Chapter 23

The EU's Energy Policy from the Perspective of a Central-Eastern European Country: Hungary

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Abstract

Despite the fact that two of the fundamental treaties of the European Union, namely the ECSC and the EURATOM, concerned the energy sector, the following decades were characterised by a great deal of reluctance towards strengthening and deepening the community's role in the sector. This was partially due to the fact that electricity is a particular product: it is challenging to store, its price depends on how it is produced, and most importantly, for those who are dependent on it, it cannot be substituted. Because of these features, the electricity sector of the European states were dominated by vertically integrated state-owned monopolies where the same companies were responsible for generating and distributing electricity. In spite of the difficulties, the liberalisation of the energy sector began in 1996, and four energy packages were adopted, each of which has tried to address the shortcomings of the previous one. In this article, we will focus on the liberalisation of the European electricity sector by first discussing the rough road that led up to the first package; then, we will attempt to give an overview of each of the packages, followed by an elaboration on how these were implemented in the Hungarian legislation. As the extent of the success of the electricity sector liberalisation is a debated topic, we will also touch upon the issue of whether the market opening reached its goals or not, what are the potential barriers and what we can expect in the future.

Keywords: EU energy law, electricity, market opening, Hungarian electricity regulation, liberalisation

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1. Introduction

Energy and electricity play an essential role in obtaining our current standard of living, and they are crucial to any further development. Even though the Human Development Index[1] has flaws and is not a perfect indicator for assessing a country's development, when we analyse its health dimension by also taking into account the electricity consumption per capita, we can see a clear connection between electricity consumption and life expectancy.[2] Besides our longer life expectancy, electricity also plays a crucial role in education as access to electricity at schools and homes significantly improves education and combats illiteracy.[3] Moreover, a cheap and stable energy flow is essential for economic prosperity, as it was realised by the founding fathers of the Community after the end of the Second World War. Subsequently, two of the fundamental spheres of integration, the European Coal and Steel Community (ECSC) and the European Atomic Energy Community (Euratom), concerned the energy sector.

We can safely say that the European Union was founded on the pillars of energy. Despite this, the following decades were characterised by a general reluctance to strengthen and deepen the community's role in the sector. This unwillingness had multiple reasons, of which one is the sheer nature of electricity. Electricity was and still is a particular product: it is challenging to store; its price depends on how it is produced, and most importantly, for those who are dependent on it, it cannot be substituted. Because of these features, the electricity sector of the European states were dominated by vertically integrated state-owned monopolies where the same companies were responsible for generating and distributing electricity.[4] In the sector, the states had a very dominant monopolistic position; they did not have significant interconnections with each other, and the idea of market opening was not beckoning for them. Due to these issues, it was clear that the mere abolishment of trade restrictions would not be enough, and there was a need for ideological and infrastructural reforms.[5] Even though there were many challenges, the liberalisation of the energy sector (gas and electricity) began in 1996, and four energy packages were adopted. In this paper, due to the length constraints, we will limit ourselves to exclusively discussing the liberalisation of the electricity sector, however, it worth to be noted

1 Human Development Index (HDI) of the United Nations is a simplified indicator of human development that encapsulates three key areas, namely life expectancy, education, and standard of living.
2 Zohuri, 2016, p. 19.
3 Kelly et al., 2023, p. 27.
4 Rotaru, 2013, p. 101.
5 Talus, 2013, p. 99.

that the almost simultaneously adopted directives[6] in the gas sector entailed a very similar liberalisation process.

We will analyse the liberalisation of the European electricity sector by first discussing the rough road that led up to the first package; then, we will attempt to give an overview of each of the packages, followed by an elaboration on how these were implemented in the Hungarian legislation. As the extent of the success of the electricity sector liberalisation is a debated topic, we will also touch upon the issue of whether the market opening reached its goals or not, what are the potential barriers and what we can expect in the future. This article is intended to provide the reader with a greater understanding of the electricity market liberalisation while also highlighting some of the specific challenges Hungary faced during the transformation of its electricity sector.

2. The European electricity sector before the first liberalisation package

As it was mentioned, the energy sector was one of the most fundamental uniting aspects when establishing the community. In 1952, the Paris Treaty was adopted, establishing the ECSC that created a common market for coal, which was by far the most crucial energy source at that time by constituting 80% of the energy mix. Just a few years later, in 1957, the Rome Treaty was adopted, establishing the Euratom. Euratom aimed to facilitate and spread the peaceful use of nuclear energy as, back then, it was perceived to be the energy of the future. Even though these two initial steps concerned the energy sector, no common energy policy and rules on general public services were achieved as the member states kept their sovereignty in the area. This reluctance carried on to the following decades, and the member states stayed with their own approaches in the field.

The first small steps towards closer cooperation came after the 1973 oil crisis when the Commission set up a common energy strategy that focused on combatting the insecure supply by establishing an emergency system.[7] Despite its existence, in reality, the emergency system was not used as the member states rather relied on the emergency oil-sharing system of the International Energy Agency.[8]

6 Directives of the gas sector: Directive 98/30/EC of the European Parliament and of the Council of 22 June 1998 concerning common rules for the internal market in natural gas; Directive 2003/55/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in natural gas and repealing Directive 98/30/EC; Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC.

7 Lehotay, 2020, p. 264.

8 Penttinen, 2021, p. 81.

The still-existent unwillingness of the member states to strengthen the community's role in the energy sector was further proven by the 1986 Single European Act. At its creation, member states explicitly stated that the community should not take any roles concerning energy policy.[9] Furthermore, due to the unclear provision on the environment, a declaration was attached to the document that stated, that 'The Conference confirms that the Community's activities in the sphere of the environment may not interfere with national policies regarding the exploitation of energy resources'.[10]

The next stage we would like to highlight from the path towards the first directive is the 1988 Commission Working Document on the Internal Energy Market. In it, the Commission rightly noted that in the preceding two decades, there has been minimal progress towards a common market in energy. It supported the idea that a more integrated energy market is vital for the future success of the community as it can reduce the cost of energy and, at the same time, it could benefit the environment.[11] Despite the ambitious reasoning of the Working Document, it did not achieve a significant change as Member States were not willing to give up their monopolies.[12]

From the beginning of the early 90's, certain European countries such as the United Kingdom, Sweden, and Norway opted for liberalised market structures that served as examples for the whole community.[13] In this changing climate, a set of directives were adopted, which alone did not entail a giant leap toward the open market; still, in essence, they provided the basis for future liberalisation. These directives were the 90/547/EEC directive on the transit of electricity through transmission grids and the 90/377/EEC directive concerning the transparency of gas and electricity prices. The former one facilitated the transit of electricity by involving the Commission in the transit license granting procedure in order to ensure that the decisions on transits were non-discriminatory. According to the directive on the transparency of prices, certain industrial end users had to communicate information on the purchase price of electricity and gas to the Statistical Office of the European Communities. The disclosure of the industrial end prices was essential from the perspective of an open market as the transparency of the tariffs enhances the change of supplier.[14]

Before we get to the discussion of the first liberalisation package, it is worth highlighting that at the time of adopting the first package, energy issues lacked their specific legal basis. In the 1992 Maastricht Treaty, there were attempts to include a particular chapter on energy; nevertheless, in the end, it was unsuccessful.[15] Subsequently, the treaty only briefly addressed the issue of energy under the

9 Hancher, 1990, p. 219.
10 Single European Act: declaration on article 130r of the EEC Treaty.
11 Working Paper: The Internal Energy Market COM(88) 238 final of 2 May 1988.
12 Vasconcelos, 2015, p. 19.
13 Pollitt, 2018, p. 2.
14 Kondorosi and Alföldy-Boruss, 2022, pp. 49–50.
15 Thaler, 2016, pp. 574–575.

umbrella of the trans-European networks and the environment.[16] This lack of established legal basis provided the community with minimal options to regulate in the sector, meaning they had to rely on other bases such as competition rules.[17] The issue of the legal basis was resolved with the Lisbon Treaty, but the effectiveness of the liberalisation packages up until that point was hindered by the lack of a dedicated legal basis.

In the years before the adoption of the first package, the Commission made several proposals regarding the liberalisation and third-party access to electricity grids; however, these were met with various reactions, most of which were sceptical, especially from the side of Germany and France. Nevertheless, in 1995, the number of countries in favour of changing the status quo was growing, and finally, Germany and France came to a compromise; subsequently, the first package was adopted.[18] The reasons behind this success were that the concept of the monopolistic market structure was questioned, the increasing interest in the environment required massive investments, certain customers felt that the prices were irrationally high, and finally, the corruption scandals in the sector promoted dissatisfaction.[19]

3. The first 1996 energy package

Following the discussion of the attempts at the energy market opening, we can now elaborate on the first energy package and its provisions on electricity. Lacking its specific legal basis, the 96/92/EC directive concerning the common rules for the electricity market was based on Article 100a of the Treaty Establishing the European Community. This article, within the common rules of competition, taxation, and approximation, provided an opportunity to implement measures in order to establish the internal market. This first directive concerned the whole electricity chain and served to create a competitive internal market while ensuring the security of supply and addressing environmental concerns. In the following, we will highlight some of the novel features of the directive.

Regarding the establishment of new generating capacity, the states could choose between an authorisation and/or a tendering procedure, granted that these are objective, transparent, and non-discriminatory. Notwithstanding the two options, in practice, the states have all opted for the authorisation procedure.[20]

16 Maastricht Treaty: Art. 129b, Art. 130s.
17 Csákó, 2006, p. 11.
18 Eising, 2002, pp. 93–95.
19 Penttinen, 2021, p. 82.
20 Fazekas and Németh, 2022, p. 92.

The directive requires the designation of both transmission (TSO) and distribution (DSO) system operators, and it sets the basic rules for their responsibilities; most importantly, it requires them not to be discriminatory when providing access to the grids.

The next thing worth mentioning is the issue of third-party access (TPA), which enables competitive suppliers to enter the national energy markets. With regards to third-party access, the directive provides three possibilities: negotiated third-party access (in this case, generators and retailers negotiate with the TSO/DSO), regulated third-party access (access is granted based on a tariff), and the single-buyer option (in this case one legal person is designated to purchase on the territory of the system operator).

One of the most essential features of the directive is its rules on unbundling. According to this, vertically integrated companies had to keep separate accounts for their generation transmission and distribution activities to avoid discrimination or distortion of the competition.[21]

For opening the markets, the directive set up a staggered system where firstly, in 1999, the markets opened for large industrial consumers racking up consumption of more than 40 GWh per year, then a year later, the threshold was reduced to 20 GWh per year and in 2003 it had to be lowered to the annual consumption of 9 GWh.[22]

If we evaluate the first electricity directive, we can safely say that it resembled a framework more than a strict regime. Member states were provided with a great deal of discretion in opening their markets, and the states who were not so keen on liberalisation could more or less keep their monopolies intact.[23] On the other hand, a significant number of member states went beyond their limited obligations and opened their markets to a greater extent.[24]

3.1. The implementation of the first energy package in Hungary

Before we dive into the discussion of the structure of the Hungarian electricity sector prior to the liberalisation, it is important to briefly address the energy mix of Hungary. In the last decades Hungary has been increasingly reliant on imported energy, however, in terms of electricity our generation is not very far off from our consumption by being able to provide 80% of what we consume.[25] Our electricity generation is dominated by the Paks Nuclear Power Plant, which has been consistently providing more than 40% of our electricity consumption for the past decades. The second most important way Hungary produces electricity is with natural gas taking up around 25% of the generation. This is followed by solar which has demonstrated a

21 96/92/EC, Art. 13.
22 96/92/EC, Art. 19.
23 Hancher, 1998, pp. 51–52.
24 Heddenhausen, 2007, p. 6.
25 Hungarian Central Statistical Office, 6.1.1.8. Electricity balance [gigawatt hours].

huge increase in the past few years and currently provides for 13% of the generation. Contrary to this, coal and coal products have been declining in significance but still provide for 8% of the generation.[26] These increasing and declining trends visible in Hungarian electricity generation are in line with the goals of the National Energy Strategy of Hungary for the period between 2012–2030,[27] which seeks to increase the share of carbon-neutral energy generation. However, the goal did not materialise for every renewable energy source as wind has a shrinking share in electricity generation. Nevertheless this issue is also going to be addressed as in 2023 Hungary submitted its updated Draft National Energy and Climate Plans to the Commission in which we seek to triple our wind power capacity by 2030.

After this introduction to the Hungarian energy mix, we can discuss the evolution of the electricity sector structure. In Hungary, the communist takeover after the Second World War did not leave the electricity sector out of the scope of the nationalisation. The Act XX of 1946[28] was adopted which took the power-generating capacity and the grids into state ownership. The Soviet-type centralised structure, where one vertically integrated electricity company was responsible for the whole electricity chain, was established and carried on until the period of the regime change.[29] Following the change of regime, a few significant steps occurred from the perspective of the coming market opening. Firstly, the Hungarian Electricity Works Trust was transformed into a limited liability company, MVM Hungarian Electricity Works; although still connected to MVM, its power plants and distributors gained their own legal personality, which was crucial to denationalisation. Following the unsuccessful attempt at privatisation in 1993, the legislator realised a proper legal basis had to be adopted to succeed with privatisations, so subsequently, the 1994 Act on Electricity was adopted.[30] The act provided a massive change in the legislation of the Hungarian electricity sector; however, it did not aim to establish an open competitive market.[31] At this point, the Hungarian electricity market operated on a single buyer process where MVM purchased the electricity and then sold it to the suppliers.

Following the Act, the privatisation process commenced, although not without any difficulties. Many decisions that back then seemed reasonable later gave rise to a multitude of challenges. For example, to make the power plants more appealing to investors during the privatisation procedure, MVM, who purchased electricity from

26 Hungarian Central Statistical Office, 6.1.1.9. Gross electricity production [gigawatt hours].
27 Nemzeti Energiastratégia 2030 (*National energy strategy of Hungary 2030*).
28 1946. évi XX. törvénycikk egyes villamosművek energiatelepeinek és távvezetékeinek állami tulajdonba vételéről és a villamos energiagazdálkodással kapcsolatos egyéb rendelkezésekről (A*ct XX of 1946 on the State ownership of certain power plants and transmission lines of electric power stations and other provisions relating to the electricity management*).
29 Árva et al., 2016, p. 201.
30 Rátky and Tóth, 2022.
31 Kerekes, Szörényi and Diallo, 2019, p. 6.

them, entered into long-term energy purchase agreements[32] which later became an obstacle in front of the competitive market.

Soon after 1994 Act on Electricity was adopted, considerable changes occurred in the Community with the adoption of the first energy package in 1996. Due to the country's aspiration to become a member of the EU, the directive had its fair share of influence on the Hungarian legislation. In line with the provisions of the 1996 directive, Act CX of 2001 on electricity was adopted. Interestingly, the legislator following the Portuguese example[33] opted for a dual market structure where there was a difference between those who purchased electricity from public utility providers and those eligible consumers who could purchase electricity from the power plants or electricity trading licensees. Regarding the status of the eligible consumers, government decree No. 181/2002 stated that firstly, consumers over the consumption of 6.5 GWh became eligible – this, in practical terms, meant the largest industrial users –; then, in 2004, the scope was extended to all non-domestic consumers. This dual market structure entailed that entering the competitive market was only an option, and this possibility was not forced on any consumers.

4. The second 2003 energy package

Also, because the adoption of the first directive included a lot of compromises, there was a specific requirement that the Commission evaluates the experiences on the functioning of the internal market to determine the possible need for further liberalisation. In 2005, the Commission indeed launched an inquiry into the functioning of the electricity market, and multiple reports were produced over the coming years. According to the reports[34] the Commission found that there were great discrepancies between the member states – especially concerning network access tariffs[35] – which resulted in an uneven playing field in the internal electricity market.[36] Moreover, consumers were not entirely satisfied with the prices even though the Commission, in its communication, stated that in the first three years of the directive, prices on average have fallen by 6% despite the clear infrastructural obstacles in front of market opening.[37]

32 Vince, 2007, p. 304.
33 Brzózka, 2012, p. 37.
34 COM (1998) 167 final, 16.3.1998, COM(1999) 164 final.
35 Dehousse, Andoura and Dehin, 2007, p. 34.
36 Eikeland, 2011, p. 20.
37 Communication from the Commission to the Council and the European Parliament – Recent progress with building the internal electricity market COM/2000/0297 final.

To deepen the internal electricity market and to combat the shortcomings mentioned above, the second acceleration energy package was adopted in 2003 that contained multiple legislations on the electricity sector.

Most importantly, the new directive concerning common rules for the internal electricity market was adopted, which introduced quite a few changes compared to the 1996 directive.[38]

Firstly, the rules for establishing new generating capacity changed significantly. From this point onward, the authorisation procedure became the default one, and the directive also provided member states with ideas on the authorisation criteria. According to the new directive, tendering procedure could only be used on three occasions: a) if the capacity reached through the authorisation procedure is not sufficient to provide the security of supply, b) in the interest of environmental protection if it cannot be granted through the authorisation, and c) for promoting less developed new technologies also only if it cannot be done through authorisation.

The previously highly debated issue of third-party access was simplified in the new legislation, and regulated access was pushed to the forefront.[39] The directive provides an opportunity to refuse access, but this can only be done in cases when the transmission or distribution systems lack capacity.

Unbundling was still a central issue in the new directive, so it was taken a step further. Legal unbundling was introduced, which entailed that transmission or distribution system operators, if they were part of a vertically integrated company, had to be independent in their legal form, their organisation, and their decision-making from those parts of the company, that does not fall under the scope of transmission or distribution activities. To achieve this desired independence, the directive set some minimum criteria. It is worth mentioning that this level of unbundling was not mandatory in the case of distribution system operators that served less than 100,000 customers.

The next novelty the second directive provided for was the fact that it contained much more detailed rules on the regulatory authorities. Member states had to set up national regulatory authorities – independent from the electricity industry – which were responsible for the following: non-discrimination, effective competition, market functioning, and monitoring.

Opening up the markets also continued. This meant that until 1 July 2004, the markets were opened for the eligible customers defined in the first directive, from 1 July 2004 all non-household customers became eligible, and from 1 July 2007 the market had to be opened for domestic customers, too.

38 Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in electricity and repealing Directive 96/92/EC.

39 Johnston and Block, 2012, p. 21.

Quickly evaluating the second electricity directive, we can conclude that it was a more detailed legislation; moreover, the provisions were stringent; however, they still allowed a great deal of discretion.[40]

As it was mentioned in the new package, the directive was not the only piece of legislation; in addition, the regulation on the prerequisites for gaining access to the network for cross-border exchanges in electricity was adopted.[41] The regulation aimed at creating fair rules for cross-border trading in electricity to foster greater competition in the market.

4.1. The implementation of the second energy package in Hungary

In Hungary, it soon became evident that the dual market model the country opted for would not be sustainable in the long run. One of the key deficiencies of the system was that the competitive market, in reality, only appeared as an alternative, so the eligible customers were switching between the competitive market and the public utility provider, depending on the prices.[42]

After the introduction of the second electricity directive, the process began in Hungary to adopt a legislation that corresponds to the directive and introduces a fully open market. In 2007, the new Act on Electricity (VET)[43] was adopted, which, among other things, aimed at creating an effectively functioning competitive electricity market while also supporting sustainable development, promoting the use of renewables, and ensuring the security of supply. As we can see, the goals of the VET correspond to the general notion of the energy triangle, according to which a balance has to be kept between the environment, the security of supply, and the financial side when formulating energy policies. In this new model, the distortion of the competition was only tolerated in two instances: either to combat the use of a dominant position or to protect vulnerable consumers.[44]

The change in the market structure terminated the previous public utility sphere; however, the Act introduced the function of the universal provider, which more or less filled the void left by the public utility provider, but only for a limited circle of customers, namely domestic and small voltage customers. These universal providers are special electricity traders that have to supply a certain quality of electricity for an equitable price anywhere in the country to those who are eligible.[45] The purpose of the universal supply is to protect small consumers from abuses and to grant them the security of supply.[46] The significant difference from the discontinued public

40 Eberlein, 2008, pp. 81–82.
41 Regulation (EC) No 1228/2003 of the European Parliament and of the Council of 26 June 2003 on conditions for access to the network for cross-border exchanges in electricity.
42 Fazekas and Németh, 2022, p. 98.
43 2007. LXXXVI. Act on Electricity.
44 Szilágyi, 2010, p. 153.
45 2007. LXXXVI. Act. Art. 3(7).
46 Nagy, 2022, p. 300.

utility providers was that the universal suppliers were able to purchase electricity from every source, whereas public utility providers could only purchase electricity from MVM.[47] Moreover, the minister no longer set prices, and supervised pricing rules became the norm.

The next issue we wish to highlight which is closely connected to the new universal supply structure is the introduction of the supplier of last resort. According to the Act, the supplier of last resort safeguards those eligible for universal supply if their supplier puts their security of supply in danger. The authority first selects the supplier of last resort from those traders and universal suppliers that voluntarily apply. If none of them applies voluntarily, then the authority selects one at its own discretion.[48]

Finally, the last thing worth emphasising is the fact that the rules on legal unbundling were implemented in the Act, i.e., in a vertically integrated company, the transmission and distribution system operator has to be independent from other parts of the company legally, structurally, and in terms of decision-making that are not connected to transmission or distribution activities.[49]

5. The third energy package in 2009

Following the adoption of the second package in 2005, the Commission again launched an inquiry into the sector, also pursued by the fact that consumers still complained about high prices.[50] The results were quite devastating. The inquiry highlighted that market dominance remained, the unbundling did not reach the desired success, the foreign market entrance was insufficient, and retail competition was not high enough. In response to the deficiencies of the market, the Commission underlined four key areas where further effort has to be made to reach a well-functioning internal market. According to the Commission, additional work is needed to achieve a sufficient unbundling, to address the regulatory gaps, to deal with the lack of liquidity that hindered the market entry, and to enhance general transparency.[51] To address the aforementioned deficiencies, the third energy package was adopted in 2009, which was supposed to further liberalise the market while also promoting cross-border connections.[52] Moreover, we can see a shift in the mindset of the third package as this time the EU's approach was not solely aimed at liberalisation

47 Fazekas and Németh, 2022, p. 101.
48 VET article 51.
49 VET article 100.
50 Penttinen, 2021, p. 86.
51 Communication from the Commission Inquiry pursuant to Article 17 of Regulation (EC) No 1/2003 into the European gas and electricity sectors (Final Report).
52 Delgado, 2008, p. 5.

but at broader aspects as well, such as environmental protection and emergency situations.[53]

The electricity provisions of the package consisted of multiple legislations; most importantly, the new directive concerning common rules for the internal electricity market was adopted. Besides this, the new regulation on the conditions for access to the network for cross-border exchanges in electricity was introduced, and thirdly, the directive that established the Agency for the Cooperation of Energy Regulators (ACER) was adopted.

So firstly, with regard to the changes introduced by the new directive,[54] we would like to highlight a few things. The most debated and important aspect of the directive concerned the rules on the unbundling of the transmission networks. Initially, the Commission proposed full ownership unbundling as the solution, which meant that the owner of the transmission system operator was not allowed to be a part of a vertically integrated company. As this was quite a strict requirement, member states were not really keen on accepting it, so the Commission had to make an alternative proposal. This alternate option was the independent system operator (ISO), according to which the network ownership remains in the vertically integrated company; however, the operation of the network has to be carried out by an independent system operator, who is not connected to the owner of the grid. Despite of this less strict option, some of the member states were still not satisfied, so a third option was established, too, namely the independent transmission operator (ITO). This entailed the lowest level of unbundling where the ownership of the transmission network is retained by the vertically integrated company, granted that the system operation is carried out in compliance with strict unbundling rules.[55] These strict rules, among other things, entailed a special position for the national regulatory authority as it required its approval for the contracts between the independent transmission operator and the vertically integrated company.[56] In essence, the difference between the ISO and the ITO system is that in the latter the vertically integrated company creates a supervisory board that is responsible for appointing the management and controlling the investments of the transmission system operator; thus, the company has more control over the system operator.[57]

Another important area of the directive was its provisions on customer protection. In this regard, it stated that the customers have to be allowed to change suppliers within a three-week period and that they are entitled to be informed of their relevant consumption data.[58] Moreover, Annex I of the directive discusses the issue of smart meters, which play a key role in promoting the active participation

53 Johnston and Block, 2012, p. 25.
54 Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC.
55 Meletiou, Cambini and Masera, 2018, p. 15–16.
56 Sütő, 2014, p. 505.
57 Dreyer, Erixon and Winkler, 2010, p. 17.
58 2009/72/EC Art 3(5).

of consumers in the electricity market. The member states had to assess the use of smart meters, and in case it had a positive outcome, they had to ensure that by 2020, 80% of the consumers are equipped with them.[59] The last issue that we would like to discuss concerning the directive is its rules on national regulatory authorities. Compared to the previous provisions, the directive now established more stringent requirements; for example, from that time on, only one national regulatory authority could be established; in addition, the regulatory authority was required to be legally, functionally, and in terms of personnel, independent from any public or private entity.[60] Additionally, it is worth highlighting that the directive strictly required the cooperation and compliance of national regulatory authorities with the Agency for the Cooperation of Energy Regulators, as during the negotiations of the package, it became clear that stronger cooperation is needed between the member states' regulators. As we have already mentioned, in the package there were other pieces of legislation, one of them established the Agency for the Cooperation of Energy Regulators (ACER).[61] ACER is an independent organ that seeks to warrant the functioning of the internal electricity market by enhancing cooperation between national regulatory authorities, ensuring that the EU legislations are implemented correctly, and making decisions on the terms and conditions of cross-border access. ACER has a very special position as it can solve transboundary conflicts by facilitating communication between the national regulatory agencies while also taking binding decisions without making the NRAs' role insignificant.[62]

Also in the package, a new regulation on conditions for access to the network for cross-border exchanges in electricity was adopted, which aimed to further enhance the non-discriminatory network access.[63]

5.1. The implementation of the Third Energy Package in Hungary

When implementing the third package in Hungary, no new act on electricity was adopted; however, the existing 2007 VET had to be amended in a number of respects.

59 2009/72/EC Annex I.(2).
60 2009/72/EC Art 35.
61 Regulation (EC) No 713/2009 of the European Parliament and of the Council of 13 July 2009 establishing an Agency for the Cooperation of Energy Regulators.
62 Haverbeke, Naesens and Vandorpe, 2010, pp. 405–406.
63 Regulation (EC) No. 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No. 1228/2003.

The most critical issue in the amended Act concerned the unbundling of the transmission system. In Hungary, the Act adopted the least stringent independent transmission operator (ITO) structure. Since 2012, this role has been fulfilled by MAVIR Hungarian Independent Transmission Operator Company, which is within the vertically integrated MVM group.

Moreover, the Act implemented detailed provisions on the regulatory authorities, and from then on, it regulated the relationship of the Hungarian Energy Authority with ACER.

Also, at the time of the adoption of the third package, there was another significant change in the Hungarian electricity sector; the Hungarian Power Exchange (HUPX), a subsidiary of MAVIR, began its operation. Looking back at its establishment, we can say that it had an important position in the electricity sector of Hungary[64] through its non-discriminatory trading approach and its information-providing nature that served the customers' interest by reducing prices.[65]

6. The fourth 2019 'Winter Energy Package'

At the EU level, the attention on the climate aspect of energy has been gradually increasing throughout the packages; however, the issue became especially contentious in the decade following the third energy package. In 2016, the Commission published its communication titled *Clean Energy for all Europeans* where it pursued three main goals, namely:

a) putting energy efficiency first,
b) achieving the EU's leadership in renewables, and
c) providing a fair deal for consumers.[66]

Subsequently, in 2019, the fourth "winter energy package" was adopted. The legislative package included multiple directives and regulations:

a) energy performance in buildings directive,
b) renewable energy directive,
c) energy efficiency directive,
d) governance of the energy union regulation,
e) electricity regulation,
f) electricity directive,

64 Fazekas and Németh, 2022, p. 105.
65 Csipkés, 2019, p. 138.
66 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank Clean Energy For All Europeans Com/2016/0860.

g) risk preparedness regulation, and
h) ACER regulation.

In its nature, this latest energy package is different from the previous three as this time the main focus was not the liberalisation[67] but on taking the leading position in switching to clean energy sources.[68]

Even though market opening was not the sole focus, we would like to highlight a few issues that are important from this perspective. The basic premise behind the new electricity directive was that the electricity market structure had to be modernised to align with the evolving energy landscape with increasing integration of decentralised renewable energy sources into the grid, posing previously unexperienced challenges.[69] To adjust the structure of the directive,[70] firstly a significant focus was placed on the more active role of consumers as, compared to the previous system, they were not provided with an adequate enough framework to actively participate in the electricity market. In this regard, one of the critical issues was the market integration of prosumers (consumers who not only consume energy but also produce it), as this can help reduce the costs for consumers while producing clean energy.

The second issue with regard to the more active participation of consumers was the introduction of demand response, which entails that final consumers try to change their consumption in connection to price changes. In this, the accurate and up-to-date pricing information – that the package seeks to reach – plays a fundamental part. Moreover, it has to be mentioned that demand response also helps to facilitate the use of volatile renewable energy.[71] To give more weight to the consumer demand response, the directive introduced aggregation which by connecting multiple consumers can help then reach better positions on the market.[72]

In terms of the consumers, the last aspect of the package that we would like to highlight is the issue of providing the consumers with an adequate level of information that can assist them in making more informed decisions, especially in areas such as provider change, which proved to be challenging in many cases due to the lack of information.[73]

With regard to the pricing of electricity the directive introduced the concept of market-based supply prices and stated that member states should primarily ensure the protection of energy-poor and vulnerable households by social policy rather than public interventions in the price setting. In the package price setting is viewed as

67 Anchustegui and Formosa, 2021, p. 94.
68 Szuchy, 2021, p. 151.
69 Szuchy, 2021, p. 157.
70 Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU.
71 Szuchy, 2020, p. 430.
72 Kondorosi and Alföldy-Boruss, 2022, p. 71.
73 Szuchy, 2021, p. 161.

a great obstacle in front of establishing market-based prices as these measures do not take into account the changes in the electricity market.[74] Subsequently, member states can only result to public intervention in the price setting for the supply of electricity for the protection of energy-poor and vulnerable household customers if specific strict provisions are fulfilled.[75] The directive does not prohibit the application of price setting in the case of universal supply, however, those benefiting from the price setting have to fit into the respective categories.[76]

Finally, the directive also had new provisions regarding national regulators, and transmission and distribution system operators. In general, their positions were strengthened, but no additional measures were introduced in terms of unbundling.[77]

It has to be mentioned that the legislative process in the sector did not end with the fourth package and following the European Green Deal more climate-focused rules were adopted such as the Regulations 2021/1119[78] aimed at reducing greenhouse gas emissions.

6.1. The implementation of the fourth package in Hungary

When it comes to the implementation of the fourth package in Hungary, it is worth mentioning that three new actors were introduced in the Act on electricity. Firstly, active consumers are defined as those consumers who use, store, and feed electricity into the grid or offer the flexibility of their consumption of the electricity stored or generated by them, provided they do not carry out these activities as an occupation or a primary economic activity.[79] The second new term in the Hungarian legislation was the energy communities. The act on electricity gives a detailed definition of the energy communities: these are legal entities whose primary purpose is not aimed at making a financial profit but to provide environmental, economic, and social benefits to its members or in the area of operation by carrying out at least one of the activities such as generation, storage, consumption, electricity distribution, and aggregation. In practice, the forms of energy communities are quite varied, as these can be municipalities, agricultural cooperatives, apartment buildings, and so on. As we can see from their definition, the scope of the activities is diverse; however, as a critique of the Hungarian implementation, it can be said that on the EU level, the scope of activities covered by energy communities was even broader and such things as energy efficiency services were not included in the VET, moreover, on the EU level renewable energy communities can carry out activities not only relating to

74 Szuchy, 2021, p. 158.
75 2019/944 art. 5.
76 Kondorosi and Alföldy-Boruss, 2022, pp. 74–75.
77 Kondorosi and Alföldy-Boruss, 2022, pp. 77–78.
78 Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law')
79 2020. CLXXVI Act. Art. 1.

electricity but to geothermal and biomass, whereas in Hungary the scope was limited exclusively to electricity.[80]

The last important new term in the legislation was aggregation, which is combining power plants and electricity storage facilities that are connected to a distribution, transmission, or private grid for the purpose of buying and selling on an electricity market.[81] As we have previously explained, by aggregating consumers can get a more favourable position in the electricity market while also facilitating the elevation of regular consumers to active consumers.

7. The success of the packages

In the last segment of the article, we would like to briefly evaluate the packages by using statistical data to determine whether they were able to reach their desired goals or not. Regarding the benefits and success of the market opening, many conjuring opinions can be found. The critics say that liberalisation was based on some false assumptions that never materialised. According to them, firstly, the market opening could not result in lower prices; secondly, the liberalisation process failed to mitigate energy poverty[82] (if we look at the statistical data from Eurostat, we can say that, in general, energy poverty has been declining in the EU, however, in many cases it was not as significant as had been hoped to be. Moreover, the liberalised market was not so successful in reacting to the energy crisis as the energy poverty percentage rose by 2,5%),[83] thirdly, they failed to abolish national monopolies as these, as a favourable result of the market opening, became international monopolies,[84] and fourthly, it also failed to create greater security of supply as the subsidies for promoting the use of renewables have made conventional plants unprofitable which resulted in their closing, thus making energy supply more fragile.[85]

The deficiencies in the liberalisation are also highlighted by the fact that it took multiple packages to open up the market, this was not because the EU wanted to take a step-by-step approach to liberalisation but due to the general reluctance of member states to open up their markets, and because the packages have never reached the desired goals and the insufficiencies had to be addressed. For example, consumers and their benefit from the market opening was one of the key aims of the liberalisation; firstly, they were granted the opportunity to change their suppliers, but the information provided was insufficient for the customers, who required further

80 Szuchy, 2022, pp. 560–561.
81 Vet. Art. 3(3).
82 EPSU, 2018, p. 7.
83 Eurostat, Inability to keep home adequately warm.
84 Járosi, 2008, p. 8.
85 Auverlot et al., 2014, p. 24.

details regarding the option to switch suppliers, but this was only implemented in a later package.[86]

7.1. Wholesale markets

The first issue we would like to address is the wholesale market and its electricity generation competition. Before the liberalisation, generating capacity was dominated by vertically integrated monopolies. A great sign of the success of liberalisation would be an increasing number of wholesalers and the declining market share of the largest wholesaler.

Most of the countries saw a decreasing market share of the largest electricity generator, especially in those states where the largest generator had a very dominant position with 80% or more market share, like in Belgium, where from 92% market share in 1999 this data decreased to a 56% market share in 2022. However, in many cases where the largest producer was not that dominant, the decrease was incremental. Moreover, in some cases, such as Spain, the market share of the largest generator today is greater than that observed in 1999. What is more, in 12 of the EU countries – including Hungary – the most significant generator still has a highly dominant position with more than 40% market share.[87] At the time of the first package, it was perceived that large-scale plants – in many cases responsible for large market shares – such as nuclear plants are not going to be attractive options in the future as, in a non-monopolistic system, these would be too risky investments due to their massive costs.[88] The sceptical view about the future of nuclear energy was even more present after it became obvious that the packages are not entirely technology-neutral and there is massive support towards renewables.[89] However, if we look at the current electricity market and the interest after the energy crisis towards large-scale plants such as nuclear power plants, we see a very different picture. As others previously observed,[90] the liberalisation resulted in more competition; however, it cannot be considered a massive success, as not in one case the decrease was negligible, and in some cases, it was only caused by the shutdown of nuclear power plants.

The second issue we wish to elaborate on is the wholesale electricity prices. The prices on the wholesale market peaked during the 2008[91] financial crisis and after the 2021[92] energy crisis. All in all, wholesale prices have been showing a decreasing tendency after the liberalisation, but, unfortunately, the liberalised market could not avoid the impact of global crises.

86 Cseres, 2008, pp. 79–80.
87 Eurostat, Energy market indicator, Largest company electricity generation.
88 Patterson and Grubb, 1996, p. 3.
89 Georgiev, 2015, p. 99.
90 Rathke, 2015, pp. 20–21.
91 European Commission Directorate-General for Energy, 2018, pp. 51–52.
92 Kondorosi and Alföldy-Boruss, 2022, p. 81.

7.2. Retail markets

Following the wholesale markets, the retail segment is also essential to be mentioned. When customers became eligible, the issue of being able to choose from competitive retailers became critical, so firstly, we looked at whether there is greater retail market competition. From the data available starting from 2003, we can conclude that in almost all of the countries, the number of retailers available to final consumers has increased. However, their number is fluctuating and do not consistently demonstrate a growing tendency. For example, in the case of Hungary, the number of retailers was 12 in 2003, then 38 in 2010, then it reached its peak in 2015 with 52 retailers, but by 2021, it went down to 37.[93] To further elaborate on this issue, it is also worth looking at the number of leading retailers selling at least 5% of the total national electricity consumption. Their number in most countries has increased, especially where initially there was only one leading retailer; nevertheless, in some countries like Spain, Netherlands, Czech Republic, Romania, and Hungary, their number decreased.[94] Moreover, the market share of the largest electricity retailer generally has been showing a declining trend, but still, in 12 member states, they have a dominant position with a market share over 40%.[95]

To sum up the competition side of the retail market, we can state that liberalisation was more or less successful in reaching greater competition, but in quite a few cases, retail markets are still dominated by influential retailers, which will presumably remain in this position as consumers remain reluctant to change retailers.[96]

The second issue we would like to address concerning retail markets is the prices (excluding taxes and levies). First, we looked at the prices paid by medium-sized industrial consumers. Unfortunately, Eurostat did not exactly use the same methodology to determine medium-sized industrial users before and after 2007, however, the prices are comparable. In most of the countries, prices paid by industrial end users have increased over the years, and there is no visible effect of liberalisation driving the prices down. In some countries like Ireland, the increase was significant as the prices from 1995 have doubled by 2020. In a few cases, such as Germany, there was a decrease in the prices until the 2021 energy crisis, but the scale of this was only incremental. But the worst information is that after the energy crisis broke out, the prices skyrocketed, and in 2023, we are at a point where, on average, the prices charged to medium-sized industrial users are almost three times higher than in the early 90s.[97]

Finally, the last issue that we would like to discuss is the prices charged to domestic consumers. Here, the situation is the same as with industrial prices, as the

93 Eurostat, Energy market indicator, Electricity retailers.
94 Eurostat, Energy market indicator, Electricity retailers with at least 5% of total electricity consumed.
95 Eurostat, Energy market indicator, Largest electricity retailer.
96 ACER/CEER, 2022, pp. 31–32.
97 Eurostat, Electricity prices for non-household consumers.

Eurostat, again, used different methods to determine certain households; notwithstanding this, the data is still comparable. Most of the countries in the community made domestic consumers eligible between 2003 and 2007, yet this was not visible in the domestic prices after 2003 – we witnessed a steady increase in prices that continued into the next decade. If we compare the average prices in the community following the 2003 eligibility option and the 2020 prices before the crisis, we can see approximately a 25% increase. Moreover, after the energy crisis, prices for domestic consumers have also skyrocketed, just like in the case of industrial customers of the energy sector.

Interestingly, in the case of Hungary, prices in the early 90s were one of the lowest at around 0.03 Euros/Kwh; however, they started to increase rapidly, and by 2010, they more than quadrupled. After 2010, a rapid decrease began, and before 2022, we arrived at 0.07 Euros /Kwh.[98]

Considering all this, we can say that the liberalisation was not successful in reaching the desired lower prices neither for the industry nor for the households.

8. Conclusion

The energy market liberalisation within the community was a very slow process that was hindered by the general reluctance of the member states to deepen the communities' role in the sector. However, after the adoption of four different packages, each of which has tried to address the shortcomings of the previous one, many results have been achieved, starting from greater competition to more stringent environmental protection. On the other hand, after all these years, the packages' success has still been limited and thriving competition has not been achieved.[99] From what we have analysed in the article, we can say that the competition aspect of the packages was more or less successful in both wholesale and retail markets, but definitely not to the desired extent. When it comes to prices, the results were contrary to what was expected from liberalisation, as both industrial and domestic customers saw an increase, although with regards to prices it has to be mentioned that, as previously noted, simultaneously with liberalising, climate issues came to the fore which was not necessarily beneficial for the price of electricity.[100] The limited success of the competition and the prices, also factoring in the issue of information flow to the eligible consumers, are all connected. Yes, there was success on the competition side, but as we saw, dominant positions are still retained, and massive competition has not been achieved. The fact that customers could not and still cannot, in quite a

98 Eurostat, Electricity prices for household consumers.
99 Martinez, 2014, p. 128.
100 Noreng, 2018, pp. 228–229.

few instances, choose from a lot of different providers, combined with the fact that they were completely unaware of the option of switching retailers, results in higher prices, as this ineffective competition does not drive prices down. Other authors have very well observed this before me, but these observations still stand today: the liberalisation process is not yet complete, and the existing barriers stop it from reaching its success,[101] although it has to be mentioned that there is no fully liberalised energy market present anywhere in the world.[102] Until these barriers, such as the dominant positions, are removed, the idea of a liberalised European electricity market and its benefits remain a dream.[103] However, the question arises if, after all these years – especially considering that after the crisis, member states devote much more attention to energy security in their own countries –, attempts at removing these barriers were unsuccessful, can these actually be removed. Suppose the answer is no–then we have to ask ourselves why this process was necessary and what other ideas and structures could have been pursued in the electricity sector. In recent times, the dissatisfaction is also more palpable in the political sphere as in the French Senate, the resolution based on the unsatisfying outcomes of the liberalisation that sought to temporarily exit from the European electricity market gained more support than it was expected. Beyond such approaches, there are other proposals for how the electricity market could be structured such as the ones supporting more public ownership[104] or those advocating the European institutional control of electricity grids,[105] however, these are unlikely to become the standard in the near future.

101 Rathke, 2015, p. 28.
102 Morrison, 2022, p. 477.
103 Benedettini, 2015,
104 EPSU, 2018, p. 4.
105 Martinez, 2014, p. 128.

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