future on various markets as well as policy innovations for organizing EUA supply in the ETS. First, the Polish Ministry of Environment proposed to allocate free emission allowances to the Polish power sector companies. This was meant as an opt-out option from full auctioning for the existing power plants. Interestingly, however, the solution was soon transformed by the German power sector companies into extending free allocation to coal-fired power plants built in Poland in the future. A Finnish MEP pointed out during an interview with me that the idea of extending the derogation to coal-fired power plants built in the future came from the German power sector companies. Germany's RWE and German MEPs were in favor of free allocation of EUAs to future power generation facilities as they expected that German companies would buy shares in the Polish electricity market. The ETS reform, and predictions of EUAs and electricity prices, helped German companies to see themselves as part of the Polish electricity markets – and made this vision quite specific, and namely with free EUAs.

When the Polish government started to ask for free allowances for power plants, the European environmental NGOs condemned the idea. They perceived the strategy of the Polish government as being manipulated by the power producers, not only Polish companies but also the biggest power companies like RWE, Vattenfall or E.ON. In the NGOs' view, by asking for free allowances, the Polish government was depriving itself of revenues from full auctions that could fund the national budget. Instead, the Polish government protected companies from having to spend more money on climate protection. This way, NGOs argued, the Polish government decided to subsidize companies operating in Poland and the biggest European

utility companies interested in gaining a share in the Polish electricity market. Finally, the negotiated reform of ETS allowed Polish electricity producers to get EUAs for free. At the same time, revenues from EUA trade filled up Poland's state budget and were redistributed at the national level through various green energy support schemes. However, since 2022, electricity producers have to buy EUAs on the market, making the last ten years of the companies' virtually non-existent coal divestment strategies painfully visible on the citizens' electricity bills.

Conclusions

The focus on predictions of electricity prices as embedded coordination devices for negotiating futures opens up opportunities for building a broader research agenda of the political economy of the European Union's climate and energy policies. Predictions of electricity prices conceived of as coordination devices become an analytical lens through which various interests, values, fears, urgencies and concerns are expressed, and thus can be examined sociologically. Looking at the European project of climate policies through this lens allows us to access the complexity of actors' perspectives and make sense of them from the embedded perspective. Realizing that actors are embedded in various market and political fields makes it possible to understand the difficulties of working out common European perspectives.

Through the examination of the ETS negotiation, I argue, the price of emission allowances and electricity prices became systemically interlinked, as the cost of emissions became a permanent component of electricity production. The embeddedness, which I argue for, has several dimensions. ETS placed electricity within two distinct and not easily reconciled regimes of valuation – economic and climate/environmental. Additionally, as the supply of EUAs is administratively managed by the European Commission and profits from ETS trade are managed by national governments, electricity prices became embedded in the EU's complex multilevel governance and its politics. Moreover, as a policy instrument of the European green transition, ETS embedded electricity prices into the future visions of what the EU should be like. This embeddedness, I argue, resulted in the politicization of electricity price debates and opened up new questions about what the value of electricity is about – the performance of European industries, the comfort of European households and consumers, or the well-being of planet Earth exposed to climatic changes.

Today, when a violent war is taking place right across the border of several EU member states, gaining a common perspective may prove to be more difficult than in 2008. While in 2008 the issue at stake was the design of the ETS supply side, in 2022 the stakes are much higher, hinging upon the politically most salient values, such as security, freedom and peace. The relation between these different values and high prices of electricity, among other energy sources, has remained prone to being turned into a controversy about who is to blame. A return to coal and nuclear, the EU exit tendencies, utility monopolies, the controversial normalization of European greenflation, and the Russian war in Ukraine cannot help to stabilize the value of electricity across the EU member states and will lead to more political struggles. Electricity price prediction will remain both a weapon and a stake in those struggles. Electricity prices in contemporary Europe, I argue, lie at the heart of the politics of its future-making, which is burdened with conflictual logics of valuing this essential good – economic, climate/environmental, and today also security, freedom, and peace. The question thus remains whether moral projects proposed by the European Commission are not inherently self-defying by the virtue of having to interest and enroll so many different actors. With this thought, the paper contributes to a political reflection on the possibility of creating moral projects in the European Union where both the political and economic fields are multiple – diverse and multilevel – and actors within these fields have diverse interests and perspectives.

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