



RESEARCH ARTICLE

City of lights, city of pylons: Infrastructures of illumination in colonial Hanoi, 1880s–1920s

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Abstract

This article traces the early stages of urban electrification in the French protectorate of Tonkin (in Vietnam's north) from the late 1880s to the late 1920s. It focuses on Hanoi, where in 1895 the French entrepreneurs Hermenier and Planté secured a concession for lighting the streets of the soon-to-be capital of French Indochina. Before long, the city's fast-paced development and the concomitant rise in demand for both public and private lighting necessitated contractual amendments and further capital investment in the upgrading of the power station and grid extensions. In 1902, Hermenier converted the business into a joint stock company named the Société Indochinoise d'Électricité with the aim of enabling further growth and geographical expansion. Contractual arrangements were frequently renegotiated and adjusted to new circumstances. However, electricity supplies kept lagging behind the fast pace of demand growth. During the post-First World War years of colonial economic expansion, power failures and blackouts became a routine occurrence and were a frequent target of press coverage. It was only in the late 1920s that electricity supplies improved and turned Hanoi into a city of lights. Although the majority of Vietnamese residents remained excluded from private electricity access throughout the colonial period, electric power quickly became a fact of everyday life for an emerging Vietnamese urban bourgeoisie and served as a marker of modern sophistication. Plans for an interconnected distribution network in the Tonkin delta subsequently also triggered hopes for an electrified future for the countryside.

Keywords: Hanoi; electrification; lighting; infrastructure; French colonialism

Introduction

On 18 October 1886, the freshly appointed French resident-general of Annam and Tonkin, Paul Bert, wrote a letter to Marcel Deprez, an electrical engineer who conducted experimental studies on the long-distance transmission of electrical power. In view of the deep darkness that enveloped Hanoi at night, Bert asked Deprez for his opinion on the feasibility and potential costs of using the Red River to produce light. 'Think about it,' he urged Deprez. 'If we were successful, we would be ahead of England

and even Japan!¹ Bert's rather visionary idea was not pursued any further, not least because he died of dysentery less than a month later. The letter eventually found its way to the Académie des Sciences in Paris where it was discussed during a meeting in January 1887.² 'Why think about electric lighting in Hanoi when Paris is still lit with gas?', one of the members present asked. 'The one does not preclude the other,' Joseph Bertrand, the academy's permanent secretary, wryly pointed out. 'But then why do we absolutely want to bring the Tonkinese out of their darkness?', the man probed further. Bertrand looked at him thoughtfully and said: 'Because it is always good to spread the light.'³

What could be more obvious than to frame the spread of modern (electric) lighting technologies to the overseas colonies of Western imperial powers within a rhetoric of providing the colonized with civilizing enlightenment? The French were not alone in this endeavour.⁴ The British, too, felt 'tasked with bringing light into the benighted corners of the world' and mapped their conquered territories in terms of 'cities of light' and 'hearts of darkness' even before the dawn of electric lighting.⁵ In the late nineteenth century this rhetoric was supported by the material emergence of lighting infrastructures, along with the arrival of electricity and other 'tentacles of progress'⁶ in the colonies. Yet, despite its transformative effects on societies, electrification in the colonial era has thus far received little scholarly attention.⁷ The literature on French Vietnam typically glosses over the introduction of electricity and the subsequent

¹Translated from *Les annales politiques et littéraires*, 30 January 1897, p. 74.

²Paul Bert was himself a renowned scientist and became a member of the Académie des Sciences in 1882, which is why his letters were archived at the academy.

³Conversational quotes translated from *Comptes rendus hebdomadaires des séances de l'académie des sciences*, nr. 1 (January 1887), p. 34. It was decided that the letter would be deposited in the archives.

⁴See Ute Hasenöhr, 'Rural electrification in the British empire', *History of Retailing and Consumption*, vol. 4, nr. 1, 2018, pp. 10–27; Niharika Dinkar, *Empires of light: vision, visibility and power in colonial India* (Manchester: Manchester University Press, 2019).

⁵Dinkar, *Empires of light*, p. 2.

⁶Daniel R. Headrick, *The tentacles of progress. Technology transfer in the age of imperialism, 1850–1940* (New York and Oxford: Oxford University Press, 1988).

⁷Exceptions include the pioneering study of Moses Chikowero, 'Subalterning currents: electrification and power politics in Bulawayo, colonial Zimbabwe, 1894–1939', *Journal of Southern African Studies*, vol. 33, nr. 2, 2007, pp. 287–306. The electrification of colonial India has been studied by both historians and anthropologists; see Leo Coleman, *A moral technology: electrification as political ritual in New Delhi* (Ithaca: Cornell University Press, 2017); Hasenöhr, 'Rural electrification'; Suvobrata Sakar, *Let there be light: engineering, entrepreneurship and electricity in colonial Bengal, 1880–1945* (Cambridge: Cambridge University Press, 2020); Sunila S. Kale, *Electrifying India: regional political economies of development* (Stanford: Stanford University Press, 2014). Shamir offers insights into the electrification of British-ruled Palestine during the 1920s; see Ronen Shamir, *Current flow: the electrification of Palestine* (Stanford: Stanford University Press, 2013). In contrast to the paucity of scholarship on colonial electrification, the history of electrification in Western societies has so far been examined most extensively. Hughes, for example, utilizes a comparative framework to explore how electric systems evolved in the United States, Great Britain, and Germany in the late nineteenth and early twentieth centuries; see Thomas P. Hughes, *Networks of power: electrification in western society, 1880–1930* (Baltimore and London: Johns Hopkins University Press, 1983). Other historians looked into the ways in which electricity was 'domesticated' at the household level and how it permeated and changed people's everyday lives, for example: Graeme Gooday, *Domesticating electricity: technology, uncertainty and gender, 1880–1914* (London: Pickering and Chatto, 2008), and David E. Nye, *Electrifying America: social meanings of a new technology* (Cambridge, MA: MIT Press, 1990).

expansion of power grids in just a few sentences. Hugues Tertrais explains this neglect by suggesting that ‘the immaterial form of this mode of energy provision made it so natural that it was forgotten’.⁸ This reasoning is well in line with the common assumption in science and technology studies (STS) that infrastructures are mostly taken for granted and become visible and manifest in our conscious awareness only when they break down or fail to work efficiently.⁹

In the early years of French colonial rule in Vietnam, however, new infrastructural technologies were anything but invisible. First, as in other colonial settings, they were part of political spectacle and served to evoke in the colonized feelings of awe vis-à-vis ‘the superiority and power of colonial rule and the world of science and technological expertise it represented’.¹⁰ Second, electrification visibly transformed the urban public realm: the billowing smokestacks of centrally located power plants towered high above residential buildings, an ever-increasing number of iron pylons dotted the cityscapes, and overhead cables crisscrossed the streets and sidewalks. Third, in the early 1900s, the demand for electricity routinely exceeded the available supply and subscribers were plagued by power failures and breakdowns. Whereas the network’s inadequacies (and, to a lesser extent, its unpleasant aesthetics) were commented upon and complained about in the French colonial press, wide-eyed amazement hardly played a role in news reporting. As David Nye has observed for the United States, new technologies usually lose their awe-inspiring appeal as they find their way into people’s everyday lives and practices.¹¹ A similar dynamic unfolded in colonial Vietnam. Even though the majority of Vietnamese residents remained excluded from private access to electricity throughout the colonial period, electrically powered conveniences and appliances quickly became a fact of everyday life for the emerging Vietnamese urban bourgeoisie and indicated their modern sophistication vis-à-vis their rural compatriots.

For the colonizing powers, infrastructural technologies were primarily an important source of speculation and profit making.¹² In French Indochina, large-scale infrastructure projects served to foster colonial interests and were focused on the construction of roads, bridges, ports, railways, and other works deemed as necessary

⁸Hugues Tertrais, ‘L’électrification de l’Indochine’, *Outre-mers*, vol. 89, nr. 334–335, 2002, pp. 589–600 (here: p. 589). Tertrais’ article is the only contemporary treatment of the subject in a Western language. Vietnam Electricity (EVN) traces the development of Vietnam’s energy sector in a three-volume work in Vietnamese; for the early years of electrification, see EVN, *Ngành điện Việt nam. Biên niên sự kiện—tư liệu, tập 1 (1894–1995)* [Vietnam’s electricity sector. Chronicle of events—documents, Volume 1 (1894–1995)] (Hanoi: NXB Chính Trị Quốc Gia-Sự Thật, 2014).

⁹Susan Leigh Star, ‘The ethnography of infrastructure’, *American Behavioral Scientist*, vol. 43, nr. 3, 1999, pp. 377–391.

¹⁰Brian Larkin, *Signal and noise; media, infrastructure and urban culture in Nigeria* (Durham and London: Duke University Press, 2008); see also Christina Schwenkel, ‘Spectacular infrastructure and its breakdown in socialist Vietnam’, *American Ethnologist*, vol. 42, nr. 3, 2015, pp. 520–534.

¹¹David E. Nye, *American technological sublime* (Cambridge, MA and London: MIT Press, 1994), p. 60.

¹²Suvobrata Sakar, ‘The electrification of colonial Calcutta: role of the innovators, bureaucrats and foreign business organization, 1880–1940’, *Studies in History*, vol. 34, nr. 1, 2017, pp. 48–76 (here: p. 49); Laura Bear, ‘Speculations on infrastructure: from colonial public works to a post-colonial global asset class on the Indian railways 1840–2017’, *Economy and Society*, vol. 49, nr. 1, 2020, pp. 45–70.

for the economic development of the colony.¹³ These public works (*travaux publics*) reached far into the region's hinterlands, enabled control over resources, and facilitated the movement of people and goods. They were financed through loans from France as well as from the colonial government's general budget derived from indirect forms of taxation and through local provincial budgets funded from direct taxes.¹⁴

In contrast to these publicly funded infrastructure projects, the provision of electric lighting, as well as water supplies and sanitation, were typically granted as concessions to private enterprises and categorized as urban works (*travaux urbains*) aimed at improving residential living conditions.¹⁵ This did not mean that they were left entirely in the hands of the private sector. As government-issued contracts, concession agreements were a form of indirect management that 'put statist visions of development into harness with the private pursuit of profit'.¹⁶ Contractual details and amendments were subject to intense discussions between concessioners and colonial administrators and generated long paper trails that allow for a detailed insight into the bureaucratic intricacies of colonial-era urban development.

This article traces the early stages of urban electrification in the French protectorate of Tonkin (present-day northern Vietnam) from the late 1880s to the late 1920s

¹³Hydraulic works such as irrigation systems, artificial dams and dykes, and canal networks were also important, but less capital intensive than road and railway construction; see A. A. Pouyane, *Les travaux publics de L'Indochine* (Hanoi: Imprimerie D'Extreme-Orient, 1926); Pierre Brocheux and Daniel Hémerly, *Indochina: an ambiguous colonization, 1858-1954* (Berkeley: University of California Press, 2010). On road development, see Stéphanie Ponsavady, *Cultural and literary representations of the automobile in French Indochina: a colonial roadshow* (Cham: Palgrave Macmillan, 2018); for a study of railway construction, see David W. Del Testa, 'Paint the trains red: labor, nationalism, and the railroads in French colonial Indochina, 1898-1945', PhD thesis, University of California, Davis, 2001.

¹⁴See Montserrat López Jerez, 'Colonial and indigenous institutions in the fiscal development of French Indochina', in *Fiscal capacity and the colonial state in Asia and Africa, 1850-1960*, (eds) Ewout Frankema and Anne Booth (Cambridge: Cambridge University Press, 2019), pp. 110-136. Loans apparently dominated until 1912; after that, infrastructure development was funded by the general budget and most of all by local budgets; see Pouyane, *Les travaux publics*, Annex: table nr. 7 and chart of expenditures for public works on the accounts of various budgets, 1900-1925.

¹⁵In nineteenth-century metropolitan France, concessions for public works were common because local governments preferred not to execute large investments directly; see Dominique Barjot, 'Public utilities and private initiative: the French concession model in historical perspective', *Business History*, vol. 53, nr. 5, 2011, pp. 782-800; see also Robert Millward, 'European governments and the infrastructure industries, c. 1840-1914', *European Review of Economic History*, vol. 8, nr. 1, 2004, pp. 3-28; Laurent Dubois de Carratier, 'Le conseil d'état, l'économie et le service public: concessions et services publics industriels et commerciaux (années 1880-1950)', *Revue d'Histoire Moderne et Contemporaine*, vol. 52, nr. 3, 2005, pp. 51-74.

¹⁶Cyrus Veese, 'A forgotten instrument of global capitalism? International concessions, 1870-1930', *The International History Review*, vol. 35, nr. 5, 2013, pp. 1136-1155 (here: p. 1149). Lucrative concessions and monopolies also formed the basis for colonial capitalism in French Indochina; for an account of the Cochinchinese business community, see Gilles de Gantès, 'Le particularisme des milieux d'affaires cochinchinois (1860-1910): comment intégrer un comptoir asiatique à un empire colonial protégé', in *L'esprit économique impérial (1830-1970). Groupes de pression et réseaux du patronat colonial en France & dans l'empire*, (eds) Hubert Bonin, Catherine Hodeir and Jean-François Klein (Paris: Société française d'histoire d'outre-mer, 2008), pp. 735-754. Gerard Sasges' excellent study of the alcohol monopoly in French Indochina provides a detailed and multifaceted account of the collusion between capitalist enterprise and the French colonial administration; see Gerard Sasges, *Imperial intoxication: alcohol and the making of colonial Indochina* (Honolulu: University of Hawai'i Press, 2017).

through archival documents and media reports.¹⁷ It focuses on the city of Hanoi to illustrate the ways in which colonial electrification gradually unfolded over the course of three decades, involving complex negotiations and renegotiations about the forms of agreement (concession or *régie intéressée*), its duration, electricity tariffs, and profit-sharing schemes (see Table 1). The article's first part details the initial stages of street lighting in Hanoi and how the advent of electricity was discussed in the French colonial press. The next section analyses a fictitious legend about the origins of electric light as an imaginative example of how the French constructed an Orientalized image of the Vietnamese and their alleged view of magic 'Western' science and technology. This image is juxtaposed with a contemporaneous example of how electric lighting and electricity were poetically construed by a Vietnamese writer. The third part charts Hanoi's fast development in the early years of the twentieth century and the concomitant rise in electricity demand. While the French colonial press condemned the resulting conglomerations of pylons and power cables as detrimental to Hanoi's aesthetic appearance, ruptures in the lighting grid increasingly posed a danger to the public, with risks unevenly distributed between French and Vietnamese residents. The fourth part elaborates on the evolution of contractual arrangements between the municipality of Hanoi and its electricity provider, the Société Indochinoise d'Électricité, in the early 1900s. The fifth part briefly addresses the situation during the so-called Great War and examines the challenges confronting the provider in light of the societal and economic changes of the 1920s. Despite technological improvements, electricity supplies kept lagging behind the fast growth in demand throughout this period. Power failures became a frequent subject of criticism and mockery in the French colonial press, whereas the newly emerging Vietnamese press approached the topic of electricity-enabled technological progress in a more general and positive manner. The final part charts the hopes and aspirations for an electrified future of colonial Vietnam triggered by the plans for a new central power plant in Hanoi and a new concession project for an interconnected distribution network in the Tonkin delta. Vietnamese residents by then already constituted the majority of subscribers, even though broader access to urban electricity remained constrained. Concomitantly, the 'light of the capital' drew ever more migrant labourers to the city in search of work and a better life.

¹⁷This article is based on research at the French Archives Nationales d'Outre-Mer in Aix-en-Provence (abbreviated as ANOM), the Vietnamese National Archives Centre N1 in Hanoi (abbreviated as VNAC1), and the national library of Vietnam in Hanoi. It also makes use of the digital library of the Bibliothèque nationale de France (BnF), the digital collection Thư Viện Người Việt, and the digital news archive RetroNews. The archival documents I was able to access mainly consist of 1) administrative reports and letters, 2) correspondence between colonial administrators and electricity-providing businesses, 3) contract drafts and revisions, draft amendments and revisions, and *cahiers des charges* (technical specifications), and 4) *procès-verbal* (proceedings) of the municipal council discussing all of the above. These documents do not contain information on the social and racial dimensions of electricity distribution, nor do they shed light on the provider company's internal affairs and strategies. French colonial newspapers, in turn, reflect 'the diverse and conflicting interests of a fractious colon community of businessmen, bureaucrats, missionaries, lawyers, soldiers, and teachers': Peter Zinoman, *Vietnamese colonial republican: the political vision of Vũ Trọng Phụng* (Berkeley: University of Los Angeles Press, 2014), p. 31. The critical media commentaries on electrification projects and concessions I refer to in this article must therefore be taken with a grain of salt, but nevertheless they provide a useful glimpse into the discourse surrounding electrification in late nineteenth- and early twentieth-century Hanoi.

Table 1. Contracts and concession agreements between Hermenier/the SIE and the City of Hanoi, 1892–1928

6 Dec 1892	<i>Contrat à l'Éclairage d'Électricité</i> Duration until 31 December 1912 Amendments: 4 April 1900 (duration extended until 31 December 1920); 13 January 1902 (city area extensions)
24 April 1912	<i>Traité</i> Duration until 31 December 1937 Continuation of concession until 31 December 1920 From January 1921: <i>régie intéressée</i> (various amendments)
15 May 1928	<i>Convention</i> Return to concession model, duration: 30 years Amendments: 8 November 1930, 27 November 1931

Lighting up the streets of Hanoi

Hanoi's first public street-lighting system came into operation during the late nineteenth century. By 1891 approximately 900 oil-powered street lights illuminated the city.¹⁸ The following year, the city council issued two separate tenders for the provision of additional street lighting equipment. One tender asked for 54 metal columns with *réverbère* copper lanterns to illuminate Hanoi's new 'European district' that accommodated the influx of French colonials, while the other invited bids for 500 wooden poles and zinc lanterns meant to brighten the nights in the *quartiers indigènes*, or 'native quarters', where the majority of the Vietnamese population lived.¹⁹ These street lights required lamplighters who ensured that the wicks were lit at 6 o'clock in the evening and burned steadily until 5.30 in the morning from October to February, and between 6.30 in the evening until 5 o'clock in the morning during the rest of the year. Street lighting contracts covered the entire city and were offered in annual tender procedures. In December 1892, Nguyen Cu Chang was awarded the contract for the year 1893 at two piaster-cents each for the 14-line circular wicks and 1.4 piaster-cents for the flat wicks per night. This sum also included all works necessary to keep the lanterns in a perfect state of cleanliness and maintenance.²⁰

During this time, however, negotiations for an electric lighting system were already well under way. On 12 April 1892, a week before the abovementioned tender for new street lamps in Hanoi opened, the resident-mayor of Haiphong, Frédéric Baille, awarded the concession to electrically illuminate the port city on the Gulf of Tonkin to the two business associates George Hermenier and Amand Planté, and Hanoi followed

¹⁸Of this total, 400 were reflector lanterns (*réverbères*) mounted on metal columns and equipped with 14-line circular wicks, while the remaining 500 were simple lanterns placed on wooden poles and lit with flat wicks; see *Cahier des charges, éclairage de la ville d'Hanoi*, 28 October 1891, Vietnamese National Archives Centre N1 (hereafter VNAC1), Résidence Supérieur au Tonkin (hereafter RST) dossier (hereafter d) 11352.

¹⁹In the bidding process for the luxurious street lamps, the French entrepreneur Alfred Labeye won against Fontaine & Cie, while the bidding for supplying the humbler street lighting equipment was decided in favour of the Chinese-born French merchant Taa Hing.

²⁰Minutes of the tender, 23 April 1892, VNAC1, RST d11352.

suit on 6 December of the same year.²¹ But when the first electric lighting plant was finally in place and powering the street lamps of Haiphong, a number of people felt disenchanting because of the masses of pylons and overhead power wires now crisscrossing the city. The protectorate's first French newspaper, *l'Avenir du Tonkin*, decried the unglorious sight as follows:

Haiphong is disillusioned after the first moment of enthusiasm. The sixteen-candle lamps, the awkward pylons, the transmission wires that make the Port of Tonkin look like a vast clothes-drying rack, all these disfigurements are taking a disproportionate amount of the city's resources without bringing a noticeable change to local lighting.²²

The news editors further agitated against the recently appointed governor general of Indochina, Jean-Marie de Lanessan, who they thought had launched this 'political lighting' (*éclairage politique*) in order to fall into the good graces of George Hermenier.²³ During his brief term of office (1891–1894), de Lanessan in fact actively sought to involve French entrepreneurs and their capital investments in the implementation of his ideas of colonial *mise en valeur* and infrastructural development.²⁴ In the case of electric lighting in Haiphong and Hanoi, the colonial administration issued a 20-year concession contract using what is now called a build-operate-transfer (BOT) model in which the concessioner (Hermenier and Planté) was responsible for carrying out all necessary installations for the production and distribution of electricity in the relevant city. In exchange, the contractor received the sum of 40 piaster-cents per 16-candle light and night from the municipal budget. At the end of the contract, in December 1912, the concessioner would transfer 'all electric wiring, buildings, and the premises thereof and their fixtures to the city without any claim to compensation'.²⁵

Compared to oil-powered street lights, the increase in costs for electric lighting was quite significant. On 15 June 1893, *l'Avenir* calculated that Hanoi would need to pay 73,000 francs per year for the 500 electric street lights initially proposed for the French quarter, to which 13,600 francs for the remaining oil lanterns still needed to be added. 'Today, we are paying 7.000 piastres or 23.800 francs [for oil lighting in Hanoi];' the

²¹Contract for Electric Lighting (Haiphong), VNAC1, RST d79920. George Hermenier (1859–1930) arrived in Tonkin in 1884. He subsequently became one of the most powerful industrialists in Indochina and was involved in establishing what Sagesse calls 'colonial conglomerates', that is, locally based enterprise groups that derived their profits from state contracts, monopolies, and subsidies. Hermenier was also active in Cochinchina and Cambodia, where he established, among other companies, the Compagnie des eaux et électricité de l'Indochine (1900) and L'énergie électrique indochinoise (1921); see Gerard Sagesse, 'Scaling the commanding heights: the colonial conglomerates and the changing political economy of French Indochina', *Modern Asian Studies*, vol. 49, nr. 5, 2015, pp. 1485–1525.

²²'L'éclairage "politique"', *L'Avenir du Tonkin*, 25 March 1893, p. 2. Haiphong's electric lighting apparently had a bumpy start. Between February 1893 and October 1894 alone, the city recorded a total of 9,161 lamp extinctions; see 'Éclairage électrique', *L'Avenir du Tonkin*, 1 December 1894, p. 1.

²³'Éclairage électrique', *L'Avenir du Tonkin*, 14 June 1893, p. 1.

²⁴Sagesse, 'Scaling the commanding heights', pp. 1492–1493.

²⁵Contract for Electric Lighting (Haiphong), Article 8, VNAC1, RST d79920. A print version of the Hanoi contract is available at the Archives Nationales d'Outre-Mer (hereafter ANOM), Fonds du Gouvernement Général de l'Indochine (hereafter GGI), d6376.

editor-in-chief commented acidly. ‘Tomorrow, if we use the arc lamps and 16-candle-lamps that nobody seems to be enthusiastic about, we would have to spend [a total of] 86,600 francs’ (that is, three-and-a-half times more than previously).

Owing to delays in the delivery of equipment, it was not until October 1894 that Hermenier and Planté were able to finally start electric light installations around the picturesque Petit Lac, today’s Hoan Kiem Lake, and in the adjacent European quarter (see Figure 1).²⁶ An electric power station was built on a 3,500 square metre plot on Boulevard Francis Garnier (Đình Tiên Hoàng today) facing the lake, from which it also drew water, with a 30-metre high brick chimney towering over the facility. Equipped with two coal-fired 200-horsepower boilers and two steam engines connected to four dynamos, each with the capacity to power 1,000 16-candle lamps, the station initially had—from today’s perspective—a rather modest maximum power output of 300 horsepower (225 kilowatts). But rather than enthusiastically anticipating the arrival of electric light in the streets of Hanoi, *l’Avenir* retained a cautious attitude towards the city’s modern grandeur: ‘Let us hope that the results obtained will be equal to the sacrifices we have made to equip our city with devices that few of our cities in France currently possess.’²⁷

Imprisoned stars

How, then, did the advent of electricity in the late nineteenth century transform Vietnamese experiences and understandings of nocturnal urbanity? Whereas British colonialists in Africa apparently worked hard to record and circulate the reactions of local people to the wonders of new technologies,²⁸ accounts of the Vietnamese population’s responses to their ‘technological enlightenment’ are notably absent in the French colonial press. The ‘Legend of electric light’ published in *l’Avenir* in January 1895—the month when electric street lighting in Hanoi took off—is therefore noteworthy. Authored by Victor Le Lan, a French Navy doctor who had installed himself as a dental surgeon on Boulevard Rollandes (today’s Hai Bà Trưng Street) and who became known for his ‘poetry celebrating the sensual pleasures of opium and Asian women’,²⁹ the essay relates a fabricated legend about the ‘true nature’ of electric light and how it was introduced to Vietnam.³⁰ While it is not entirely clear whether the story is rooted

²⁶Five hundred incandescent light bulbs were fitted to the existing ‘gooseneck’ lamps in the following streets: Rue Paul Bert (Tràng Tiền) and Rue de la Concession (Phạm Ngũ Lão), and on the boulevards Gia Long, Dong Khanh, Carreau, Rollandes, and Henri Riviere (today: Bà Triệu, Hàng Bài, Lý Thường Kiệt, Hai Bà Trưng, and Ngô Quyền). Moreover, a total of 30 large arc lamps were set up in selected streets as well as around Hoan Kiem Lake. See ‘L’Éclairage électrique de la ville d’Hanoi’, *L’Avenir du Tonkin*, 6 October 1894, p. 1.

²⁷‘L’Éclairage électrique de la ville d’Hanoi’, *L’Avenir du Tonkin*, 6 October 1894, p. 1; see also Michael G. Vann, ‘White city on the Red River: race, power, and culture in French colonial Hanoi, 1872–1954’, PhD thesis, University of California, Santa Cruz, 1999, pp. 131–132. The power station’s capacity apparently compared well with that of many power stations in the metropole.

²⁸Larkin, *Signal and noise*, pp. 40–41. For an account of such responses in Bombay, see Hasenöhr, ‘Rural electrification’.

²⁹Vann, ‘White city’, p. 473.

³⁰V. Le Lan, ‘Légende de la lumière électrique’, *L’Avenir du Tonkin*, 19 January 1895, p. 1. Le Lan was also a member of the electricity commission set up by the municipality.

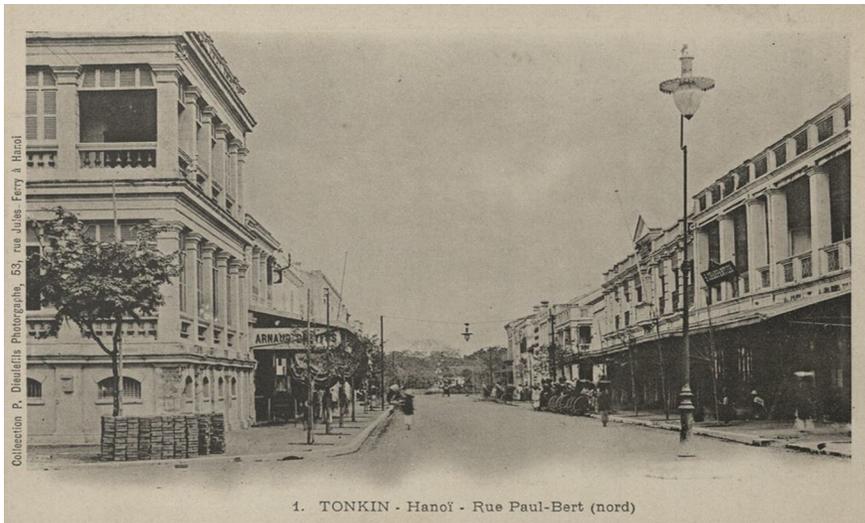


Figure 1. Electric street lights on Rue Paul Bert around 1900. Source: Colonial postcard, author's personal collection.

in reality or in the author's vivid imagination, I am using it here to illustrate how the French employed electricity to construct an Orientalized view of the colonized 'other' and their alleged attitudes towards 'Western' science and technology.

The main character and narrator in Le Lan's story is an old Vietnamese poet with a white goatee, who, after a festive group meal served with plenty of rice liquor ('choum-choum'), started to narrate the legend of the electric light:

Once upon a time, the Buddha took a walk on the seashore, when a large galley appeared on the horizon. A group of rich, white lords stood at the vessel's bow and gazed towards the shore. One of them jumped into a sampan and soon landed. After exchanging pleasantries with the Buddha, the sage and the seafarer engaged in a philosophical discussion about the laws of the universe. At one point in their conversation, the Buddha pointed to the sky with an august gesture, whereupon a shower of stars fell from the depths of the zenith. He gestured again, and the celestial lamps piled up next to each other and glazed the earth like brightly lit lanterns. At a call of the stranger, all the chests on board the ship were lowered to the shore and the crew worked for days and nights to gather these fire flowers that had fallen from the sky. Rich with a cargo of imprisoned stars, the galley finally set sail and returned to Europe.

Back in France, the captain opened the first box in front of a curious audience. But to everyone's surprise and dismay, the stars flew away 'like a swarm of fireflies' and settled back in their former places in the firmament. How could the escape of the remaining stars be prevented? The white-bearded narrator paused and relit his opium pipe. Then he went on:

The white men threaded the stars on long iron cables and fixed them solidly to the ground on metal pillars. They unfurled these strange and luminous strings of stars over their large cities and held part of the sky prisoner. But the homeland of the stars was Asia, which is why the white men brought the stars back to us from France. On the roads that you travel now in the evening, you see them, with their cast iron columns, enclosed in their glass cages and held in place by their copper strings, our stars, which once came down from the sky at the voice of Buddha, and which, asleep during the day, light up every night at the same time as their sisters up there.³¹

Accounts of miraculous events related to the Buddha's life and his magical powers are common in Asian Buddhist traditions. The moment of Śākyamuni's enlightenment, for example, is said to have been accompanied by sudden jolts of the earth, rumbling thunder from the heavens, and flowers raining down from the sky.³² In this sense, we might discern in Le Lan's *Légende de la lumière électrique* a casting of Orientalist fantasies into familiar narrative patterns. With his miraculous powers, Buddha can even command the stars, and he welcomes the foreign seafarers arriving on his shores by demonstrating to them his largesse and spiritual authority over nature and the universe. The greedy foreigners, for their part, extract as many of the starry resources as they can and head back to France. No longer spellbound by the Buddha's powers, some stars manage to break free from their captivity, but the French compensate for their spiritual disadvantage by reining in the remaining stars with the support of modern science and technology. In sum, then, the tale may be interpreted as a literary attempt at portraying the illumination of the streets of Hanoi as emblematic of the French colonizers' superior technological powers and the triumph of scientific enlightenment over religious beliefs in magical brilliance.

The available Vietnamese sources from this time period do not shed any light on how residents in the so-called native quarters discussed and experienced the arrival of electricity in Hanoi. But the writings of an early Vietnamese traveller to France offer some insight into the perception of wondrous technological advancements in the metropole. Nguyễn Trọng Hiệp, who sojourned in Paris as part of a diplomatic mission around 1895, published his most memorable impressions in poetic form. In five of the 36 poems that make up his bilingual collection of Chinese and French verses, titled *Paris, capitale de la France*, Hiệp mentions electricity in its various uses.³³ Electric lighting in the streets and buildings captured his particular attention and, much like the old poet in Le Lan's legend, he uses the imagery of falling stars to convey his awe of modern technology:

³¹Translated and adapted from *ibid.*, p. 1.

³²John Kieschnick, 'Miracles', in *Encyclopedia of Buddhism*, Vol. I, (ed.) Robert E. Jr. Buswell (New York: Macmillan, 2004), pp. 541–544 (here: p. 541).

³³Nguyễn Trọng Hiệp, *Paris, capitale de la France: recueil de vers* (Hanoi: F. H. Schneider, 1897). For a slightly different translation, see Charles Rice-Davis and Mia Nakayama, 'Electric lights and clouds of dust: a reading and translation of Nguyễn Trọng Hiệp's Paris, capitale de la France / 大法國玻璃都城禱詠', *Litera*, vol. 30, nr. 2, 2020, pp. 645–662.

(IV) So many beautiful houses, so many beautiful mansions are lined up in long chains.

At sunset the noise of coaches still rumbles.

All of a sudden, one is surprised to see the stars falling from the sky.

For thousands of bright lights come to prevent the effect of night's darkness.³⁴

Nguyễn Trọng Hiệp's interest in science and technical progress is further expressed in a whole verse dedicated to the Grand-Hôtel des Postes et Télégraphes, in which he compares the miracle of electric power to the practices of Daoist alchemy:

(XXVI) Electricity is widely studied here and used in a variety of industries

Like telegraphy, it crosses mountains and seas in the blink of an eye.

It is an inscrutable secret to the layman's world; few people know it.

Like 'đơn sa' (the genie's drug of immortality), whose preparation requires ten times the heat of fire.³⁵

The diplomat's poetry was clearly addressed to a learned readership fluent in either Chinese or French, and it remains unclear if his intentions went beyond a 'literary response to beautiful scenery which Confucian gentlemen had penned for centuries in classical poetry'.³⁶ At the time of the verse collection's publication in 1897, the first electric lights already illuminated some major streets of Hanoi, and the city was vamped up to become the capital of French Indochina.

City of light, city of pylons

Electricity, the mysterious fairy, was becoming an unforeseen reality. She had created powerful machines, capable of producing electric energy in large masses; and enticing appliances were ready to be put into use, and to flood us, in particular, with torrents of light.³⁷

When Paul Doumer became governor general of Indochina in 1897, he chose Hanoi as the capital of France's newly colonized territories in the region and embarked on

³⁴Nguyễn Trọng Hiệp added the following explanation to this verse: 'At night, the streets and public squares are lit up with electric lights, as are all the buildings and houses on all their floors; these lights run through the streets in all directions and emit their brightness, producing the effect of luminous stars in the sky': Hiệp, *Paris*. It should be noted, however, that at that time the streets of Paris were still lit by gas; see A. N. Holcombe, 'The electric lighting system of Paris', *Political Science Quarterly*, vol. 26, nr. 1, 1911, pp. 122–132.

³⁵Nguyễn Trọng Hiệp explains further that the use of electricity is not limited to the communication of news, it is also used in industry, for lighting, for electroplating, gilding, silvering, etc. Hiệp, *Paris*. Đơn sa, 'the genie's drug of immortality', is a toxic mineral (cinnabar) used as an ingredient in traditional Chinese medicine to 'anchor and calm the spirit'; see <https://www.meandqi.com/herb-database/cinnabar>, [accessed 3 March 2023].

³⁶Greg Lockhart, 'Introduction: Nhất Linh's "Going to France"', *East Asian History*, nr. 8, 1994, pp. 73–134 (here: p. 75). As Lockhart notes, 'few Vietnamese could have read this edition even if they could have found and afforded it', p. 75.

³⁷A.V., 'A propos d'éclairage', *L'Avenir du Tonkin*, 17 September 1903, p. 1.

turning the city into a major symbol of his civilizing mission in French Indochina.³⁸ During his five-year term of office, Hanoi underwent dramatic changes. Besides expanding both spatially and demographically, the city was supposed to become 'a celebration of the transformative powers of the French colonial intervention' through the use of science, technology, and rationality.³⁹ This included 'sanitizing' each neighbourhood, banning the thatched houses (*paillottes*) of the Vietnamese, filling in swamps and ponds, demolishing imperial buildings and sacred sites, paving the streets and constructing sidewalks, creating public spaces and monuments, and establishing government buildings, hospitals, and educational facilities.⁴⁰ In 1901, the journalist Hugues Bargeret enthusiastically praised Hanoi's fast infrastructural progress in *l'Avenir*, pointing to the admiration it inspired in the Vietnamese public:

Brick houses now cover an area of more than forty-five hectares [formerly dotted with *paillottes*]. The streets are paved and have electric lights, and public buildings rise out of the ground as if by magic! The indigenous people can't believe their eyes. Looking at this spectacle, they certainly experience the same amazement that our Gallic ancestors would feel if they were to leave the tomb and walk through our streets.⁴¹

The city's fast-paced development and the concomitant rise in demand for electric light in private homes soon posed a challenge for the power company and necessitated both contractual amendments and further investments in power generation capacities.⁴² In December 1900, the resident-mayor of Hanoi signed a first *acte additionnel* to the original electric lighting contract with Hermenier and Planté which expanded the concession area to now officially include the streets surrounding the military barracks constructed on the grounds of the former citadel (see Figure 2).⁴³ In addition to public lighting, the amendment expanded the monopoly's scope to also include private lighting. Since the contractors were required 'to supply and install all the equipment necessary to provide public and private lighting as it increases

³⁸The 1884 Patenôtre Treaty had designated Tonkin as a protectorate where Vietnamese law continued to be in force, but the cities of Hanoi and Haiphong effectively became French territory and were placed under French law and administration; see Vann, 'White city', pp. 60–83. For scholarship on Hanoi's urban development during the French colonial era, see also William S. Logan, *Hanoi: biography of a city* (Sydney: University of New South Wales Press, 2000); Philippe Papin, *Histoire de Hanoi* (Paris: Fayard, 2001); Gwendolyn Wright, *The politics of design in French colonial urbanism* (Chicago: University of Chicago Press, 1991).

³⁹Michael G. Vann, 'Of rats, rice, and race: the great Hanoi rat massacre, an episode in French colonial history', *French Colonial History*, nr. 4, 2003, pp. 191–204 (here: p. 192).

⁴⁰Lisa Drummond, 'Colonial Hanoi: urban space in public discourse', in *Harbin to Hanoi: the colonial built environment in Asia, 1840 to 1940*, (eds) Laura Victoir and Victor Zatsépine (Hongkong: Hongkong University Press, 2013), pp. 207–229 (here: p. 223).

⁴¹Hugues Bargeret, 'En Indo-Chine', *L'Avenir du Tonkin*, 15 November 1901, p. 1; see also 'Le développement de la ville d'Hanoi: éclairage', *L'Avenir du Tonkin*, 19 February 1901, p. 1.

⁴²'Echos', *L'Avenir du Tonkin*, 2 March 1899, p. 1.

⁴³VNAC1, RST d11352. The military area itself was not under the control of the municipality of Hanoi and therefore remained excluded from this contract.

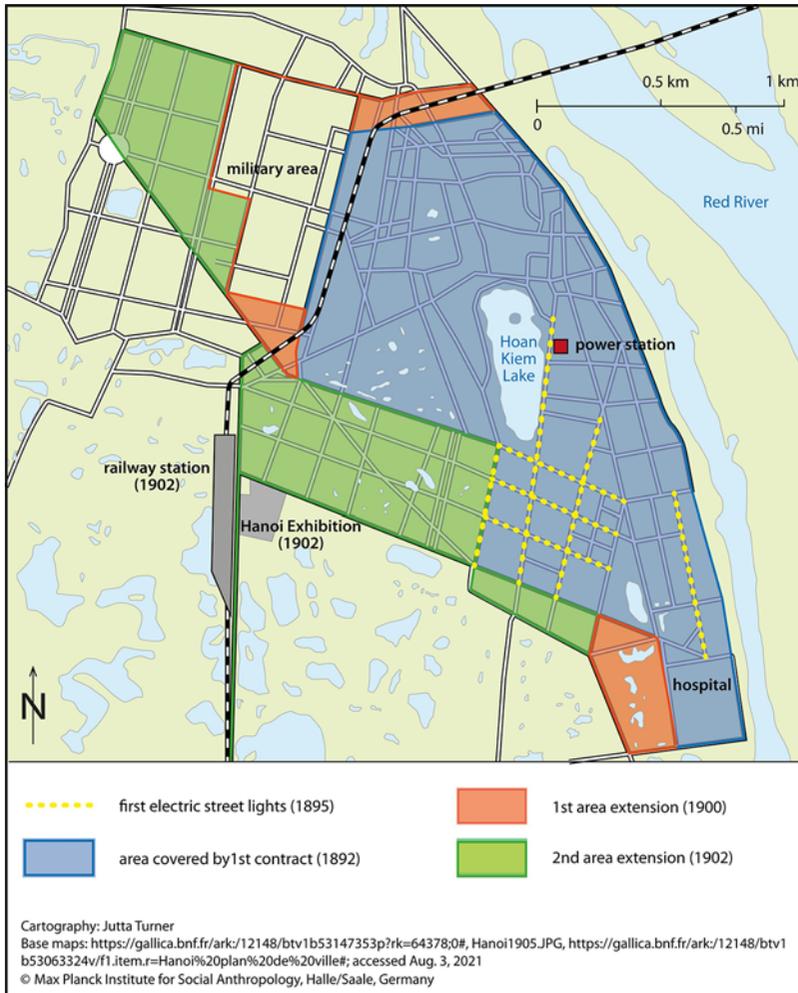


Figure 2. Area coverage of the first electric lighting concession, 1892–1902. Source: Map created by Jutta Turner.

until the end of the contract’,⁴⁴ the contract period was extended by eight years until December 1920, which gave the company more time to amortize their prospective investment. Hermenier and Planté subsequently refurbished the power station, installing new machinery and augmenting its capacity to 850 horsepower (635 kilowatts).⁴⁵ As a result, electric lights would soon not only brighten up the major streets in the European quarter at night, but also illuminate a rapidly growing number of

⁴⁴Article 8, (First) Additional Act to the Contract of 6 December 1892 on the Electric Lighting of the City of Hanoi; VNAC1, RST d11352; see also VNAC1, RST d11348.

⁴⁵‘Le développement de la ville’, p. 1.

shops and cafés, as well as the private homes of the French colonial elite.⁴⁶ Just one year later, the colonial administration already had to consider further steps ‘to bring the benefits of electric lighting to as many areas of the city as possible’—the need for which had become ever more pressing with the soon-to-be-opened railway station and the impending world fair (L’Exposition de Hanoi) that was to take place in Hanoi later that year. A second *acte additionnel* was thus needed to cover these areas. In a report to the resident-mayor dated 6 January 1902, the municipal lighting and water inspector, Mr Trombert, reported that the city had obtained, after long haggling over contractual details, ‘the most favourable conditions possible for lighting the area around the Exhibition and the Railway Station within the limits assigned by the municipal budget’.⁴⁷ The new amendment covered parts of the European quarter that had previously not been included in the electric network and pushed the northwestern boundary in the new administrative quarter further towards the Botanical Garden.

In his review of anthropological approaches to infrastructure, Brian Larkin draws on the Aristotelian concept of *aisthesis* to highlight infrastructure’s aesthetic dimension, that is, its potential to affect and shape the sensory experience of the everyday.⁴⁸ The same may apply to the ‘everynight’. Reflecting on the perception of night-time Paris in the eighteenth century as a ‘brightly lit city’, Schivelbusch alleges that the brightness of the novel reflector lanterns, or *réverbère*, might have been misinterpreted as an increased ‘brightness of the street, although this had in fact hardly changed’.⁴⁹ I suggest that electric street lighting in early twentieth-century Hanoi may have had a similar effect. Highlighting the achievement in the colonial capital, the *l’Avenir* editorial of 17 September 1903 stated that, ‘It can be said, without exaggeration and in the true sense of the word, that we live here in a city of light.’⁵⁰

Artificial lighting undoubtedly had a profound effect on Hanoi’s urban landscape and its inhabitants. Though the sources at hand do not provide details about light’s transformative role in colonial Hanoi, it feels safe to assume that electric light contributed to the formation of new life and work rhythms, increased night-time activities, as well as a more effective surveillance of ‘nocturnal disorder’ and illicit trades in the public domain. But rather than acknowledging such changes, the French press took note of the ugly downside of modern progress. As the uses of electricity diversified and Hanoi’s power network expanded, an increasing number of poles, pylons,

⁴⁶Residents who lived in streets outside the limits of the contract area clearly felt left out; see ‘Ville de Hanoi Conseil Municipal’, *l’Avenir du Tonkin*, 31 August 1898, p. 2. Between 1887 and 1901, the number of incandescent (electric) lamps did not increase, but 27 additional arc lamps were installed. Oil lamps also remained in use and numbered 691 in 1901; see ‘Le développement de la ville’, p. 1.

⁴⁷Report of Mr. Trombert, *contrôleur de l’éclairage et des eaux* since 1901, to the Mayor of Hanoi, 6 January 1902, VNAC1, RST d11352. Trombert later gave up his position in the colonial administration and became director of the Hanoi power station. In 1910 he was appointed as general director of the Société Indochinoise d’Électricité (SIE).

⁴⁸Brian Larkin, ‘The politics and poetics of infrastructure’, *Annual Review of Anthropology*, vol. 42, 2013, pp. 327–343.

⁴⁹Wolfgang Schivelbusch, *Disenchanted night: the industrialization of light in the nineteenth century* (Berkeley: University of California Press, 1995), p. 95.

⁵⁰A.V., ‘A propos d’éclairage’, *l’Avenir du Tonkin*, 17 September 1903, p. 1.



Figure 3. Pylons and lamp posts around the 'Petit Lac'. Source: Colonial postcard, author's personal collection.

and wires cluttered the streets.⁵¹ On top of the telegraph wires traversing the city and the electric grid, the Hanoi Electric Tramway Company started to operate its first two electric tramway lines in 1901, covering 12 kilometres and powered by overhead wires supplied by the company's own power station.⁵² The new electric infrastructures were thus anything but invisible and were soon considered an eyesore among all the architectural splendour of the colonial capital (see [Figure 3](#)). A note published in *l'Avenir* in April 1906 provided a critical account of the situation:

Pylon Upsurge. Do you want pylons? They have been and are still being put up everywhere along the pavements, at the corners of boulevards and streets, and soon we will have more of these unsightly iron structures (...) than trees. Of what use are the latter? I wonder, because we also don't hesitate to order the pruning or cutting of branches, and sometimes even the complete felling of this most beautiful ornament of our promenades.

And the abundant foliage, so precious especially in the hot season, is replaced by hideous pylons! We will certainly not go so far as to deny their usefulness

⁵¹Likewise, in French colonial Morocco, French administrators were concerned about 'the visually disruptive effects of the new technology and their lack of control over its installation', especially with regard to poles, brackets, and wires; see Colette Apelian, 'Modern mosque lamps: electricity in the historic monuments and tourist attractions of French colonial Fez', *History and Technology*, vol. 28, nr. 2, 2012, pp. 177–207 (here: p. 185). This cluttering was of course not specific to colonial sites—by the end of the nineteenth century, as Nye notes, many urban areas in the United States had become 'cluttered by five-tiered electric poles, with a maze of telephone, telegraph, and electric wired overhead'; see Nye, *Electrifying America*, p. 8.

⁵²See <http://www.historicvietnam.com/ha-noi-tramway-network/>, [accessed 28 February 2023]. The trams were powered by a separate power station.

altogether: far from it; but no one will prevent us from proclaiming loudly the really exaggerated use of these iron columns.

Hanoi will soon merit the title 'city of pylons'.

Whereas Hanoi's 'abundant foliage' offered a certain degree of protection from the blazing sun and tropical heat of the northern Vietnamese summer, tree branches were also prone to interfere with electric wires and thus posed a potential hazard to the public. Wire ruptures in the lighting grid were frequently reported in the 'Chronique locale' column in *l'Avenir*. While heavy storms and swirling tree branches caused some of the incidents, others apparently happened due to technical reasons.⁵³ Also reported were serious or fatal injuries caused by broken electric wires. The victims of electrical accidents were usually Vietnamese. Between April and December 1902, six *indigènes*, including a young boy servant, a roadside worker, a rickshaw puller, and a 60-year old woman, were electrocuted by broken wires in different parts of the city; one little girl suffered severe burns as well as injuries from falling and had to be taken to hospital.⁵⁴ One particularly bad accident occurred in September 1903 when two teams of Vietnamese electrical workers were repairing a section of the lighting grid in the European quarter. When the team at one end of the section prematurely reconnected the line to the power station, several workers at the other end suffered electric shocks and burns as a result. For one of them the incident proved fatal: 'Already seriously affected by the [current], he lost his balance and fell so badly that he remained suspended from the pylon by his armpits (...) and served as a conductor until (...) he dropped to the ground dead.'⁵⁵ After the case had been investigated, the blame ultimately fell on the Vietnamese overseer (*cai*), the likes of who, in the eyes of the French, were recklessly playing with fire, 'believing that when they have been taught the first elements of one of our technologies they know more than their European masters and bosses'.⁵⁶ Thus, not only were the risks of coming into potentially deadly contact with electricity unevenly distributed along racial lines, Vietnamese were also considered incapable of dealing responsibly with the new technology. In line with Le Lan's 'Legend of electric light', news reports like the above might then have mainly served to assure the French colonial community of their assumed superiority, both technologically and morally speaking, over the colonized 'other'.

Negotiating progress

The increasing demand for electric connections in Hanoi's centre, along with the provider's ambitious vision to expand the grid into new areas, required significant capital investment in modern equipment and maintenance. In 1902, Hermenier and Planté transformed into a joint-stock corporation under the name of the Société Indochinoise d'Électricité (henceforth SIE), with an initial share capital of 2.8 million francs divided

⁵³See the 'Chronique locale' of *L'Avenir du Tonkin* on 6 and 16 June 1902; 14 July 1902; as well as on 2, 3, 4, 6 and 24 August 1902. A number of wire ruptures occurred during a typhoon on 12–13 June 1902; see reports and correspondences in VNAC1, RST d11349.

⁵⁴'Chronique locale', *L'Avenir du Tonkin*, 7 July 1902.

⁵⁵Raymond Veyhel, 'Électrocution', *L'Avenir du Tonkin*, 26 September 1903, p. 2.

⁵⁶*Ibid.*

into 5,600 shares of 500 francs each.⁵⁷ In the following years, the SIE's annual net profits increased steadily.⁵⁸ One reason for this increase was certainly the payment of an instalment debt owed by the City of Hanoi to reimburse the SIE for the damages caused by two devastating typhoons in 1903 and 1909.⁵⁹ But the main reason Hermenier listed in his 1913 managing director's report was the gradual expansion of an indigenous clientele, as the Vietnamese were now 'becoming more and more accustomed to electricity'.⁶⁰

Meanwhile, the SIE had become acutely aware that the remaining period of the existing concession contract, which was to end in December 1920, was too short to attract the fresh capital it needed for grid expansions in Hanoi and Haiphong. Moreover, the SIE wanted to facilitate a merger with the *Compagnie des Eaux et de l'Électricité de l'Indochine*, another enterprise of the Hermenier group which provided water and electricity to Saigon, Cholon, and Phnom Penh, and thus needed a 'business package' of similar duration.⁶¹ The City of Hanoi, on the other hand, was keen on gaining greater control of electricity services and the revenue streams flowing from it.⁶² After more than two years of detailed deliberation over the many issues involved, a new agreement (*traité*) was finally made in April 1912.⁶³ The *traité* laid down two periods of time with different contractual arrangements. From July 1912 until December 1920, the distribution of electricity for public and private lighting and ventilation

⁵⁷The name Planté then disappeared from all reports, while George Hermenier joined the board of the SIE's directors.

⁵⁸The figures for the period 1904–1910 are available at 'Assemblées générales d'actionnaires—Société Indo-Chinoise d'Électricité', *Cote de la Bourse et de la Banque*, 22 August 1911, p. 1; for the years 1911 and 1912, when the first contract ended, see 'Société Indochinoise d'Électricité', *Les Annales Coloniales*, 8 July 1913, p. 3.

⁵⁹The SIE had sued the city of Hanoi for compensation for the damage caused by a typhoon in 1903, and ultimately won the case in 1906; for a report, see 'Audience du trente avril mil neuf cent six', *Bulletin administrative du Tonkin*, 1906, pp. 479–481.

⁶⁰In contrast to Hermenier's claim that an increase in Vietnamese customers had boosted the SIE's profits, Henri Cucherousset notes in hindsight that until 1914, 'there were still hardly any subscribers in the native districts' (H. C., 'La nouvelle centrale électrique de Hanoi', *L'Éveil économique de l'Indochine*, 16 June 1929, p. 10). He also alleges that the SIE was not even very keen on serving the Vietnamese clientele: 'Mr. Trombert then spoke with disdain of this [small Vietnamese] clientele which, with their subscriptions to one or two lamps, caused him a lot of trouble for very small profit' (H. Cucherousset, 'La nouvelle centrale de Hanoi et l'électrification du delta', *L'Éveil économique de l'Indochine*, 13 March 1932, p. 9).

⁶¹Letter, Governor General to Resident-Superior of Tonkin, 29 May 1912, ANOM, GGI d15979.

⁶²The reasons for this move are not apparent from the archival documents at hand. A look at the evolution of the legal frame of concessions in France between 1880 and 1920 reveals a gradual change from the concession as a pure contract to that of a partnership between public authorities and the private sector in 'an attempt to adapt economic liberalism to a form of public interventionism'; see Dubois de Carratier, 'Le conseil d'état', p. 64. The First World War and the onset of chronic inflation apparently caused a change of attitude in the management of public utilities in favour of direct (municipal) administration; see Barjot, 'Public utilities', p. 785. It is reasonable to assume that municipal administrations in the French colonies also experimented with different models of infrastructural governance. Another possible driver for this move might have been Albert Sarraut, who served as the governor general of Indochina between 1911–1913 and 1916–1919 and whose 'ideas of colonial *mise en valeur* pivoted around state investment in colonial development'; see Martin Thomas, 'French empire elites and the politics of economic obligation in the interwar years', *The Historical Journal*, vol. 52, nr. 4, 2009, pp. 989–1016 (here: p. 998).

⁶³ANOM, GGI d15979, and VNAC1, RST d11356.

was to remain in the hands of the SIE as sole concessioner. From January 1921 until December 1937, the arrangement would be that of a *régie intéressée*, a form of public-private partnership in which the municipality determined the conditions and prices for the sale of electricity to end consumers and the SIE received a fixed annual sum for the provision of electric power and services.⁶⁴

The colonial press viewed the extension of the SIE's monopoly rights with a good deal of suspicion, true to the conviction that 'powerful firms invariably request an ox in exchange for an egg' (*les entreprises puissantes exigent presque toujours un bœuf en échange d'un œuf*), and accused the current resident-mayor, Alfred Logerot, of handling the process in a rather non-transparent manner while 'believing himself to be the absolute master and sole arbiter of the city's destiny'.⁶⁵ On the other hand, it was felt that the municipality was not sufficiently equipped to handle the supply of electricity and that a large company like Hermenier's SIE could offer the public better terms and services than smaller electricity providers.⁶⁶ The municipality would have to shoulder the costs for additional equipment, but the SIE was obliged to advance these expenses up to a total amount of 500,000 francs (including 5 per cent interest), payable after the end of the concession agreement.⁶⁷ Overall, it was felt that the *traité* stripped the SIE of the 'leonine advantages' that the previous contract had accorded them, as it 'almost entirely abrogated the clauses that the city's administrators had previously been weak enough to accept'.⁶⁸

⁶⁴See VNAC1, RST d79978 for the actual agreement and ANOM, GGI d15979 for the discussion. In Haiphong, the concession was extended until 1920, and this was much criticized in the press; see Henri Laumônier, 'Pages brèves', *L'Avenir du Tonkin*, 25 March 1912, p. 1, and 'Chronique de Haiphong: le contrat de l'électricité', *L'Avenir du Tonkin*, 25 March 1912, p. 2. In France, municipalities had been authorized since 1900 to produce electricity, but private capital remained dominant due to the large investments necessary to create power distribution networks. In 1906, the Conseil d'État (Council of State) promulgated a law which gave municipalities the authority to grant electricity concessions based on a standard contract defining the rights and duties of the concessioner; see Marcelo Poppe and Lionel Cauret, 'The French electricity regime', in *European electricity systems in transition: a comparative analysis of policy and regulation in Western Europe*, (ed.) Atle Midttun (Oxford: Elsevier, 1997), pp. 199–229.

⁶⁵Laumônier, 'Pages brèves', p. 1.

⁶⁶'Chronique de Haiphong', *L'Avenir du Tonkin*, 25 March 1912, p. 2. One of the advantages the *régie intéressée* offered to the municipality of Hanoi was that, starting from January 1921, it would be able to exercise greater control over their electricity usage for public lighting. Whereas the SIE had formerly dictated even the type of lamps used for street illumination purposes, the city could now opt for modern energy-saving metal filament lamps which provided brighter light while using less power than the carbon filament lamps of the past. Hanoi would thus be able to expand its public lighting network without straining its electricity bill; see report of the Chief Engineer (H. Dussaix), General Directorate of Public Works, 28 April 1911, VNAC1, RST d11356.

⁶⁷As the director of the General Government's Finance Department astutely pointed out in a letter to the resident-superior, this arrangement in fact constituted a loan in disguise to the municipality, although this was apparently entirely consistent with the law. The ceiling of these advances was later raised to 3,500,000 francs by an amendment to the original contract signed on 25 July 1923 and approved by a decree of 25 June 1924. This amendment also stipulated that these advances would bear interest at 5 per cent per annum for the first 500,000 francs and 8 per cent for the next three million francs (ANOM, GGI d58975).

⁶⁸Letter, Director of the General Government's Finance Department, to the Resident-Superior, 29 May 1912, ANOM, GGI d15979.

The 'Great War' and its aftermath

The outbreak of the First World War in 1914 brought the implementation of the '*mise en valeur*' development programme to a temporary halt and interrupted French capital investment, even though exports increased and spurred overall economic growth in colonial Vietnam.⁶⁹ In addition to mobilizing all able-bodied French citizens to return to their homeland and support the war effort, the government recruited approximately 97,000 Vietnamese soldiers and workers to serve in France.⁷⁰ The repatriation of French *colons* provided an opportunity not only for Chinese merchants, but also for an aspiring class of Vietnamese entrepreneurs to expand their businesses. When the French returned after the war, they met with competition from a growing Vietnamese newly rich elite that profited substantially from favourable fluctuations in the exchange rate between the piastre and the franc.⁷¹

The profitability of French enterprises, in contrast, was sharply reduced by the steep rise of the piastre by around 633 per cent between July 1915 and February 1920.⁷² In May 1919, George Hermenier painted a gloomy picture of the SIE's financial situation. Besides soaring coal prices and salaries that had driven up the power plant's operating costs, the appreciation of the piastre had incurred an increase in expenses that Hermenier felt was 'completely out of proportion' to the increase in revenues. The reason for this imbalance was the contractual stipulation that electricity tariffs were calculated in francs, while the SIE had to pay for its main expenses in the country in piastres.⁷³ In Hanoi, the municipal administration heavily debated Hermenier's plea to remedy the situation until it was decided in March 1920 to issue an amendment to the existing agreement that raised the fixed tariff for public lighting by 70 per cent.

When the *régie intéressée* came into force in 1921, it soon became evident that the municipality was overburdened with the management of Hanoi's now even faster-growing demand for electricity. *L'Eveil économique d'Indochine* attributed this rise in demand in the early 1920s mainly to the increasing purchasing power of the Vietnamese and noted that even the smallest Vietnamese shopkeeper now wanted to receive their clientele in a brightly lit and ventilated store and that small workshops and service providers had increasingly come to use electrically driven machines and tools.⁷⁴ At around the same time, the nascent Vietnamese press addressed the

⁶⁹Brocheux and Hémery, *Indochina*, p. 175.

⁷⁰Kimloan Vu-Hill, *Coolies into rebels: impact of World War I on French Indochina* (Paris: Les Indes Savantes, 2011); see also Xu Guoqi, *Asia and the Great War: a shared history* (Oxford: Oxford University Press, 2017), p. 94–118.

⁷¹Vann, 'White city', pp. 177–180.

⁷²Brocheux and Hémery, *Indochina*, p. 138.

⁷³Letter, George Hermenier, to the Resident-Mayor of Hanoi, 27 May 1919; ANOM, RST d30279. The dossier also contains a 34-page letter by Trombert to the resident-superior of Tonkin issued in April 1920 explaining the situation in further detail, as well as various deliberations about relevant contract modifications. The setting of electricity prices for the years 1921 and 1922 is detailed in ANOM, GGI d58979.

⁷⁴H. C., 'A l'usine électrique de Hanoi', *L'Eveil économique de l'Indochine*, 7 October 1923, p. 3. The fact that many Europeans had left Hanoi at the beginning of the First World War had apparently also led to a change in the SIE's attitude towards small Vietnamese customers; see Barbisier, 'Encore une industrie prospère: les centrales électriques au Tonkin', *L'Eveil économique de l'Indochine*, 6 July 1924, p. 1.

topics of science and technology in a rather pragmatic manner.⁷⁵ Between December 1923 and May 1924, the Saigonese weekly *Khoa học Tạp chí* (Science Magazin) ran a series of articles taken from Alexis Lân's textbook '*Thiết hành điện học*' (Practical Electricity), explaining the basics of electricity in pedagogical depth.⁷⁶ Science and technology also became a subject of interest for *Nam Phong* (Southern Wind), a Hanoi-based Vietnamese-language periodical that had become very influential among the pro-French literary elite. In a number of contributions, electrification was hailed as a driving force for economic progress, and thus for the social advancement of colonial society.⁷⁷ Reform-minded urban intellectuals such as the Self-Strength Literary Group (*Tự Lực Văn Đoàn*) felt committed 'to an unwavering struggle for progress and an ongoing effort to expand public awareness of scientific knowledge'.⁷⁸ A sense of supernatural wonder remained nevertheless, as the following quote from a treatise on electrical science published in March 1918 suggests: 'Electricity can do a lot for people, like a fairy that bestows favours on humanity.'⁷⁹ But whereas the French *l'Eveil économique* started a veritable press campaign in 1920 demanding that action be taken to tackle electricity shortages, Vietnamese-run newspapers did not report on such contentious matters.⁸⁰

In 1922 and 1925 respectively, the SIE installed two new turbo dynamo groups to further augment the power plant's capacity and satisfy demand for the next 10 to 12 years.⁸¹ Their optimism was not shared by everyone. In a letter to the governor general of Indochina dated 20 August 1925, Felix Krautheimer, then resident-superior of Tonkin, in fact argued in favour of a return to the concession model. Besides ending up with a run-down power station of insufficient capacity at the end of the contract, he reasoned that the municipality would be left with huge debts to the SIE that would take forever to pay off. It was therefore 'in everyone's interest to give up the *régie intéressée* and to leave it to the concessionary company's care to install ... a more modern

⁷⁵On the Vietnamese press during this time period (though with a focus on Saigon), see Philippe M. F. Peycam, *The birth of Vietnamese political journalism. Saigon 1916–1930* (New York: Columbia University Press, 2012).

⁷⁶Alexis Lân was one of the first Vietnamese electrical engineers who studied in France. In 1917, his bilingual textbook 'Practical Electricity' was published in Saigon (F. H. Schneider). *Khoa học tạp chí* first appeared in October 1923 and stayed in print for only three years, with an initial circulation of 1,000 copies that later dropped to 650 issues; see <https://www.diendan.org/phe-binh-nghien-cuu/khoa-hoc-tap-chi>, [accessed 28 February 2023].

⁷⁷Science and technology also featured in the writings of Vietnamese anti-colonial nationalists. Phan Bội Châu, for example, a leading figure in the early twentieth-century anti-colonial movement, actively promoted scientific and technological education as an important key to Vietnam's future independence; see Truong Buu Lam, *Colonialism experienced: Vietnamese writings on colonialism, 1900–1931* (Ann Arbor: University of Michigan Press, 2000).

⁷⁸George Dutton, 'Lý Toét in the city: coming to terms with the modern in 1930s Vietnam', *Journal of Vietnamese Studies*, vol. 2, nr. 1, 2007, pp. 80–108 (here: p. 81).

⁷⁹Nguyễn-Lễ, 'Điện-học khái luận' ('Electrical science outline', translated into *quốc ngữ* by Nguyễn Mạnh Bổng), *Nam Phong*, nr. 9, March 1918, p. 158.

⁸⁰See H. C., 'La nouvelle centrale électrique', p. 10.

⁸¹Cucherousset alleges that it took a full 18 months of negotiations until the purchase of the first new turbo-dynamo was officially authorized; see H. C., 'A l'usine électrique de Hanoi', p. 3; see also 'La question de l'électricité à Hanoi', supplément à *L'Avenir du Tonkin*, 7 May 1928.

and powerful power station that allows for an expansion of electricity sales and, consequently, an appreciable increase in the city's net profits'.⁸² But the governor general at the time, Maurice Monguillot, rejected the replacement of the *contrat de régie* for a number of reasons, and it was not until 1928 that concession negotiations were taken up again with renewed vigour.⁸³

The French press never tired of showering both the SIE and the municipality with scorn and fury for their inadequate services and for 'unceasingly accepting new subscribers when they were not even able to satisfy the old ones'.⁸⁴ The power station in use hardly provided sufficient current for lighting, let alone for the operation of refrigerators, ice machines, electric printers, and other small industrial machines that were coming into increasing use.⁸⁵ But French colonials were not the ones who suffered most from power disruptions in the city. The first electric lines shut down during supply shortages were usually those of Vietnamese subscribers in the so-called native quarters.⁸⁶ Not only were their streets and houses even more dimly lit (if at all) than those in the French quarter, their voices were also the least influential in the colonial city. In any case, affected electricity users were 'powerless' in a double sense, as there was no legal recourse against the electricity provider.

The press was also concerned that Hanoi's technological deficiencies would tarnish the colony's reputation abroad. During the visit of a Japanese delegation, Hanoi apparently 'made a fool of itself with its streetcars and its lighting', wrote Henri Cucherousset, editor-in-chief of *l'Eveil économique*, under his pen name 'Barbisier' in October 1925.⁸⁷ When concession negotiations resumed more than two years later, Hanoi was still bathed in the same faint light, which caused the editor-in-chief of *l'Avenir* to express his reservations about a long-term monopoly concession for the SIE:

[The SIE] wishes to have the exclusive privilege of bringing us light. But one might say that she already has it. We owe her these golden rays that our lamps diffuse in the darkness of our apartments. The brightness that she gives us is not brilliant. It is the effect of her care. No one else but her brings to our streets this half-darkness which seems to come from the stars.⁸⁸

⁸²Letter, Resident-Superior to Governor-General, 20 August 1925, ANOM, GGI d58975. Discussions about a return to the concession model had in fact already started in 1922; see Report of the Resident-Superior to Governor-General, 13 June 1925, ANOM, GGI d58975.

⁸³G. Peyrot, 'Concession perpétuelle', *L'Avenir du Tonkin*, 13 February 1928, p. 1. *L'Eveil économique* attributed the delays not to the offices of the Government General, but to 'manoeuvres of the Public Works administration'; see 'Informations divers', *L'Eveil économique de l'Indochine*, 2 September 1928, p. 18.

⁸⁴Barbisier, 'Lusine électrique de Hanoi', *L'Eveil économique de l'Indochine*, 25 October 1925, pp. 5–6.

⁸⁵H. Cucherousset, 'La question de l'électricité à Hanoi', *L'Eveil économique de l'Indochine*, 1 April 1928, pp. 1–3. Major manufacturers did not rely on the SIE's power network but instead depended on their own generators to produce energy.

⁸⁶See also 'Informations diverses', *L'Eveil économique de l'Indochine*, 6 July 1926, p. 19: 'It is always the native quarters that are punished, that is to say, the people who still work in their stores or workshops, never the quarters ... where people who could protest more strongly take the aperitif.'

⁸⁷Barbisier, 'Lusine électrique de Hanoi', pp. 5–6.

⁸⁸G. Peyrot, 'Concession perpétuelle', *L'Avenir du Tonkin*, 13 February 1928, p. 1.

Those oriented towards economic liberalism, notably *l'Eveil économique*, defended the return to the concession model, arguing that endless bureaucratic hurdles and discussions had obstructed even the slightest improvement during the *régie intéressée* and that only an independent business group had the necessary capital and was venturesome and flexible enough to adapt to new conditions, that is, to meet the growing energy demand.⁸⁹ After several rounds of intense debates and consultations (and an initial rejection⁹⁰), the Hanoi City Council finally abandoned its 'fiercely socialist point of view'⁹¹ and voted almost unanimously (with only one exception) in favour of the SIE's concession proposal. The new concession contract, termed 'convention', was signed on 15 May 1928 for a duration of another 30 years.⁹²

The promise of an electrified future

As Appel et al. remind us, infrastructures have for a long time promised modernity, development, and progress, and are thus productive of future imaginaries and expectations.⁹³ The new concession contract between the SIE and the city of Hanoi held the promise of overcoming the deficits and limitations of the existing power grid and enabling a future of electrified urbanity. But this promise needed preparations before it could be realized—and patience on the consumers' side. 'When is Hanoi going to have light?' asked a headline of *l'Eveil Économique* in February 1929, when the new concession contract had been in place for almost nine months.⁹⁴ An important step in this direction was the decision to build a new central power station near the shores of Trúc Bạch Lake. The old power station was outfitted with another 1,500-kW turbine to bridge the two-year construction period of the new plant, but it was clear that further extensions would not be possible due to spatial constraints and the increasing pollution of the water of Hoan Kiem Lake.⁹⁵ The new plant would have a capacity of 6,000 kilowatts and was praised as 'a model of its kind' (*un modèle du genre*), furnished with first-rate equipment based on the 'latest scientific and technological advancements'.⁹⁶ Whereas the old power station generated direct current, the new plant would supply modern alternating current, which also necessitated the installation of new light and

⁸⁹H. Cucherousset, 'La question de l'électricité à Hanoi', *L'Eveil économique de l'Indochine*, 1 April 1928, pp. 1–3.

⁹⁰*Ibid.*; see also 'L'étourderie d'un édile hanoïen', *L'Eveil économique de l'Indochine*, 29 May 1928, pp. 2–3; and 'La question de l'électricité à Hanoi', *L'Avenir du Tonkin*, 7 May 1928, p. 1.

⁹¹'Informations diverses', *L'Eveil économique de l'Indochine*, 29 April 1928, pp. 18–19.

⁹²ANOM, GGI d58975; for the *convention* in full, see ANOM, Résidence Supérieure au Tonkin, Nouveau Fonds (RSTNF) d02668. The specifications (*cahiers des charges*) are available at VNAC1, Mairie de Hanoi (MdH) d4376.

⁹³Hannah Appel, Nikhil Anand and Akhil Gupta, 'Temporality, politics, and the promise of infrastructure', in *The promise of infrastructure*, (eds) Nikhil Anand, Akhil Gupta and Hannah Appel (Durham and London: Duke University Press, 2018), pp. 1–38 (here: p. 3).

⁹⁴Barbisier, 'Quand Hanoi aura-t-il de la lumière?', *L'Eveil économique de l'Indochine*, 3 February 1929, pp. 2–3.

⁹⁵H.C., 'La nouvelle centrale électrique', p. 10; Paul Trident, 'Actualités. Production et distribution de l'énergie électrique à Hanoi', *L'Avenir du Tonkin*, 27 May 1929, p. 1.

⁹⁶Jean Joly, 'Hanoi, ville lumière', *L'Avenir du Tonkin*, 14 February 1931, p. 1.

ventilation fixtures in parts of the city.⁹⁷ Hanoi was finally one step closer to becoming, once again, the *ville lumière* of Tonkin. For committed advocates of liberalism like Henri Cucherousset, the new plant provided economic benefits for everyone:

The municipality will receive a considerable revenue as a result of a development that the SIE will have an interest in encouraging, the SIE will be free in its movements and able to show initiative, [and] the public will receive electricity at the desired voltage and at a price that is that of the large cities of France.⁹⁸

Electrification not only opened up considerable potential for the future of the colonial capital, but elsewhere as well. Besides Hanoi and Haiphong, smaller urban centres in the Red River Delta, including Hà Đông, Bắc Ninh, Hải Dương, Nam Định, Tam Đảo, Sơn Tây, and Lào Cai, already generated their own electricity, although on a much more modest scale.⁹⁹ When plans for an interconnected distribution network were drawn up and the SIE was awarded the 'General concession for the electrification of the Tonkin Delta'¹⁰⁰ in July 1931, French expectations around spreading the light of progress and civilization across the colony soared even higher and anticipated that the electrification of the Vietnamese countryside would kick off soon:

Do you see these sawmills installed in the heart of the forest that send the best felled wood? Do you see these rice fields irrigated automatically [with the help of] a low consumption motor? Do you see these small village workshops and farms using the marvellous fluid [i.e., electricity] as they please? Today this is still only a dream, but it will soon be reality and France will be able to pride itself on having brought to this country the productive force and the light in which mankind rejoices.¹⁰¹

For the newly emerging Vietnamese bourgeoisie, electricity had by then already become a fact of everyday life. Even though private access to electric power remained a privilege afforded to only a fraction of the indigenous population, Vietnamese households now formed the majority of subscribers.¹⁰² Meanwhile, the 'light of the capital'

⁹⁷Hanoi's city centre apparently continued to run on direct current. When the new central power station came into service in 1931, the old plant was changed into a transformer station to convert alternating into direct current; see Trident, 'Actualités'.

⁹⁸H.C., 'La nouvelle centrale électrique', p. 11.

⁹⁹For an overview, see Barbisier, 'Encore une industrie prospère', pp. 1–4; see also P. Drouin, 'L'électrification du Tonkin', *Bulletin Économique de l'Indo-Chine*, vol. 4, nr. 3, 1938, pp. 481–489.

¹⁰⁰This concession will be the subject of a future publication. For a brief overview, see Tertrais, 'L'électrification'.

¹⁰¹Joly, 'Hanoï, ville lumière'. It was even assumed that the electrification of the countryside would prevent young people from migrating to the city; see René Petitet, 'L'électrification des campagnes', *Le Colon Français*, 14 January 1933, p. 16.

¹⁰²In 1929, Hanoi had a total of 129,608 residents, of which 5,674 were French and 4,358 Chinese (*Annuaire administratif de l'Indochine*, 1929, p. 309). Assuming that an average family unit consisted of four individuals, the majority of the approximately 6,000 subscribers at that time were in all probability Vietnamese, even in the unlikely case that every French and Chinese household had electricity. Hanoi's overall household electrification rate was thus around 18 per cent. Unfortunately, the archival documents at hand do not provide any information on the number of electricity subscribers. According

exerted a magnetic pull on impoverished rural people and drew more and more migrants to the city of Hanoi. In his report *Household Servants* (1936), the well-known writer Vũ Trọng Phụng captures the lure of the city as follows:

Perhaps on nights when there are no moon and stars, the peasants in Nam Dinh, Thai Binh, Hai Duong, Bac Ninh, Son Tay, and Hoa Binh go out into their courtyards and see a shining halo each time they turn their heads and look far-off into a corner of the sky. There, hovering over a thousand years of culture and glowing with easy riches, the peasants see a halo over Hanoi, and they are still leaving their villages for it!¹⁰³

A series of cartoons published in the Hanoi weekly *Phong Hóa* (Mores and Customs) satirically illustrates the cultural clash between rural realities of life and modern urban sophistication through the character of Lý Toét. This rustic visitor to the rapidly transforming city of Hanoi often marvels at modern utilities and (mis)interprets their uses from a 'backward' peasant worldview.¹⁰⁴ Conversely, the reaction of rural folk to the arrival of electricity in the Vietnamese countryside is satirized in a cartoon that plays on the double meaning of the word *điện*, which can refer to both a spirit shrine and to electricity (see Figure 4). In the cartoon, both meanings are conflated in the scene of a worshipping ritual (*lễ*) in which three peasant women (recognizable by their dress and carrying baskets) pay their respects to an entangled assemblage of divine powers and electric power lines, thus invoking the 'technological sublime'¹⁰⁵ of colonial modernity.

In conclusion, public street lighting and electrification played an important part in the emergent urbanity of late nineteenth-century colonial Vietnam. Projected as an emblem of European civilizational and technological superiority, the spectacle of electric light and power held the promise of contributing to the *mise en valeur* of French Indochina. But even after more than 30 years since its advent in Vietnam, the electrical infrastructure remained patchy and uneven. This article has focused on the city of Hanoi, where approximately 6,000 private households were connected to the electric grid by the early 1930s.¹⁰⁶ The Société Indochinoise d'Électricité successively augmented the initial power plant's capacity, but electricity generation could never keep pace with the steady increase in consumption. With electric power now being utilized not only for lighting up streets and private homes but also for powering production processes, persistent shortfalls in power supplies gradually turned a source of

to a stocktaking report of the Government General of Indochina on the distribution of electric energy in Tonkin, Hanoi's generating station powered approximately 1,883 lamps for public lighting and 16,000 private lamps in 1925; see ANOM, Fonds Ministeriels, Inspection Générale des Travaux Publics (FM 1TP) 1171, d1.

¹⁰³Vũ Trọng Phụng, 'Household servants', in Greg Lockhart and Martina Lockhart (trans), *The light of the capital* (New York: Oxford University Press, 1996), p. 144. For a detailed account of Vũ Trọng Phụng's oeuvre, see Zinoman, *Vietnamese Colonial Republican*.

¹⁰⁴See Martina Thuchhi Nguyen, *On our own strength: the self-reliant literary group and cosmopolitan nationalism in late colonial Vietnam* (Honolulu: University of Hawai'i Press, 2021); see also Dutton, 'Lý Toét in the city'.

¹⁰⁵See Nye, *Electrifying America*, p. 59.

¹⁰⁶Cucherousset, 'La nouvelle centrale de Hanoi', p. 10.

Lễ điện . . .

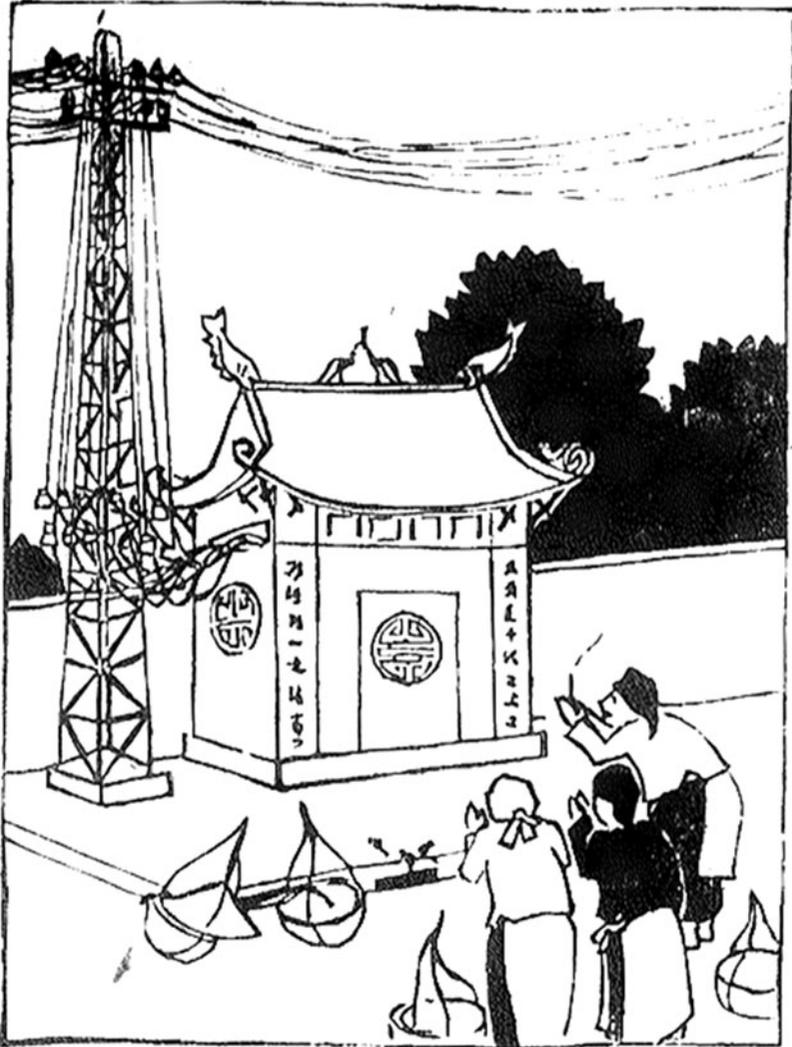


Figure 4. Cartoon playing on the double meaning of *điện* (spirit shrine/electricity). Source: *Phong Hóa*, nr. 21, 11 November 1932, p. 5.

colonial pride into an embarrassment and obstacle to further progress.¹⁰⁷ The return to the concession model in 1928 and the subsequent construction of a new central power station in Hanoi promised to be a turning point in colonial energy politics and

¹⁰⁷Workers apparently profited from this impediment in unexpected ways: to reduce their dependency on electric lights, some factory owners started to change their working hours to end at five o'clock in the afternoon, which also had the effect of reducing their lighting bill; see Barbisier, 'Quand Hanoi', p. 2.

triggered a new ‘infrastructural hope’¹⁰⁸ for a bright electrified future for Vietnam’s countryside and peasantry. Among technology-savvy Vietnamese urbanites in Hanoi, electricity and its use in everyday life had by then already become a distinct marker of urban sophistication and civilizational achievement.

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¹⁰⁸I borrow this term from Madeleine Reeves, ‘Infrastructural hope: anticipating “independent roads” and territorial integrity in Southern Kyrgyzstan’, *Ethnos*, vol. 82, nr. 4, 2017, pp. 711–737.

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