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The Evolution of Licensing Electricity Generating Capacity in Hungary

ABSTRACT: *Although the European Union faced significant challenges due to the energy crises, the mild winter and its expeditious response to shortages helped prevent major disruptions for consumers. One of the natural responses to the crises was to pursue greater energy sovereignty, where domestic generating capacities played a key role, although such emphasis was not seen in a long time. This shift warrants a closer examination of the regulations governing the establishment of generating capacities. Accordingly, this article situates the issue within its historical context by tracing the evolution of rules governing electricity generation capacities, beginning with the origins of electricity regulation in Hungary. The article discusses the modern legislation of the 1930s, followed by the regression during the communist era. In the second half of the historical overview, it addresses the legislation adopted after the 1989 regime change and how these reforms were shaped by the developments in European energy legislation. After introducing the legal heritage of the electricity sector, the article shifts focus to the current 2007 Act on Electricity and its regulation of the establishment of electricity-generating power plants. In the final section, the article addresses contemporary challenges of licensing wind turbines and household-size small power plants. The overview of the key developments in Hungarian electricity legislation, with particular emphasis on the regulation of generating capacity, fills a notable gap in the literature and can serve as a foundation for future comparative analysis.*
KEYWORDS: *power plants, licensing, electricity, renewable energy, energy law, historical development.*

1. Introduction

In Europe, cheap energy was long taken for granted, but in recent years, this assumption has been upended, as Europe experienced a severe energy crisis for which it was largely unprepared. The European Union (EU) weathered the initial shocks because

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of a mild winter, swift action to secure alternative gas supplies and well-stocked gas storage facilities ahead of the heating season. Although the EU survived the initial impact of the crises, it had long-lasting economic effects.[1] Although it appears that the surge in energy price primarily concerned Europe, however, this was not the case. To illustrate the global consequences of the energy crises, it is essential to reference the International Energy Agency's World Energy Outlook report,[2] which states that the proportion of people lacking access to modern energy has been rising for the first time in a decade.[3] However, the rise in energy poverty was not pronounced in Europe. When the crises struck, and the EU began importing liquefied natural gas (LNG) as an alternative to Russian gas, member states were willing to pay a premium on these imports, significantly more than what these supplies previously fetched in other parts of the world. By offering a higher price, Europe redirected LNG shipments towards its own market. However, this came at a cost: most original destinations—especially developing nations—were deprived of their expected imports as they could not compete with the prices offered by European nations. Subsequently, massive shortages occurred in countries like Pakistan or Bangladesh, driven by the lack of energy supply.[4] One of the primary responses by nations to the crises was a renewed focus towards energy security, which was also a key finding in the aforementioned Energy Outlook report.[5] As a consequence of the energy crises, the previously dominant emphasis on environmental protection within the energy triangle shifted in favour of energy security. To enhance energy security, the most evident solution is to reduce energy dependence by expanding national generating capacity. This response was clearly visible at the European level as states sought to boost their domestic production, often reverting to resources[6] that had previously been deemed harmful to the environment.

This article seeks to elucidate how new electricity generation capacity is established, a process that faces significant contemporary challenges owing to infrastructural and regulatory constraints. The article provides an overview of the Hungarian electricity sector over the decades, focusing on the evolution of legislation for establishing generating capacity. Next, it delves into the current legal framework. In the concluding section, it addresses two contemporary challenges in constructing generating capacity. An analysis of the development and the current status of the Hungarian electricity sector can serve as a basis for further comparative research on the topic.

1 Official Journal of the European Union (2023) Opinion of the European Economic and Social Committee on the impact of the energy crisis on the European economy, (2023/C 293/02).
2 IAE, 2022, p. 10.
3 Ibid. p. 29.
4 Tayyaba et al., 2023, p. 1.
5 IAE, 2022, p. 30.
6 Eckert and Sims, 2022.

2. Hungarian Energy Mix

Before considering the regulatory issues, it is imperative to discuss the Hungarian energy mix. Firstly, it is important to examine the primary energy sources and reliance on their import from the perspective of energy security. The two most important sources of primary energy are oil and gas, accounting for about 30% of primary energy mix.[7] In both cases, there is heavy reliance on imports, with around 80% of resources sourced from abroad.[8]

Meanwhile, the third most important primary source is nuclear energy, holding a more than 15% share.[9] Since the construction of the Paks Nuclear Power Plant, nuclear energy has maintained a stable position in the Hungarian energy mix. The last source worth mentioning is biomass and waste, holding a little more than a 10% share. Other sources, including most renewables, do not represent more than 5% of the primary energy mix, with coal falling into this category, as its significance has been steadily declining. Essentially, in terms of primary energy consumption, Hungary relies on imports for 64% of its needs; the figure would have likely been higher without the contribution of the Paks Nuclear Power Plant.[10]

Considering that this article emphasises the electricity sector, it is important to examine how Hungary generates electricity. Anticipatedly, as seen with primary energy sources, the Paks Nuclear Power Plant holds a significant position in Hungary—a role that becomes even more pronounced in electricity generation, where it accounts for 44% of gross electricity generated. This is followed by gas, which represents 25% of the electricity generated, and photovoltaic (PV) energy, which holds a 13% share in electricity generation. However, it is worth noting that the share of PV energy has increased 80-fold between 2014 and 2022.[11] Moreover, the data used does not include 2023, but due to a surge in gas prices, a significant amount of new PV capacity has been installed. Accordingly, PV is expected to overtake gas as the second-largest source of electricity generation in the near future. PV is followed by coal with an 8,5% share, although its share has been steadily declining. Meanwhile, biomass holds a 4% share, while wind accounts for a mere 1,7% share.

As in most European states, it is evident that growing concerns of climate issues has influenced Hungary's energy mix, leading to the replacement of the most polluting

7 KSH, 6.1.1.5. A primer energiafelhasználás szerkezete (The structure of primary energy use) [%].
8 MEKH, 2.2 Elsődleges kőolaj- és kőolajtermék és másodlagos kőolajtermékek éves ellátása (Annual supply of primary petroleum and petroleum products and secondary petroleum products) 2014-2022, 3.2 Éves földgázmérleg 2014-2023.
9 KSH, 6.1.1.5. A primer energiafelhasználás szerkezete (The structure of primary energy use) [%].
10 Ibid.
11 MEKH, 4.2 Bruttó villamosenergia-termelés éves adatai (Annual gross electricity production data) 2014–2023.

sources with carbon-neutral electricity-generating capacities. Regarding Hungary's reliance on energy imports, it can be concluded that the country has increasingly depended on energy imports over the past decades. However, in the case of electricity, the installed generating capacity is relatively close to national consumption by being able to provide approximately 80% of demand.[12]

3. Evolution of the Legal Framework of the Electricity Sector With Emphasis on Establishing Generating Capacity

Following the overview of the physical realities of the electricity sector, the discussion focuses on the legal framework governing Hungary's electricity sector. This section examines the most important aspects of legislation that shaped the structure of the electricity sector, with particular focus on how they have regulated the establishment of generating capacity.

Although energy law is considered a nascent legal area, it actually dates back to as early as the 19th century, with legislation addressing certain energy sources such as coal. This branch of law[13] has since expanded to other prominent sources, namely oil and gas. The significance of these sources evolved following World War II, with the adoption of new rules on nuclear and renewable sources.[14]

Hungary followed a similar path, our initial legislation addressing the electricity sector being introduced as early as 1888.[15] The reason why it is considered ahead of its time is that the first public electricity generating plant in the world—established in New York—became operational just six years before the adoption of the Act.[16] However, considering Hungary's historical position in the early days of public electricity supply, it can be understood as in Temesvár, the first public electricity generating power plant, became operational in 1884.[17] The Act XXXI of 1888 on Telegraphs, Telephones and Other Electrical Installations, as its name suggests, only partially addressed the sector. The reasoning of the Act states that its adoption was driven by the growing prominence of the telegraph, telephone and other electrical installations. However, establishing these solely through state investment would have posed

12 KSH 6.1.1.8. Villamosenergia-mérleg (Electricity balance) [gigawatt hours].
13 There is still no consensus on whether energy can be considered a separate branch of law, or in what other way it should be categorised. It is relatively challenging to simply refer to energy law as it does not reflect its vast nature and the branches of law it covers, from environmental to administrative law. Nevertheless, it is clear that in recent years, it has gained widespread recognition, with various dedicated courses dealing with the issue.
14 Heffron, 2021, p. 1.
15 Szuchy, 2021, p. 1.
16 Kerényi, 1997, p. 121.
17 Gerse, 1994, p. 75.

a significant financial burden given the current economic climate. Therefore, it was essential to create opportunities for private sector investments, while also ensuring regulation and the implementation of a licensing process due to the public interest associated with such infrastructure.[18] Accordingly, the Act provides that primarily, the state has the right to establish and operate the installations mentioned above, and in the event that entities other than the state want to enter the sector, they will be given licences.[19] The Act states that generally, the licensing process comes under the purview of the minister of public works and transport. However, there are certain exceptions, such as those crossing the Hungarian border or those connecting settlements of more than 10.000 people that already have state-owned telegraph offices or telephones. The licensing, in these cases, is channelled to the legislative branch.[20] The Act does not specify the process of licensing, nor does it regulate the content of the licence in detail, but establishes certain basic terms such as retaining the state's key position in regulating the sector.[21] However, it states that private property owners and houses owners must bear, without compensation, the crossing of telegraph, telephone and electrical installations of public interest above their real estate.[22] Besides, the installations addressed prior to the Act do not contain specific regulations on establishing generating capacity or licensing. One of the reasons why the rules on the plants could be licensed were not discussed is that, in most cases, the decision to establish public electricity generating capacity was not made by plant operators, but by the cities themselves.[23] For example, Budapest opted for a tendering procedure that resulted in the granting of two concessions. It should be noted that during this period, the development of generating capacity was heavily supported by foreign capital.[24]

Throughout this Act, it is evident that matters concerning telegraph, telephone and other electrical installations were of great importance to the state, with significant public interest associated with their functioning and development. However, amid financial constraints, the state was unable to exclusively perform this activity, paving the way for the entry of the private sector, but in such a manner that the state retains the key position, not just to establish installations but also licensing procedures.

18 1888. évi XXXI. Act reasoning – Telegraphs, Telephones and Other Electrical Installations, general reasoning.
19 1888. évi XXXI. Act reasoning – Telegraphs, Telephones and Other Electrical Installations, art. 1.
20 Ibid. art. 2.
21 Ibid. art. 3.
22 Ibid. art. 7.
23 Antal, 2014, p. 48.
24 Németh and Lázár, 2005, pp. 7–8.

3.1. 1931 Act on the Development, Transmission and Supply of Electricity

After the initial applications of electricity in Hungary, it became clear that the growth of the sector was unstoppable, and its development gained momentum. Until the Treaty of Trianon—which mutilated Hungary's territory—there were approximately 200 electricity-generating power plants operating in the country.[25] Following the war, the development continued, and owing to the specific nature of the sector by the late 1920s, a monopolistic structure began to take shape, with four companies controlling more than 80% of public electricity generation.[26] To enhance development and extend the scope of electrification in Hungary, the 1931. XVI Act on the Development Transmission and Supply of Electricity was adopted, which can be considered the first act to specifically regulate the electricity sector.[27] The period during which the Act was adopted was a particularly productive time in Hungarian legal history, making it a modern piece of legislation. A significant achievement of the Act is its clear distinction between the private and public spheres, and establishing for the latter, a system that respects private autonomy.[28] This legislation has specifically addressed the issue of licensing electricity-generating capacity; the relevant provisions will be discussed in the following section.

Reflecting its modern perspective, the Act contained separate provisions for power plants intended for self-use and those serving the public. No licensing procedure was needed for power plants that generated electricity for self-use, but when the plant's power output exceeded 500-kilovolt ampere—or 0,5 MW—it had to be reported to the minister of commerce.[29]

The second category is public plants. The Act clearly states that to provide electricity for a fee, the generating capacity has to be established through a licence issued by the minister of commerce.[30] The first issue that has to be addressed is how the decision-making process to establish public generating capacity was made. Principally, the licensing document can be obtained following a tendering procedure that takes into account the capacity to meet the electricity demands of a specific area in the most favourable condition, as well as the energy economics of the country. The Act strongly commits to hydropower, prioritising it over other energy-generating sources.[31] The reasons behind the inclusion of this provision in the Act reveals that it stems from the acknowledgment that the country is not very rich in energy sources. Therefore,

25 Antal, 2014, p. 48.
26 Németh and Lázár, 2005, p. 9.
27 Ibid. p. 9.
28 Szuchy, 2018, p. 81.
29 1931. XVI. Act on the Development Transmission and Supply of Electricity, art. 6–7.
30 Ibid. art. 2.
31 Ibid. art. 10.

hydropower is preferred[32] to maintain the already scarce resources.[33] The content of the licensing document was relatively simple; it has to include the name of the license holder, location of the plant, capacity, etc., among others, while also addressing the pricing and discounts the licence holder is required to provide for street lighting.[34] After obtaining the licensing document, two more steps had to be fulfilled to generate electricity. The first concerns the construction licence, issued with a deadline; however, the minister of commerce, in case of a request, could delay it.[35] The second, operation licence, which is related to the transmission and distribution of electricity, can only be issued if the license holder follows the requirements included in the licensing document and the construction licence.[36] Finally, it is worth noting that the aforementioned rules can be applied with certain facilitations to plants with a specific output, although the details of the output are not defined either in the Act or its reasoning.

As mentioned in other academic papers discussing the Act, it can be considered a remarkably forward-thinking piece of legislation, bearing notable similarities to current regulatory frameworks.[37] Specifically regarding licensing, it can be said that the Act was relatively advanced, particularly in its distinction between private and public spheres. Moreover, the provision for applying simplified requirements to plants below a certain capacity closely mirrors contemporary regulatory frameworks. In hindsight, the Act did not lead to a significant transformation in Hungary's electrification; most of the established capacities were built primarily for industrial purposes.[38]

3.2. The Electricity Sector Following Communist Takeover

As Soviet troops advanced through Hungary, the nationalisation of the industry began, initially as a form of retaliation against businesses previously owned by Germans.[39] Soon after, nationalisation extended to the coal sector[40] where existing private coal mines were no longer allowed to be managed by their rightful owners.[41] This initial limitation of ownership rights was later extended by assuming ownership

32 Art. 10. stated that other sources, such as lignite and waste coal, also had preferential treatment, but hydropower had priority over these as well.
33 1931. XVI. Act reasoning – Development Transmission and Supply of Electricity, art. 10.
34 1931. XVI. Act on the Development Transmission and Supply of Electricity, art. 11.
35 Ibid. art. 14.
36 Ibid. art. 16.
37 Szuchy, 2018, p. 86.
38 Moreover, World War II also did not help the electricity generation sector, as a significant portion of the existing infrastructure was destroyed. See: Németh and Lázár, 2005, pp. 10–11.
39 Mihályi, 2018, p. 14.
40 Halkovics, 1998, p. 580.
41 12.200/1945. Decree on the State Management of Coal Mines.

for the benefit of the state.[42] Not long after the coal sector, the electricity sector underwent nationalisation with the adoption of the 1946. XX Act,[43] which brought certain electricity sources and their connecting power lines under state ownership. The adoption of the Act was prompted by multiple arguments as to why state ownership of such installations is necessary. First, the reasoning of the Act[44] states that existing capacities were inadequate as they catered to only 42% of the settlements. Generally, Hungary lagged behind Western countries in terms of electrification, and the devastation caused by the war further worsened the situation. Moreover, it was argued that private plants pursued individual business interests to the detriment of the public. As state intervention in the sector was not adequate—according to them—the equipment was obsolete, and the prices were high, which negatively affected the economy in general. Furthermore, since the electricity sector played a critical role in reconstructing the state after the war, successful development of the sector is only possible by following common guidelines. This justifies the nationalisation of power plants and transmission lines of national importance, and granting state intervention for the operation of plants that are not nationalised.[45] As observed, the Act devoted considerable effort to justifying the need for significant state intervention in the sector. However, it fell short in addressing the treatment of the previous owners of the nationalised installations. The Act stated that compensation would be provided, the details of which would be regulated in a separate legislation. However, in reality, this promised compensation was not delivered, yet the nationalisation nevertheless proceeded.[46] The Act did not mark the end of nationalisation; two years later the 1948. XXV Act[47] was adopted. Although it was primarily aimed at the industry, it also included electricity installations employing more than 100 people since August 1946 as well as every electricity distributing company.[48] The Act aimed to correct what was seen as a 'mistake' of the previous regulation, which effectively divided the economy into two distinct halves—one state-owned and the other remaining in private hands. According to the Act's proponents, this division hampered economic progress and obstructed the objectives of the three-year plan.[49]

42 1946. XIII. Act on the Nationalisation of Coal Mining.
43 1946. XX. Act on the State ownership of power plants and transmission lines of certain electricity plants and other provisions related to electricity management.
44 1946. XX. Act reasoning – State Ownership of Power Plants and Transmission Lines of Certain Electricity Plants and Other Provisions on Electricity Management.
45 Ibid.
46 This round of nationalisation concerned the power plants with a capacity of over 20.000 kilowatts, which meant by 1947, more than 45% of the public electricity, See Németh and Lázár, 2005, p. 11.
47 1948. XXV. Act on the State Ownership of Certain Industrial Enterprises.
48 Ibid. art. 1.
49 1948. XXV. Act reasoning – State Ownership of Certain Industrial Enterprises.

Regarding this period, it is worth noting that the 1931. XVI Act remained in force, and it took a relatively long time to adopt a new act on the subject.

3.4. Replacing the 1931 XVI Act

As mentioned earlier, the notably forward-thinking 1931 Act[50] remained in force throughout the nationalisation of the electricity sector and continued to do so long afterward. The change came in the early sixties in the form of the 1962. IV Act on the Generation, Transmission and Distribution of Electricity. As stated in the reasoning of the Act, the previous legislation became obsolete in managing the sector, driven by the shift in market structure towards state ownership. Subsequently, new rules had to be introduced to manage the sector, which had undergone a comprehensive structural change following the communist takeover.[51] The most fundamental principle of the new Act was that an electricity plant supplying consumers could only be state-owned.[52] This provision reflects the profound structural changes that took place in the sector, while also signalling that, given the social implications of electricity supply, it will remain a state-governed sector.

With regard to establishing generating capacity and licensing of power plants, the text of the Act was rather terse. Nevertheless, similar to the former legislation, it also differentiated between public power plants and those that provided electricity to businesses.[53] Regarding the latter, the executing Act[54] specified that these can only be installed in three cases: if they are intended as backup plants following the failure of public plants; if they are more efficient than their public counterparts; and if waste can be used to power them. According to the executive decree of the Act concerning the establishment and operation of public plants, the provisions governing investments were to be applied, with the ministry of heavy industry responsible for setting the technical details.[55]

This approach departed from the tendering procedure, instead opting for a system that offered no clear pathway for market players to meet the country's energy needs.

50 The reasoning of the new act also acknowledged that in the capitalist system, the 1931 Act was forward-thinking, and it satisfied the needs of the old system. See: ibid.
51 1962. IV. Act reasoning – Generation, Transmission, and Distribution of Electricity, general reasoning.
52 Ibid.
53 1962. IV. Act on the Generation, Transmission, and Distribution of Electricity, art. 2.
54 40/1962. Government Decree on the Execution of the 1962. IV. Act on the Generation Transmission and Distribution of Electricity, art. 13.
55 Ibid. art. 9.

3.5. The First Act on Electricity After Regime Change

Before examining how the 1994. Act on Electricity, adopted after the regime change, influenced the Hungarian electricity sector, it is worth emphasising the impact the communist regime had on the sector's structure. The structure of the Hungarian electricity market was similar to that in the Soviet Union, where a vertically integrated state-owned electricity company was responsible for generation, transmission and distribution—the Hungarian Electricity Works Trust (MVM Trust).[56] Following the regime change, it became evident that the current infrastructure in the electricity sector was obsolete and more generating capacities were needed. However, MVM Trust was unable to deliver this owing to financial constraints; therefore, the private sector had to be involved.[57] To prepare for the upcoming market opening, MVM Trust was transformed into a limited liability company, Hungarian Electricity Works (MVM). Although they remained connected, the power plants were granted their own legal personality. Following this significant step, attempts were made to privatise the power plants in 1993; however, since they were unsuccessful, the legislators had to realise that a solid legal base had to be adopted for successful privatisation.[58] Subsequently, in 1994, the Act on Electricity[59] was adopted; while it did not aim to establish a fully competitive market, it nevertheless had a profound influence on the future development of the sector.[60] According to the reasoning of the Act, the goal was to establish a system where market conditions govern the regulation of establishing generating capacity, while the licensing system ensures the protection of interests related to electricity supply.[61]

Similar to previous regulations, the Act also differentiated between public and private plants, but this time, the private plants were defined as those generating more than 40% of power for self-use, while public plants generate more than 60% of power for public use.[62]

Establishing generating capacity begins with the minister of economy, which submits the power plant establishment plan every alternate year either to the government if the capacity of the plant is 200–600 MW or to the Parliament when it is over 600 MW of output or a nuclear plant.[63] Besides the minister, the Hungarian Energy Authority is another actor in the licensing procedure. There is a special category of

56 Árva et al., 2016, p. 201.
57 Kerekes, Szörényi and Diallo, 2019, p. 6–7.
58 Rátky and Tóth, 2022.
59 1994. XLVIII. Act on the Generation, Transmission and Supply of Electricity.
60 Kerekes, Szörényi and Diallo, 2019, p. 6.
61 1994. XLVIII. Act reasoning – Generation, Transmission and Supply of Electricity.
62 1994. XLVIII. Act on the Generation, Transmission and Supply of Electricity, art. 3.
63 Ibid. art. 4.

plants that do not fall under the regular licensing procedure—these include plants with an output capacity below 20 MW.[64] The Act strictly required that only legal entities can participate in the licensing procedure; moreover, they have to be based in Hungary.[65] The first stage was the preliminary licensing process, during which the authority could evaluate whether the license application is substantial, well-planned and well-founded. This licensing step is particularly valuable, as it allows the authority—before the establishment license—to determine whether or not the proposed plant is suitable to proceed to the licensing procedure stage. Following the preliminary license, a public hearing is held, which is essential for the granting of future licenses in cases where it is prescribed by law. Following these steps, the two traditional stages of licensing occur in sequence: first, the establishment licence and second, the operation licence, both of which are issued for a limited period.

These were the initial licensing rules in the Act; however, over time, amendments were made, and the licensing procedure changed. Later, the Act was amended to address certain grey areas in the previous legislation. In addition to non-public plants with a capacity below 50 MW from 1995, the Act on Electricity also required operators of public plants with a capacity below 20 MW to notify the Authority of the initial start-up of the plant. This also clarified the scope of the operating licence, explicitly stating that it permits the operation of public plants with a capacity exceeding 20 MW and private plants with a capacity exceeding 50 MW.

Regarding the practical aspects of the Act, it is worth noting that the Hungarian electricity market could not part with the central position of MVM as the market worked on a single buyer basis where only MVM purchased electricity and sold it to suppliers. Although, in certain aspects, the Act was relatively conservative in the electricity sector, it established a strong legal foundation upon which subsequent legislation was built.[66] The strong foundation also facilitated the privatisation that occurred a year after the adoption of the Act, although not without challenges; the long-term contracts between the new owners and MVM later became obstacles for the creation of a competitive European electricity market.[67]

3.6. 2001 Act On Electricity Adopted in the Spirit of Future EU Membership

Shortly after the 1994 Act was adopted, significant changes occurred in European integration concerning energy. In 1996, the first liberalisation package was adopted, which included the 96/92/EC Directive establishing common rules for

64 Ibid. art. 10.
65 1994. XLVIII. Act reasoning – Generation, Transmission and Supply of Electricity, art. 10–11.
66 Kerekes, Szörényi and Diallo, 2019, p. 6.
67 Vince, 2007, p. 304.

the electricity market. While this article does not delve into details of the package, from the perspective of establishing generating capacity, it is essential to highlight that the Directive provided two ways to establish capacities an authorisation and/or a tendering procedure, granted that these are objective, transparent and non-discriminatory.[68]

Starting from 1990, the fact that countries previously behind the Iron Curtain—among them Hungary—would once be part of European integration became increasingly apparent initially through the Association Agreement[69] in 1991, then with the Copenhagen criteria in 1993. Subsequently, in 1994, Hungary submitted its application for full membership.[70] As Hungary was clear about joining the community and as the Copenhagen criteria contained requirements about adopting 'acquis communautaire', the first liberalisation package had a significant influence on the Hungarian electricity regulation. To implement the provisions of the 96/92/EC directive, the 2001. CX. Act on electricity was adopted,[71] as the general reasoning of the act stated that adapting to new developments in the electricity sector transcends beyond the scope of the previous Act.[72] The new Act eliminated the single buyer structure of the previous system, and aligning with the Portuguese example,[73] opted for a dual market model where there was a difference between those who purchased electricity from public utility providers and eligible consumers[74] who could purchase electricity from the power plants or electricity trading license holders. In this model, electricity generators were allowed to freely sell their capacities on both markets beyond what was reserved[75] by MVM with long-term contracts.[76] In essence, this meant that the competitive market was positioned only as an alternative to the regulated segment,[77] although such an approach also had its fair share of reasons.[78]

Regarding the establishment of generating capacity, the government's previous position has been reduced to legislative functions in the detailing of the licensing

68 Although there were two options, the states, in practice, almost in all cases, opted for the authorisation procedure. See: Fazekas and Németh, 2022, p. 92.
69 In it Hungary declared the intent to become a full member of the European community.
70 Szabó, Kovács and Debisso, 2018, pp. 63–70.
71 Fazekas and Németh, 2022, p. 92.
72 2001. CX. Act reasoning – Electricity, general reasoning.
73 Brzózka, 2012, p. 37.
74 181/2002. Government Decree defined the category of eligible consumers: initially, those consuming over 6.5 GWh were eligible, then the scope was later extended to consumers with lower consumption levels.
75 Such a reservation served the sound functioning of the regulated market so that it has adequate amounts of capacity and does not depend on the decisions of the generators.
76 Fazekas and Németh, 2022, p. 95.
77 Brzózka, 2012, p. 37.
78 The regulated market, especially for certain types of consumers, guaranteed more stability than a model that was entirely market-based.

procedure and the determination of the energy policy requirements of power plant establishment.[79] Such energy policy requirements are outlined in the executive government decree of the Act, and include the promotion of modern technologies, use of renewables and generation of electricity from waste.[80] A more prominent role in licensing was assumed by the Authority, which was responsible for issuing, modifying and revoking licenses, as well as for organising tendering procedures for generating capacity.[81] As already mentioned, the 96/92/EC Directive proposed two strategies for licensing, authorisation and tendering, but in practice, almost all countries opted for the authorisation procedure;[82] so did Hungary. The primary method for establishing power plants was through authorisation, although tendering was also included as an alternative option, which could be invoked if the available electricity supply was insufficient to meet consumer demand.[83]

The licensing rules in the new Act align with the provisions of the Directive as it emphasises the implementation of a licensing process that is non-discriminatory.[84] Contrary to the previous concept, the new Act stipulates that a license must be granted in principle, and can only be denied under specific circumstances defined in the provisions.[85] Regarding the actual stages of power plant establishment, the Act eliminated the preliminary licensing phase and introduced a two-tier licensing system for plants with a generating capacity exceeding 50 MW. For those with capacities below 50 MW but over 1 MW so-called small power plants, the Authority had to be notified of the start of operation, although no license was needed; for plants with capacities under 1 MW, neither licensing nor notification was necessary.[86] The two-stage licensing procedure established for plants with capacities over 50 MW was intended to only contain requirements necessary for the safe operation of the electricity system and not to promote competition.[87] Nevertheless, the requirement for the operator to be based in Hungary remained.[88] The first licence is the power plant establishment licence, which is issued for a limited time.[89] In this procedure, the applicant must provide a feasibility study and statements of the competent local

79 2001. CX. Act on Electricity, art. 4. paras. e and f.
80 180/2002. (VIII. 23.) Government Decree – on the execution of certain provisions of the 2001. CX. Act on Electricity.
81 2001. CX. Act on Electricity, art. 10. paras. a and h.
82 Fazekas and Németh, 2022, p. 92.
83 2001. CX. Act on Electricity, art. 106. para. 3.
84 Ibid, art. 50. para. 2.
85 2001. CX. Act Reasoning – Electricity, arts. 49–52.
86 In essence, there were three categories: under 1 MW, no licence or notification needed, 1–50 MW notification of operation to the authority, and +50 MW two-tier licensing.
87 2001. CX. Act Reasoning – Electricity, arts. 53–64.
88 180/2002. (VIII. 23.) Government Decree – on the execution of certain provisions of the 2001. CX. Act on Electricity, art. 34.
89 2001. CX. Act on Electricity, art. 53.

authorities,[90] but it also has to comply with minimum energy efficiency values.[91] Following the establishment licence, the second step is the power plant operation license with which the licensee can begin to generate power.[92] For power plants that generate electricity on the regulated market, the Act contains special requirements.

As observed, the Act was adopted in the spirit of the liberalisation of the electricity sector. It was intended to ease the requirements and also simplify the procedure of establishing new generating capacities. Moreover, legislation with output limits also promoted the establishment of smaller power plants, which, due to their attributes, entailed the promotion of cleaner energy. As others have observed, the Act diminished the previously significant role of the state in the establishment procedure, shifting the risk of power plant construction on to investors.[93]

3.7. 2007 Act On Electricity and the Establishment of Fully Open Market

Principally, two key factors must be highlighted to explain why, just six years after the previous Act on electricity, a new Act was adopted. The first reason was the adoption of the second energy package. Shortly after the first package, the commission conducted an inquiry into the functioning of the internal energy market, and their reports[94] revealed significant discrepancies between member states, resulting in an uneven playing field within the internal electricity market.[95] To address the gaps in the first package, the second legislative package was adopted with a new Directive on the internal market in electricity.[96] A significant change in the Directive specifically addressed the establishment of generating capacity, as the authorisation procedure became the default method, while the tendering procedure was limited to three specific circumstances: a) if the capacity achieved through authorisation is not sufficient to provide supply security, b) in the interest of environmental protection and c) for promoting less developed new technologies also only in the case where it cannot be done through authorisation. These and other changes, such as the highly debated third-party access[97] entailed that the Hungarian legislation had to be changed. The second reason why the new Act was adopted can be found in the dual market

90 Ibid.
91 180/2002. (VIII. 23.) Government Decree – on the execution of certain provisions of the 2001. CX. Act on Electricity, art. 42.
92 2001. CX. Act on Electricity, art. 56.
93 Kerekes, Szörényi and Diallo, 2019, p. 10.
94 COM (1998) 167 final, 16.3.1998, COM (1999) 164 final.
95 Eikeland, 2011, p. 20.
96 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.
97 Johnston and Block, 2012, p. 21.

structure of the 2001 Act. It was intended as an interim step in between the previously fully regulated market and a fully free one, but it soon became clear that it could not fulfil its bridging function. The competitive market was merely an alternative, with eligible consumers switching between it and the regulated market depending on which offered better prices.[98]

Subsequently, in 2007, the new Act on Electricity[99] was adopted—it still remains in force—that terminated the dual market model and introduced the fully open market.[100] The establishment of the open market entailed the termination of the previously-regulated segment; however, concurrently it introduced the institution of universal supply, which, essentially, assumed the position of a public utility provider. Universal supply meant a system where domestic consumers and small businesses are allowed to purchase electricity from special traders that supply a certain quality of electricity for an equitable price anywhere in the country.[101] Such an institution was aimed at protecting certain consumers from abuses.[102] In this new system, distorting competition could only be tolerated in two cases—either to combat the use of a dominant position or to protect vulnerable consumers.[103]

Building on the spirit of the previous Act, this legislation explicitly states that anyone may establish new generating capacity at their own commercial risk, with certain exceptions—such as wind power—which will be mentioned later.[104] Aligning with the Directive's provisions, the Act also mentions the possibility of a tendering procedure for creating generating capacity, but only in three cases specified by the Directive.[105] Furthermore, following the growing attention towards carbon-neutral and sustainable energy sources, the Act introduces support schemes for the establishment of renewable power plants and those generating electricity from waste.[106]

With regard to licensing procedures, the regulation distinguishes between two main categories of power plants: small plants with a capacity of 0,5–50 MW and those having capacities over 50 MW. For small power plants, the Act establishes a simplified licensing procedure comprising a combined licence that covers establishment and operation. The construction of such plants can begin only after obtaining the licence; moreover, the licence holder is required to notify the authority and transmission system operator two months before commencing operation. The notification requirement was later supplemented by an obligation to also notify them of the operation 30

98 Fazekas and Németh, 2022, p. 98.
99 2007. LXXXVI. Act on Electricity.
100 2007. LXXXVI. Act Reasoning – Electricity, general reasoning.
101 Fazekas and Németh, 2022, p. 100.
102 Nagy, 2022, p. 300.
103 Szilágyi, 2010, p. 153.
104 2007. LXXXVI. Act on Electricity, art. 7.
105 Ibid. art. 8.
106 Ibid. arts. 9–10.

days after its commencement. The combined licence is issued for a fixed period, but can be extended.

Power plants having capacities over 50 MW previously all had a two-stage licensing process, but in 2011, the Act was amended, and special provisions were introduced for plants having capacities over 500 MW. These plants are first required to obtain the principal licence for a power plant with a significant impact on the operation of the electricity system. This step entails presenting the concept—through an impact assessment—of constructing a plant that would significantly impact the entire electricity system, allowing the Authority to determine the requirements for safely integrating the plant into the Hungarian electricity system.[107] After obtaining this principle licence, the subsequent stages of licensing are the same for every plant with a capacity exceeding 50 MW. Similarly to the previous Act, the two stages of licencing are the establishment license and the operation license. The application for the establishment licence should be submitted to the authority, which issues it for a limited time, although it can be extended once. After obtaining the licence, the licence holder can begin the process of establishing the plant.[108] If the establishment adheres to the licensing guidelines, the licence holder can apply for an operation licence,[109] which authorises the licence holder to produce and sell electricity. The licence initially also permits electricity usage, but that was later removed from the scope of the licence.[110]

The licensing procedures are similar to those in the 2001 Act, especially regarding output and the two-stage licensing of bigger plants. However, the tendering procedure and the limitations on who can establish power plants differ from the previous Act. Regarding the practical implication of the Act, it can be concluded that in the second decade of this century, there were virtually no big or small conventional power plant constructions; instead, the installation of solar panels increased significantly, driven by the support schemes on renewable energy.[111]

3.7.1. Contemporary Questions of Establishing Generating Capacities

In recent years most attention has been directed towards the environmental aspect of the energy triangle; as a result of which anomalies occurred concerning two renewable energy sources—namely wind and solar.

107 Ibid. art. 80/A.
108 Ibid. art. 81.
109 273/2007. (X. 19.) Government Decree on the execution of certain provisions of the 2007. LXXXVI. Act on Electricity, art. 67.
110 2007. LXXXVI. Act on Electricity, art. 83.
111 Stróbl, 2022, p. 123.

As it was mentioned, there were special rules regarding deploying wind power. For wind turbines and wind farms exceeding the definitional scope of household plants, the Act stipulates that, in view of the electricity system's capacity balance, the government annually determines both the number of licences that can be issued and plant capacity.[112] The rules for establishing wind generating capacity are detailed in the 33/2009 Decree, which used a tendering procedure, although in practice, no such tenders were launched. The requirements regarding the establishment of wind turbines and farms were later amended in 2016, introducing a provision in the 253/1997. Government Decree that in a built-up area and over a 12-km radius, no wind turbine or farm (except household-size small power plant), can be constructed.[113] Considering the size of Hungary, the areas where electricity generation from wind would be feasible, and the village structure make it challenging to establish wind capacity. The imposition of such restrictions was not without justification; it was argued that wind farms generate noise pollution, pose danger to birds, and lack visual appeal. Amid these arguments, wind power as expected—but unexpectedly from a general EU perspective—stopped expanding in installed capacity, and even began declining due to retiring old installations. However, as it was already concluded, in the wake of the energy crisis, many states realised the importance of generating power from existing resources, and renewables, such as wind, which offered a feasible solution. The potential benefits of wind energy was also realised in Hungary, and the latest Draft National Energy and Climate Plans that was submitted to the commission in 2023 better emphasised the use of wind in electricity generation. These changes envisaged that by 2030, Hungary's installed capacity would triple, while projecting changes in the legal framework.[114] The change occurred at the end of 2023, paving the way for expanding wind power. The new 650/2023. (XII. 28) Government Decree modified multiple legislation concerning wind energy. The modified 253/1997. (XII. 20.) Government Decree reduced the 12-km radius to 700 m.[115] Moreover, it repealed the 33/2009. (VI. 30.) Decree that previously regulated the tendering procedure of wind farms. Currently, their establishment is governed by the general rules contained in the Act on Electricity. The change marks a significant shift in the possible future of wind power, aligning with the goals of the national energy and climate plan; however, some are not entirely satisfied with the scale of this expansion.[116]

112 2007. LXXXVI. Act on Electricity, art.7/B.
113 253/1997. (XII. 20.) Government Decree on national planning and building requirements, art. 10. para. 4.
114 National Energy and Climate Plan, Revised version 2023, p. 26.
115 This 700 m zone can be disregarded in areas where an investment of major economic importance is being or has been carried out.
116 Energiaklub, 2023.

The second issue concerns household-size small power plants.[117] According to the 2007 Act on Electricity, 'small power plants are connected to the low-voltage grid with a connected load not exceeding 50 kVA at one connection point'.[118] The establishment of such small power plants received widespread support among EU states, including Hungary, where the balance sheet accounting system provided a particularly favourable support scheme compared to those of other EU member states. Balance sheet accounting refers to a system where, during the accounting period, the amount of electricity purchased is offset by the amount of electricity produced.[119] This scheme worked so well that from 2012–2023, the number of installations rose from 1800 to 212000, with their current combined capacity standing at 1800 MW,[120] which corresponds to the capacity of the Paks Nuclear Power Plant.[121] The volatile nature of these plants previously put enormous pressure on the grids, necessitating upgrades; however, with the energy crises, the price of gas increased significantly, making the establishment of such small plants an even more financially viable option for many households. The significant increase in interest resulted in a situation where the grids could not cope with the ever-increasing new volatile sources. To combat excessive pressure on the grid, the government adopted a decree in October 2022,[122] which temporarily halted the grid connection of plants whose applications were submitted later than 31 October 2022. Simultaneously, necessary upgrades were made to the grids, and by March 2023,[123] a new decree was adopted, which stated that the lifting of the ban on connections should be evaluated by the distribution licence holders, and can be lifted in areas where it is deemed unnecessary. Subsequently in October 2023, a government decree was adopted to lift the ban, starting from January 2024, in the overwhelming part of the country.[124] Moreover, accounting rules were

117 These small household power plants are, in a vast majority of cases, solar plants.
118 Tóth, 2022, p. 429.
119 This system is beneficial as the electricity usually generated during the day when the consumption of a household is the lowest does not have to be used at that time, but is channelled into the grid and can be used somewhere else. Therefore, by counting how much it charged into the grid it helps to balance out what a household would consume in periods when these plants do not generate electricity. Smart meters must be installed with these plants to count the electricity produced and purchased.
120 This is the installed capacity, but due to the volatile nature of solar energy, the same amount is not produced constantly.
121 MEKH, Háztartási méretű kiserőművek darabszáma és beépített teljesítménye (The number and capacity of small household power plants).
122 413/2022. (X. 26.) Government decree.
123 112/2023. (III. 31.) Decree
124 461/2023. (X. 5.) Government Decree on the amendment of the executing 112/2023. (III. 31.) Government Decree of 413/2022. (X. 26.) Government Decree on the termination of the temporary suspension of the possibility of feeding small household power plants into the public grid on the issues of feeding small household power plants into the public grid during emergency situations.

also amended—amid EU pressure—introducing a gross accounting system where the purchased amount is billed in total while the consumer can request to have the produced amount accounted.[125] Balance sheet accounting was not completely abolished. It remained applicable for those with household-size small power plants no more than ten years old, as well as for those who had applied by 7 September 2023, provided the plant will be put into service by 1 January 2026 at the latest. In essence, the problems associated with these plants were also being resolved.

4. Conclusion

As seen from this overview, the rules for establishing electricity-generating plants have changed significantly over the years. The initial attempts by Hungary to regulate the sector and establish rules for creating new generating capacities were ahead of their time, with provisions such as distinguishing between public and private plants and detailed rules on licensing procedures. The period following the World War II was characterised by a very different economic and social approach. Subsequently, the state established new electricity-generating capacities. Following the regime change, it was evident that capital was lacking in the energy sector; thus, paving the way for the involvement of the private sector. Throughout the development of the legislation following the regime change, two issues significantly shaped the rules for establishing generating capacities. First, shortly after the regime change, significant developments emerged at the European level with the first energy package. The packages, even before Hungary's member state status, have heavily influenced national legislation and, specifically, licensing procedures with measures such as the default use of authorisation procedures in establishing new generating capacities. The second factor that shaped the construction of new capacities is the reduction of the role of the state in the process. Initial attempts at regulating the establishment procedure heavily relied on the central position of the state. However, by 2007, Hungary has reached a point where the establishment of generating capacity was predominantly a business decision, and the state had taken a step back. Notwithstanding this development, in some cases, as with the solar plants the state still intervenes in the procedure in the interest of the whole electricity system.

125 680/2023. (XII. 29.) Government Decree amending the 273/2007. (X. 19.) Government Decree on the execution of certain provisions of the 2007. LXXXVI. Act on Electricity, and amending the 243/2019. (X. 22.) Government Decree on certain aspects of the electromobility service.

Bibliography

- Antal, I. (2014) *A magyar villamosenergia-ipar 1896–1914.* (The Hungarian electricity industry 1896-1914) Magyar Tudománytörténeti Intézet, Budapest.
- Árva, Zs., Nagy, Z., Pump, J., Varju, M. (2016) 'Hálózatosság és Határai: Villamosenergia-ellátási Közszolgáltatás' (Network and Borders: public electricity supply) in Horváth, M.T., Bartha I. (eds.) *Közszolgáltatások Megszervezése és Politikái*, Dialóg Campus Kiadó, pp. 193–245.
- Brzózka, Á. (2012) 'A magyar villamosenergia-piac és a liberalizációs folyamat anomáliái' (The Hungarian electricity market and anomalies in the liberalisation process) in Hámori, B., Vajda, B., Tóth, L., Derecskei, A., Prónay, Sz. (eds.) *Érzelmek és indulatok a gazdaságban: a gazdasági szereplők viselkedésének sajátosságai a döntésekben és folyamatokban*, Szeged: Szegedi Tudományegyetem Gazdaságtudományi Kar, pp. 29–40.
- Eckert, V., Sims, T. (2022) *Energy crisis fuels coal comeback in Germany* [Online]. Available at: https://www.reuters.com/markets/commodities/energy-crisis-fuels-coal-comeback-germany-2022-12-16/ (Accessed: 20 December 2023)
- Eikeland, P.O. (2011) 'EU Internal Energy Market Policy: Achievements and Hurdles' in Birchfield, V.L., Duffield, J.S. (eds.) *Toward a Common European Union Energy Policy: Problems, Progress, and Prospects*, Palgrave Macmillan pp. 13–40.
- Energiaklub, (2023) *Véleményünk a szélerőművek társadalmi egyeztetésre bocsátott szabályozásáról*, (Our opinion on the draft regulation on wind power submitted for public consultation) [Online]. Available at: https://energiaklub.hu/hirek/velemenyunk-a-szeleromuvek-tarsadalmi-egyeztetesre-bocsatott-szabalyozasarol-5187 (Accessed: 20 Dec 2023).
- Fazekas, O., Németh, A. (2022) 'A villamosenergia-piac működési modellje' (Operating model of the electricity market) in Fazekas, O. (ed.) *A Magyar Villamosenergia-szektor Működése és Szabályozása II.*, Budapest: ORAC Kiadó, pp. 91–110.
- Gerse, K. (1994) 'A magyar villamosenergia-rendszer' (The Hungarian electricity system), *Iskolakultúra*, 1994/17, pp. 75–87.
- *gyáripar államosítása).* (After regime change and elite replacement (70 years after the nationalisation of the Hungarian industry)) MTA Közgazdaság- és Regionális Tudományi Kutatóközpont Közgazdaság-tudományi Intézet, Budapest.
- Halkovics, L. (1998) 'Államosítások az iparban' (Nationalisations in the industry) in Tarsoly, I. (ed.) *II. KÖTET Természeti környezet, népesség és társadalom, egyházak és felekezetek, gazdaság,* Babits kiadó, p. 580.
- Heffron, R.J. (2021) *Energy Law: An introduction*. Springer; DOI 10.1007/978-3-319-14191-6
- IAE (2022) *World Energy Outlook* 2022, IAE, Paris.
- Johnston, A., Block, G. (2012) *EU Energy Law*. Oxford University Press.

- Kerekes, L., Szörényi, G., Diallo, A. (2019) 'Volt és van feszültség: A villamosenergia-szektor szabályozásának fordulópontjai Magyarországon' (There was and there is voltage: the turning points of electricity sector regulation in Hungary), Vezetéstudomány Budapest Management Review, 50(KSZ), pp. 4–18. https://doi.org/10.14267/VEZTUD.2019.KSZ.02.
- Kerényi, A.Ö. (1997) 'A magyarországi közcélú villamos-energia-szolgáltatás története' (History of public electricity supply in Hungary), *Iskolakultúra*, 7(5), pp. 121–130.
- Mihályi, P. (2018) *Rendszerváltás és elit csere után (70 éve történt a Magyarországi*
- Nagy, Cs.I. (2022) 'A villamos energia egyetemes szolgáltatás EU-jogi és magyar jogi vonatkozásai' (EU and Hungarian legal aspects of universal electricity service) in Fazekas, O. (ed.) *A Magyar Villamosenergia-szektor Működése és Szabályozása II.*, Budapest: ORAC Kiadó, pp. 285–308.
- Németh, K., Lázár, B. (2005) *Az Államosítás Előtt Működött Villamosenergia-ipari és Áramszolgáltató Vállalatok Repertóriuma*. (Repertory of Pre-Nationalisation Electricity and Transmission Companies) Magyar Országos Levéltár, Budapest.
- Rátky, M., Tóth M. (2022) A magyar energiaszektor tanulságai. (Lessons from the Hungarian energy sector) Akadémiai Kiadó. https://doi.org/10.1556/9789634547648. [Online]. Available at: https://mersz.hu/hivatkozas/m930amet_9_p2/#m930amet_9_p2 (Accessed: 12 October 2023).
- Stróbl, A. (2022) 'A villamosenergia-ellátás forrásoldalról, az erőművekről' (Electricity supply from the source side, from power plants) in Fazekas, O. (ed.) *A Magyar Villamosenergia-szektor Működése és Szabályozása II.*, Budapest: ORAC Kiadó, pp. 111–171.
- Szabó, M., Kovács, Gy., Debisso, K. (2018) 'Az Európai Unió Kialakulása, Jogrendszere és Intézményei' (The Development, Legal System and Institutions of the European Union) in Szabó, M., Debisso, K., Gyeney, L., Pünkösty, A. (eds.) *Az Európai unió Jogának Alapjai*, Pázmány Press, Budapest, pp. 19–245.
- Szilágyi, J.E. (2010) 'A villamos energia piac szabályozása' (Regulation of the electricity market) in Szilágyi, J.E. (ed.) *Környezetjog II. kötet Tanulmányok a környezetjogi gondolkodás köréből*, Miskolc: Novotni Alapítvány a Magánjog Fejlesztéséért, pp. 153–161.
- Szuchy, R. (2018) 'A magyar energiaszabályozás kezdetei, különös tekintettel a villamosenergia-piacra' (The beginnings of Hungarian energy regulation, with special reference to the electricity market), *Polgári Szemle*, 14(4-6), pp. 79–87. DOI: 10.24307/psz.2018.1206.
- Szuchy, R. (2021) 'The roots of electricity regulation in Hungary', *Economics & Working Capital*, issue 3-4, pp. 1–7.

- Tayyaba, R., Feng, W., Atif, A., Jingfei, Z. (2023) 'A cross-sectoral analysis of energy shortages in Pakistan: based on supply-driven input-output model', *Economic Research-Ekonomska Istraživanja*, 36(3), DOI: 10.1080/1331677X.2023.2186910
- Tóth, T. (2022) 'A megújuló energiaforrást hasznosító erőművek és az általuk termelt zöldáram szabályozása' (Regulation of renewable energy power plants and the green electricity they produce) in Fazekas, O. (ed.) *A Magyar Villamosenergia-szektor Működése és Szabályozása II.*, Budapest: ORAC Kiadó, pp. 395–441.
- Vince, P. (2007) 'Átalakuló szabályozás a villamosenergia-szolgáltatásban' (Changing regulation in electricity services) in Valentiny, P., Kiss, F.L. (eds.) *Verseny és Szabályozás*, MTA Közgazdaságtudományi Intézet, pp. 303–323.