

## **Contributions to the History of Public Lighting in Kolozsvár/Cluj**

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Author: László Fazakas

**The aim of this paper is to present the main stages in the introduction of public lighting to Kolozsvár/Cluj during the 19<sup>th</sup> and at the beginning of the 20<sup>th</sup> century.**

### **An overview of the situation in Hungary**

Public lighting made its first appearances in Hungary at the beginning of the 19<sup>th</sup> century, originally prompted by public safety reasons. Nevertheless, the reasons for the introduction of public lighting were not only merely practical in nature. Since the second half of the 19<sup>th</sup> century, urban public lighting had begun to appear as a kind of status symbol. It counted among the first visible signs of urban civilisation and of the fact that a settlement had embarked on the process of development and progress.<sup>[1]</sup>

According to the 1910 statistical data, the Hungarian city with the longest history of public lighting usage was Miskolc, where it was introduced as early as 1839 (although, according to alternative sources, public lighting had previously existed in some form in Buda since 1777 and since 1796 in Pest as well).<sup>[2]</sup> Until the 1870s, kerosene was most widely used for lighting. Later, it was substituted with coal gas, also known in Hungarian as *légszesz* (“*air spirits*”), obtained through the distillation of coal. Gas lighting was invented by the Scotsman William Murdoch<sup>[3]</sup>, who first used this method in 1798. However, gas lighting had started to spread in Hungary only by the middle of the 19<sup>th</sup> century. The first gasworks of Hungary were erected in 1856 in Pozsony (Bratislava), followed by Temesvár (Timișoara) in 1857 and by Pest, as well as a by growing number of rural towns in later years.<sup>[4]</sup> Gas lighting was still used in 20 urban counties and 7 urban districts in 1910, although not exclusively but, in combination with electric and kerosene lighting in the urban counties. However, three of the urban districts still exclusively used gas lighting in 1910.<sup>[5]</sup>

Electric lighting made its appearance in the 1880s and 1890s. Temesvár was the first city worldwide to introduce electric lighting in 1884 to an area that included its entire territory.<sup>[6]</sup>

Electric lighting has been available in Karánsebes (Caransebeş) since 1887, in Budapest, Nagyvárad (Oradea), and Szatmárnémeti (Satu-Mare) since 1893, in Máramarossziget (Sighetu Marmatei) since 1894, in Szeged since 1895, and in Marosvásárhely (Târgu Mureş) since 1898.<sup>[7]</sup> In 1910 almost all (22) urban areas of the all counties and two thirds of the urban districts (72) already benefitted from the usage of electric public lighting.<sup>[8]</sup> Only four years later, in 1914, over 300 Hungarian settlements had their own power plants, 100 of which were cities.<sup>[9]</sup>

### **The beginnings of public lighting in Kolozsvár**

Although it can hardly be considered appropriate ‘public lighting’ in the conventional sense of the word the first two public lamps were installed in 1808 in front of the guardhouse of the Nagy Piac (“Big Market Square”). Their installation was ordered by the Transylvanian Gubernium at the General Military Commando’s request. Subsequently, the City Council decided to expand public lighting to other parts of the city as well. By the end of December 1827, there could have been as many as 247 lamps spreading their light across the city. According to alternative sources, their number was only 60. The precise/actual figure is not known, however it may have been above 200. In 1828, the streets were illuminated with the help of 346 public lamps, for a total annual cost of 8.522 forints and 51 kreutzers.<sup>[10]</sup> Documents regarding the specific streets where public lighting was used are still missing, but the central part of the city was probably prioritised. The highest associated cost was that of vegetable oil needed for the lamps, due to which the city administration decided to lease out public lighting, which was subsequently awarded to dr. Szóts József in 1839 under 4-year contract worth 6.857 forints. Following the lease, an ever-increasing number of complaints were received due to the poor quality of the public lighting. Most complaints were over the fact that the lamps remained unlit, or were used in many places only for short periods, and also over the leaseholder skimping on lighting during nights with full moons.<sup>[11]</sup> In spite of the complaints, the city administration made renewed attempts to privatise public lighting, but ended up retaking complete charge of it in later years.<sup>[12]</sup> From the 1860s onwards, kerosene lighting already began to be used in Kolozsvár.

### **The gasworks of Kolozsvár**

In 1869, kerosene was substituted by coal gas, and the city administration contracted foreign entrepreneurs for the introduction of gas lighting.<sup>[13]</sup> During this period, most cities entrusted

the operation of their gasworks to private companies, primarily because their construction and operation would have been too expensive for the cities themselves.<sup>[14]</sup> The the troublesome nature of the relationships between the cities and their gasworks are also shown by the fact that, even in 1908, only a quarter of Hungarian gasworks were run by the cities.<sup>[15]</sup> In Kolozsvár, the contract granted a 30-year monopoly on public lighting to the gasworks.<sup>[16]</sup> The granting of such monopoly rights was a widespread practice. Similar contracts were signed in Nagyvárad, Szeged, and Szombathely.<sup>[17]</sup> In 1890, a new contract was signed, extending the original agreement from 1869 for a further 30 years. This ensured the monopoly of the gasworks until 1920. Nevertheless, the city administration was looking for an opportunity to terminate this contract and to introduce electric lighting already at the beginning of the 1900s.<sup>[18]</sup> Although, at first glance, these 30 years might seem like quite a long time, Kolozsvár's contract was in fact relatively short-termed compared to those of other cities. According to statistical data from 1910, only Budapest's gas contract was even shorter than Kolozsvár's, stipulating a monopoly period of 15 years, while 7 cities had 50-year, and 4 cities even 75-year contracts. Győr and Arad have signed even less favourable contracts, for 80 and 90 years, respectively.<sup>[19]</sup>

The Kolozsvár gasworks were constructed in 1871. The average annual amount of the hard coal processed here was 838.789 kg, producing 225.877 cubic meters of lighting gas.<sup>[20]</sup> According to the 1878 report of the Kolozsvár Chamber of Commerce and Industry, the city's coal gas consumption decreased year by year due to high gas prices and unfavourable financial years.<sup>[21]</sup> Finally, from the middle of the 1880s onwards, this shifted to a tendency of continuous increase<sup>[22]</sup>, reaching its height at the beginning of the 1900s, when gas began to be produced in an annual quantity of 1.000.000 cubic meters.<sup>[23]</sup>

### **Interests and conflicts around the gasworks**

During the following years, the local gasworks were surrounded by scandals. Several critics raised their voices against the monopoly of the gasworks and the poor gas quality. Gas pipe cracks and gas poisonings have become increasingly frequent, which further increased the dissatisfaction of the citizens. In 1890, two unconscious workers had to be transported to the hospital due to a gas poisoning after a pipe crack.<sup>[24]</sup> A further gas poisoning in January 1894 also sparked great outrage. This time, three people got into a life-threatening condition, one of whom died.<sup>[25]</sup> The discontent had also been fuelled by the extremely high gas prices paid by the citizens, amounting to 21 kreutzers per cubic meter.<sup>[26]</sup> According to a contemporary calculation, Kolozsvár had one of the highest gas prices of all Hungarian cities.<sup>[27]</sup> This circumstance was among the contributing factors of the 'electrification movement' initiated by the citizens in 1894. This initiative aimed to eliminate the population's dependency upon the

gasworks and pressure the city administration to introduce electricity.<sup>[28]</sup> As the issue escalated, the municipal council was forced to take measures. Thus, at its June meeting, it decided to set up a specialist committee dedicated to the permanent supervision of the coal gas supplied by the gasworks.<sup>[29]</sup>

In 1897, the gasworks were acquired by the Belgian entrepreneur Georgi Charles.<sup>[30]</sup> The new owner was notorious for having been involved in illegal affairs, known as the “Romanian Panama” or the 1895 Brenning-trial from Galați. According to the charges, the mayor’s office was bribed by the gas company, and the Belgian was also involved in this affair.<sup>[31]</sup> The Kolozsvár gasworks’ change of ownership did not bring about any financial or qualitative improvements. According to the 1904 report of the *Kolozsvári Hírlap*, the control committee set up by the city council declared that, in breach of its contract, the gasworks charged excessively high prices between 1890 and 1902 per cubic meter of gas.<sup>[32]</sup>

As we have seen, the relationship between the city administration and the gasworks was quite complicated. While in the 1890s no serious action was taken against the gasworks, the 1900s brought a radical turn of events. Many of our sources show evidence of the high gas prices and of the frequent complaints published in the press because of these costs. But why were the prices so high? And why was there no intervention by the city management in order to reduce them? It is also suspicious that the two previously mentioned gasworks accidents (1890, 1894) sparked more thorough discussion only within the press, and no statements of the representatives regarding any of these two cases are to be found in the minutes of the municipal commission’s general meetings. The 1897 change of ownership is also problematic, since the gasworks were acquired by someone previously involved in a corruption case at a similar establishment. Although it cannot be definitely stated, our sources suggest the existence of a relation based on economic interests between a narrower layer of the city administration and the gasworks.

### **The introduction of electric lighting**

Attempts were made as early as the 1800s to introduce electric lighting to Kolozsvár, but failed due to various reasons. According to our press sources, one of these unsuccessful initiatives was the first “electrisation movement”, during which university teachers presented a study proving that, with the appropriate equipment, the driving force of the Kis-Szamos (Little Szamos) river would be able to produce electricity. However, as the research director<sup>[33]</sup> was called to Budapest to take the leadership of the Állami Mechanikai Tanműhely (State Workshop of Mechanics), the researches were interrupted.<sup>[34]</sup> Unfortunately, our extant sources do not

allow for establishing the purpose with which the electrification movement was initiated, nor the identity of those behind it and their vision. Nevertheless, it can be presumed that their researches in the generation of electricity were directed at industrial uses and not primarily at solving the issue of public lighting.

The idea of using electricity for public lighting purposes gained more serious consideration only toward the end of the 1890s. In 1897, there were already three tenderers submitting proposals for the introduction of electricity: the Kolozsvár Public Railroad Limited Company, a private entrepreneur by the name of Horowitz Sámuel, and Georgi Charles, who acquired ownership of the gasworks in the same year.<sup>[35]</sup> This action of the latter proved to be rather interesting and, at the same time, difficult to interpret, since the introduction of electricity was hardly in his interest, as it would have meant the loss of monopoly for the gasworks and the endangerment of Charles' most recent enterprise. Information about the background of his proposals is lacking, but one can assume that he must have thought that the only way to avoid the crisis of the gasworks is for him to acquire the right for the introduction of electricity. Be that as it may, the city administration soon broke off the negotiations with all three tenderers.

In 1899, Mandel Pál<sup>[36]</sup> and Szájbély Gyula<sup>[37]</sup> informed the city administration about their plan to establish an electric plant in Hidegszamos. Their project was refused by the city's councilmen. Thus, they declared on June 28, 1900 that their plan is to introduce electricity to the city based on a public tender procedure, but only if the gasworks should refuse to comply with one of the conditions of the 1890 supplementary contract, according to which, *“if three urban counties of Hungary, including Budapest, shall introduce and commonly implement (...) electric lighting, or lighting of any other kind that is superior to the use of coal gas, during the contract period (...), the owners of the gasworks will be required to introduce, at the city's request, at any time from 1901 onwards (...), electric lighting, or this other kind of lighting that is superior to the use of coal gas, at the price at which another contractor would be willing to introduce it.”*<sup>[38]</sup> Indeed, in 1901, there were more than three urban counties with a public lighting system superior to the use of coal gas. Hence, according to the contract, the city administration of Kolozsvár had the right to call upon the gasworks to introduce electricity to the city. Since the gasworks refused to comply, the contract authorised the city administration to publish a public tender. Due to the scarcity of the sources, it is not possible to know why the gasworks refused to introduce electricity. The biggest difficulty was presumably caused by the contract provision according to which they would have been obliged to introduce electricity at the price undertaken by another contractor. As the primary function of the gasworks consisted, as a matter of course, in supplying coal gas for the city, they could hardly have had the necessary technological means and expertise to introduce electricity to Kolozsvár. In other words, if the gasworks had undertaken to comply with the contract provision, it would have been forced not

only to acquire the necessary equipment, but also to employ the needed specialists, which would have amounted to enormous additional costs. However, there could have been other additional reasons as well.

The public tender, published by the city administration in September 1902, was unsuccessful: there were no bidders. Thus, the city put the introduction of electricity out to tender again in March 1903. This time, six companies applied for the tender: Ganz és Társa (Ganz and his Associate), Siemens és Halske (Siemens and Halske), Magyar Schukert Művek (Hungarian Schukert Works), Egyesült Villamossági Részvénytársaság (United Electric Company Ltd.), Hazai Villamossági Részvénytársaság (Hungarian Electric Company Ltd.), and the private entrepreneur Popper István. Wittmann Ferenc and Bogdánffy Ödön, professors at the University of Technology, and Hollós József, principal advisor on technology, were called upon to give their professional opinion on the proposals. After the consultation, the administration of the urban municipality accepted the tender of Ganz and his Associate, with whom it signed the contract in July 1904.<sup>[39]</sup> The hydroelectric power plant was handed over in 1906 and it cost 1.9 million koronas.<sup>[40]</sup> In the same year, electric lighting was introduced to 218 streets of this city<sup>[41]</sup>. In 1908, there were already 26.458 light bulbs in use in the private homes of Kolozsvár.<sup>[42]</sup>

## Conclusion

The introduction of modern and safe public lighting to Kolozsvár took serious effort. One of the obstacles was the gasworks from this city, which has acquired monopoly rights for providing public lighting and did everything in its power to protect its own economic interests and to prevent the introduction of electric lighting. Over time, the accidents caused by the gasworks' irresponsibility, the gas poisonings and the poor quality of the supplied coal gas, have led to the dissatisfaction of the city's inhabitants. The situation changed by the beginning of the 1900s, as more and more entrepreneurs proposed to introduce electric lighting to the city, which put pressure both on the gasworks and on the city administration; on the latter, primarily because several Hungarian cities already had electric public lighting, providing evidence that Kolozsvár was lagging behind. Finally, by 1906, Ganz and his Associate successfully completed the construction of the hydroelectric power plant, which began its operation in the same year. If, however, we take also into account that electric lighting had already arrived in 1884 to Temesvár, followed by Szatmárnémeti and Nagyvárad in 1893, then Kolozsvár's "backwardness" in this respect, due both to its unfavourable contract with the city gasworks and to the incompetence of the city's representatives, is quite striking.

## Notes

- [1] Pál Judit, *Városfejlődés a Székelyföldön 1750-1914* [Urban development in the Székely Land] (Csíkszereda: Pro-Print, 2003), 426; Fábrián Borbála, „A közvilágítási norma: az utcavilágítás mint társadalmi elvárás a 19. századi magyarországi városokban” [The norm of public lighting: street lighting as social expectation in 19th century Hungarian towns], *Urbs* 9, no. 9 (2014): 192.
- [2] *Magyarország városainak háztartása az 1910. évben* [Urban management in the Hungarian cities of the 1910s] (Budapest: Magyar Kir. Központi Statisztikai Hivatal, Atheaneum Rt., 1916), 27.
- [3] William Murdoch (August 21, 1754 – November 15, 1839) was a Scottish engineer and inventor.
- [4] Egyed Ákos, *Falu, város, civilizáció* [Village, city, civilization] (Bukarest: Kriterion, 2002), 241; Melega Miklós, A modern város születése. Szombathely infrastrukturális fejlődése a dualizmus korában [Birth of a modern city: The infrastructural development of Szombathely in the age of the Austro-Hungarian Empire] (Szombathely: Archívum Comitatus Castriferrei 5. Vas Megyei Levéltár, 2012), 24–25.
- [5] *Magyarország városainak háztartása az 1910. évben*, 27.
- [6] Melega, *A modern város születése*, 24–25.
- [7] Pölöskei Ferenc, „Kolozsvár a századfordulón” [Kolozsvár at the turn of the century], in *Kolozsvár 1000 éve*. ed. Dáné Tibor Kálmán et al. (Kolozsvár, Erdélyi Múzeum Egyesület, Magyar Közművelődési Egyesület, 2001), 192; Egyed, *Falu, város, civilizáció*, 241.
- [8] *Magyarország városainak háztartása az 1910. évben*, 27.
- [9] Melega, *A modern város születése*, 26.
- [10] Pataki Jenő, „A régi Kolozsvár. A város uttzái és piatzok éjjeli megvilágítása” [The old Kolozsvár: Night lighting of the city’s streets and squares], *Kolozsvári Szemle* 2, no. 2 (1943): 147–150.
- [11] This was the case not only in Cluj-Napoca. Other cities also saved lighting costs during full moons.
- [12] Pataki Jenő, „A régi Kolozsvár. A város uttzái és piatzok éjjeli megvilágítása”, 147–150.

- [13] The owners of the gas work were the Vienna citizen Fährndrich Gusztáv, Oechelhauser Fülöp Ottó, Berlin citizen, and Oechelhauser Vilmos, citizen of Dessau. *Központi Értesítő*, January 26, 1877.
- [14] Sipos András, „Olaj, petróleum, gáz: lakás és közvilágítás a múlt században” [Oil, kerosene, gas: habitation and lighting in the 19<sup>th</sup> century], *História* 14, no. 1 (1992): 29–30.
- [15] Pál Judit, „Urban development and infrastructure in Transylvanian cities in the dualist period”, in *The spatial planning in south-eastern Europe (until the second World War)*. ed. Bojana Miljkovic-Katic (Belgrade, 2011), 204.
- [16] Benyó Albin, „A kolozsvári villamos vízerőtelep” [The hydroelectric power plant of Kolozsvár], *Vízügyi Közlemények* 3, no. 1 (1913): 85–86.
- [17] Melega, *A modern város születése*, 157.; „Szeged világítása” [Public lighting in Szeged], *Budapesti Hírlap*, March 11, 1894., Péter I. Zoltán, „A gázvilágítás bevezetése Nagyváradra” [The introduction of gaslighting in Nagyvárad], [Várad](#).
- [18] Benyó, „A kolozsvári villamos vízerőtelep”, 85.
- [19] *Magyarország városainak háztartása az 1910. évben*, 30.
- [20] *A Kolozsvári Kereskedelmi és Iparkamara jelentése kerülete gazdasági, kereskedelmi, ipari és forgalmi viszonyairól 1878-ban* [The report of the Kolozsvár Chamber of Commerce and Industry on the economic, commercial, industrial, and traffic conditions of its district in 1878] (Kolozsvár: A Kereskedelmi és Iparkamara, 1879), 189-190.
- [21] *Ibid.*, 190.
- [22] „A villamos világítás Kolozsvárt” [Public lighting in Kolozsvár], *Ellenzék*, January 26, 1895.
- [23] Egyed Ákos, „A korszerűsödő Kolozsvár három évtizede (1867–1900)” [Three decades of Kolozsvár on its way to modernisation (1867-1900)], in *Rendi társadalom - Polgári társadalom 7. Kőfallal, sárpalánkkal*, ed. Németh Zsófia – Sasfi Csaba (Debrecen: Hajnal István Kör – Csokonai Kiadó, 1997), 112.
- [24] „Gázmérgezés” [Gas poisoning], *Pesti Hírlap*, 21 December 1890.
- [25] „Tömeges gázmérgezés Kolozsváron” [Mass gas poisoning in Kolozsvár], *Ellenzék*, January 10, 1894.
- [26] *A Kolozsvári Kereskedelmi és Iparkamara jelentése 1878-ban*. 190.



- [27] Benyó, „A kolozsvári villamos vízerőtelep”, 85.
- [28] „Villamos világítás Kolozsváron” [Electric lighting in Kolozsvár], *Ellenzék*, January 13, 1894.
- [29] *Törvényhatósági Bizottsági Jegyzőkönyvek* [Minutes of the Municipal Commission Meetings]. Román Nemzeti Levéltár Kolozs Megyei Igazgatósága, Kolozsvár. Fond. 1., microfilm roll no. 174, document I. 94/1894, 121. f.
- [30] „A kolozsvári gázgyárat” [The Kolozsvár gas work], *Budapesti Hírlap*, January 16, 1897.
- [31] „Az oláh Panama” [The Romanian Panama], *Budapesti Hírlap*, August 15, 1895.
- [32] „A gázgyár” [The gas work], *Kolozsvári Hírlap*, May 3, 1904.
- [33] The researches were presumably led by Szüsz Nándor.
- [34] „A villamos világítás Kolozsvárt” [Electric lighting in Kolozsvár], *Ellenzék*, January 25, 1895.
- [35] „Villamos világítás és vasút” [Electric lighting and the railway], *Kolozsvár*, January 4, 1897.
- [36] Mandel Pál (January 6, 1839, Nyírbátor – February 7, 1908, Budapest), public prosecutor, parliament member.
- [37] Szájbély Gyula, entrepreneur, parliament member.
- [38] Benyó, „A kolozsvári villamos vízerőtelep”, 85–87.
- [39] Ibidem.
- [40] Straub Sándor, „Magyarország közcélra való elektromos áramfejlesztő telepei és elektromosan megvilágított helységei az 1906-ik év elején” [The public power supply plants and electrically illuminated localities of Hungary at the beginning of 1906], *Magyar Mérnök és Építész Egylet Közlönye* 40, no. 1-3. (1906): 168.
- [41] Killyéni András, „Polgári életvitel a dualizmus kori Kolozsváron (1867–1914)” [Kolozsvár bourgeois life in the age of the Austro-Hungarian Empire], *Szín* 17, no. 3 (2012): 57.
- [42] Egyed Ákos, „A korszerűsödő Kolozsvár három évtizede (1867–1900)”, 113.

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