



## The Logic of Power: Electricity Production in the Cochin State

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**Summary:** *The unique position of the Trichur Corporation Electrical department is a window to the role played by electrical power consumption as a marker of modern development.*

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The Trichur Municipal Corporation was instituted in 1921 to oversee the developmental ambitions of the town.<sup>1</sup> A town council, which existed since 1910, managed the affairs prior to the Cochin Municipal reforms of 1921. The Municipal corporation, like other similar examples from the world, operated on the lines of ensuring proper sanitation and housing. In effect, it was executing the same administrative and political functions laid down by the activities of the Trichur Town Council. However, the Trichur Municipal Corporation stands apart compared with other similar establishments in Kerala at that time. From the Malabar district in the North to the Travancore Kingdom in the South, Trichur Municipal Corporation stood, and still stands, as the only municipal body that supplies its own electricity. The Trichur Corporation Electricity Department (TCED), which was earlier known as Trichur Electric Corporation Ltd., instituted in 1931 generates, buys, and distribute electricity to the whole Corporation. It is one of the several licensees who are authorised to distribute electricity under the Central Electricity Supply Act of 1948<sup>2</sup>, and the only local government body in Kerala to do so.<sup>3</sup>

This article shows why TCED remains in force in the 21<sup>st</sup> century, when other

electricity supply bodies amalgamated into Kerala State Electricity Board. Drawing from unpublished primary sources and published secondary sources, I argue that the creation of TCED was sustained through the logic of what Debjani Bhattacharya calls the “technologies of property,” where the state manoeuvres around legal, scientific, and ecological frameworks to create properties fit for consumption.<sup>4</sup> Here, consumption means that the properties that were hitherto seen as waste, could be converted into spaces that generated revenue. For the Cochin State, the synergy between administrative reforms and ecology was visible in the early 20<sup>th</sup> century.

Cochin State, in the beginning of the 20<sup>th</sup> century, was experimenting with a variety of modern industries. The introduction of the railways, forest steam tramway, town councils, and the Cochin Harbour Project, embodied the modernist aspirations of the state.<sup>5</sup> This was also reflected in the numerous educational reforms and charitable foundations that helped the poor and needy. While its efficacy and logic can be debated on a different platform, the State of Cochin pushed hard for attaining an infrastructural modernity. Omana J. points out to the rapid expansion of industries along with the

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<sup>1</sup> <https://web.archive.org/web/20120731205949/http://www.corporationofthrisur.net/history>.

<sup>2</sup> The Electricity Supply Act, 1948: “An Act to provide for the rationalisation of the production and supply of electricity, and generally for taking measures conducive to “electrical development”. WHEREAS it is expedient to provide for the rationalisation of the production and supply of electricity for taking measures conducive to “electrical development” and for all matters incidental thereto”, E.15, Ernakulam Regional Archives (E.R.A)

<sup>3</sup> <https://tced.in/aboutus.aspx>.

<sup>4</sup> Debjani Bhattacharya, *Empire and Ecology in the Bengal Delta: The Making of Calcutta*, New Delhi: Cambridge University Press, 2018, p. 18.

<sup>5</sup> See more on Cochin’s modernising ambitions at Sebastian Joseph, *Cochin Forests and The British Techno-Ecological Imperialism in India*, Delhi: Primus Books, 2016; Robert Bristow, *Cochin Saga: A History of Foreign Government and Business Adventures in Kerala, South India, by Arabs, Romans, Venetians, Dutch and British, together with the Personal Narrative of the Last Adventurer and an Epilogue*, London: Cassel, 1959

creation of technical schools and scholarships for students.<sup>6</sup> Eric Hobsbawm argues that industrialisation does not mean just having factories and heavy machineries themselves, it is also about putting the attendant institutions that sustains the process of industrialisation in place.<sup>7</sup> Cochin state was hearkening to the prevalent global zeitgeist. However, the State did not have adequate electricity generating stations that supplied its industrial demand.

### Light, Power, and Modern Industry

Cheap electricity was a much sought after commodity in the late 19<sup>th</sup> century world. By bringing down the overhead cost of electricity charge, industrial houses sought to maximise their profits. However, a majority of the earlier generating stations were thermal power plants. The first publicly owned power plant came up in Britain called the Edison Electric Light Station in 1882. The company operated a coal-powered generator and promised to bring light and energy into the London suburbs. The London suburbs in the late 19<sup>th</sup> century were notorious for their sanitary problems and criminal elements. The members of the Metropolitan Body of Works and later the London County Council believed that electrification would be a panacea for these problems. Multiple thermal power plants were set up in the city for the said purpose. However, the high costs incurred by their operations

ensured that only a few could afford its benefits.<sup>8</sup> In 1889, Calcutta was the first city in India to have achieved partial electrification through the power supplied by the Calcutta Electricity Supply Company. Unsurprisingly, the first units that were electrified were the government offices, elite private residences, and Harrison Street, which became MG Road later.<sup>9</sup>

Although the question of inexpensive electricity must be seen in the larger context of the Alternating Current and Direct Current (AC/DC) debate, the limited generating capacity of the earlier thermal power plants made them an area-specific infrastructural marvel. Even though scaling those capacities had proved to be effective in supplying electricity to a large area, the fluctuating costs of raw materials like coal, wood, petroleum industries proved difficult to fix electricity rates.<sup>10</sup> As a result, many industrial houses preferred to have their own generating stations which they hoped could keep the overhead costs low.

Nevertheless, the industrial houses and some of the legislators across India and the world, argued for scaling up hydroelectric projects. It was renewable and had the opportunity to cut costs substantially. The role of electricity in spreading civilisation is perhaps understated in the larger historical literature. In India, the electrification

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<sup>6</sup> Omana J, *Making of a Princely State Under British Colonialism: Realm, Rule and Society in Cochin, 1791-1947*, Kalady: Sree Sankaracharya University Press, 2018, p. 99.

<sup>7</sup> Eric J. Hobsbawm, *Age of Capital: 1848-1877*, London: Abacus, 1995, pp. 54-61.

<sup>8</sup> Peter Ackroyd, *London: The Biography*, London: Vintage Books, 2001, pp. 445-6.

<sup>9</sup> Sandhya Madan, Swetha Manimuthu and S. Thiruvengadam, "History of Electric Power in India (1890-1990)", in *IEEE Xplore*, 2007, p. 154.

<sup>10</sup> Melissa Powers, "The Cost of Coal: Climate Change and the End of Coal as a Source of Cheap Electricity." *U. Pa. J. Bus. L.* 12 (2009): pp. 407-9.

process went together with industrial development. Some of the earlier projects were installed in plantations across British India for various purposes. Usually, these were thermal power stations with a limited operating capacity. With the introduction of hydroelectric projects along with thermal power plants in these plantations, the power output increased considerably. Consequently, more units began to set up their own electricity generation plants for industrial purposes which led to the Indian Electricity Act of 1910. This act allowed private companies to set up shop and distribute electricity. Cities, towns, and industrial enclaves were lit up. However, the supply of electricity to large networks proved to be a problem for the companies. There were instances of power cuts which hindered industrial operations. The huge costs incurred through infrastructural development and electricity charges angered the public. These expenses proved to be an obstacle for the massive deployment of electricity in India. However, its appeal did not vanish.

C.P. Ramaswamy Iyer, the infamous Dewan of Travancore, as a member of the executive council of Madras Presidency captured the essence of a hydroelectric project. Speaking on behalf of the Madras Government's willingness to execute the Pykara hydroelectric project, which was opposed by the Legislative Council members for its expensive bill, Iyer argued that the costs incurred by the hydroelectric project will be compensated

by the revenue it will generate in the future.<sup>11</sup> He drew the members' attention towards the Sivasamudram Hydroelectric project inaugurated by the Mysore State in 1902, which enabled the electrification of Mysore and Bangalore.<sup>12</sup> The relative industrial development of the Princely state and its KRS dam project were seen as positive indicators of the benefits of cheap electricity. However, apart from its productive capacities, electric power brought socioeconomic changes to people. Gandhi, who was apprehensive of electricity being diverted for urban and industrial needs, was vocal in his support of spreading the scheme to rural areas.<sup>13</sup> He believed that it would pave the way to political and moral regeneration of the villages.

Electricity supply became a byword for modernity. The possibilities opened up by electricity moved beyond simple consumption of power.<sup>14</sup> In Colonial India and elsewhere across the world, inadequate lighting in public areas meant that night was a source of moral and political subversion. For the colonial government, unlit towns became a source of anxiety. As a result, some of the major cities in British India were electrified by the late 19<sup>th</sup> and early 20<sup>th</sup> century. Although a host of other materials were used for lighting until electrification, the rationale for public lighting remained unchanged.

Similarly, in the United States, the arrival of electric lines to the American Midwest

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<sup>11</sup> Yenda Srinivasa Rao, "Electricity, Politics and Regional Economic imbalance in Madras Presidency, 1900-1947", *Economic and Political Weekly*, Vol. 45, No. 23, June 5-11, 2010, p. 60

<sup>12</sup> Srinivasa Rao, "Electricity, Politics and Regional Economic Imbalance", p. 60.

<sup>13</sup> Srinivasa Rao, "Electricity, Politics and Regional Economic Imbalance", p. 62.

<sup>14</sup> Robert A. Caro, *The Years of Lyndon Johnson, The Path to Power*, New York: Vintage Books, 1990, pp. 691-727.

radically changed gender roles and urbanisation. Robert Caro points out how the introduction of electric-powered washing machines in the 1910s, changed women's health in the American Midwest. Earlier, they used to wash clothes and iron clothes under backbreaking conditions that prematurely aged them and created a host of other health issues. With the introduction of the washing machine and iron boxes that ran on electricity, women's health and economic standing gradually improved.

Conversely, Andrew Needham in his book *Power Lines*, shows how electricity transformed the American Midwest and made the urbanisation of Arizona possible. Needham argues that the demand for electricity in Phoenix, Arizona, drove coal speculators to extract the mineral from the neighbouring Navajo country. The unbridled extraction caused innumerable harm and environmental problems for the Native Americans, whose lands were left desolated to fuel the urbanisation of Phoenix.<sup>15</sup> Therefore, the history of electrification should not deal exclusively with the questions of demand and supply. It must also peer into how it influenced social, cultural, and environmental transformations across time and space.

## Arrival of Electrical Power

Electricity was brought to Kerala by a British Company in 1900. The Kannan Devan Hill Produce Company set up a

small hydroelectric project across the Muthirapuzha and Periyar river at an operating capacity of 200kw.<sup>16</sup> This project was mainly aimed at supplying electricity for the Kannan Devan Plantation and power necessary units. It was later stepped up to serve a bigger area, but the purpose of scaling it up was to ensure seamless electricity supply to the plantation and not electrifying the nearby villages. Similar efforts at electrifying large areas were undertaken by the Travancore government in the early 20<sup>th</sup> century, where engineers and foreign technical expertise enabled the state to come up with a blueprint for a hydroelectric project. Cochin state, however, was a late comer in this field.

From the administrative report published in 1914, we get to see that government offices and palaces had electricity generators. Though we do not know who supplied them or what their operating cycles were, the gas electric plants that were put in place were site specific. For instance, it could only power the respective units and did not have a wide range of applicability. Hill Palace in Tripunithura, Maharajas College, and the Merry Lodge in Trichur are mentioned in the administrative reports as the early recipients of electric power in the Cochin state.<sup>17</sup>

After the boom of industries and war economy owing to the First World War, the questions regarding the supply of cheap

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<sup>15</sup> Andrew Needham, *Powerlines: Phoenix and the Making of the modern Southwest*, New Jersey: Princeton University Press, 2014.

<sup>16</sup> <https://kseb.in/mainarticle/eyJpdil6li9FUXIESIFrZH QzL2dLbWxBME5POEE9PSisInZhbHVlIjoiUHprTjdoRO JLbzdXUVhpVXQzTHlYUT09IiwibWFjIjoiZmUxNWJhZ GVIOTNiMmJkNmQxYzgzYzY2NzI4NjhkMWNlNTJmND>

[ZLMWlxMmYyMTNmNTlkNTFiZmE2NWY2OWQ3OCIsIn RhZy16liJ9.](https://kseb.in/mainarticle/eyJpdil6li9FUXIESIFrZH QzL2dLbWxBME5POEE9PSisInZhbHVlIjoiUHprTjdoRO JLbzdXUVhpVXQzTHlYUT09IiwibWFjIjoiZmUxNWJhZ GVIOTNiMmJkNmQxYzgzYzY2NzI4NjhkMWNlNTJmND)

<sup>17</sup> Report on the Administration of Cochin for the Year 1089 M.E. (16 August 1913 to 16 August 1914), Ernakulam: Cochin Government Press, 1914, 15, Tamil Nadu State Archives Library.

electricity became sonorous in Cochin. Through a proper utilisation of its natural resources, the Government of Cochin looked at various avenues to generate electricity. In 1916, the waterfalls in the Chalakudy river were scouted for the said purpose. The administrative report says:

The preliminary investigation into the waterfalls in the Chalakudy river which the realignment survey of the Forest Tramway brought prominently to notice showed the prospect of establishing a power scheme of considerable magnitude. The further expert examination of this project has since been completed and there can now be no doubt that power can be generated at an exceptionally cheap rate owing to favourable natural conditions. Now that this possibility has been established, certain industries which depend on the use of the power available are under examination.<sup>18</sup>

The report was prepared by the British Westinghouse Electric and Manufacturing Company Ltd., a subsidiary of the renowned American company. The same project received a vigorous appraisal in 1918 by the Chief Electrical Engineer of Mysore, Mr. S.G. Forbes, who highlighted the potential of the project to supply electricity to Ernakulam and Trichur.<sup>19</sup> However, the scheme was kept in a limbo for more than a decade, after it was finally put into motion. Despite the

commencement of this project, several electric companies started operating within Cochin State. In 1927, the Cochin Legislative Assembly passed the Cochin Electricity Supply Act, which was aimed to provide a legal framework for generating and supplying electricity in the state. First, the harbour reclamation project required the utilisation of heavy machines that ran on electricity. Second, the industrial demands of the state required the supply of cheap electricity for its activities. However, most of these industries were foisted up by diesel electric generators whose limited operating capacity hindered the smooth functioning of the factories. Therefore, a coherent plan was thought out by the members of the Cochin Legislative Council to address these issues.

The Act following upon the premises of Indian Electricity Act of 1910, started granting licenses to private companies to meet the energy demands.<sup>20</sup> The Cochin government granted a license to the Cochin Electric Company in 1929 to supply electricity in Mattancherry. Similarly, the Madras Government granted a license to Crompton Engineering Company Ltd for electricity supply in British Cochin.<sup>21</sup> The Cochin Electric Company supplied electricity generated by a steam power station at 75 K.W. to Mattanchery whereas the station at British Cochin consisted of three diesel units with 105 K.W each.<sup>22</sup> Apart from these developments, another state-run electricity company was also

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<sup>18</sup> Report on the Administration of Cochin for the Year 1092 M.E. (16 August 1916 to 16 August 1917), Ernakulam: Cochin Government Press, 1917, p. 17.

<sup>19</sup> Report on the Poringalkuthu Hydro-Electric Scheme and the Supply of Electricity to the State of Cochin, presented by Rendel, Palmer and Tritton,

Consulting Engineers, Westminster SW1, R.45, E.R.A., 1.

<sup>20</sup> The Cochin Electricity Act (III of 1102 M.E), 1927, C.207, E.R.A.

<sup>21</sup> Report on Poringalkuthu Hydroelectric scheme, 2.

<sup>22</sup> Report on Poringalkuthu Hydroelectric scheme, pp. 2-3.

planned by the Cochin State in 1926. The Thanikudom Hydroelectric Scheme was proposed by the government in 1926 but nothing came out of it.<sup>23</sup> Nevertheless, the Cochin Electricity Act paved the way for the systematisation of power supply in the state.

## Increasing Food Production

Interestingly, the Trichur Electricity Corporation Ltd. (TECL) was a curious licensee. In 1931, TECL did not have any independent power generating unit owing to its recent ascension to the licensee rank.<sup>24</sup> Therefore, the Poringalkuthu Hydroelectric Project was initiated with the purpose of including Ernakulam and Trichur in its grid. Essentially, all the major towns in Cochin had an electric company to supply their energy needs. But for Trichur, the company had a different purpose—de-watering kole lands.

Kole lands, or “bumper yield lands” are wetlands in Trichur and Malappuram districts, watered by the numerous lake and river systems adjoining the region. A rough translation of kole, which Malayalis use as a figure of speech, is to show excitement or highlight their luck. For instance, “kole adichallo!” roughly means what great luck! Most of the times, these lands are available for cultivation, with only a few portions submerged. However, with the coming of steam-operated

dredging machines, it was possible to reclaim more land from the water for cultivation.<sup>25</sup> Depending on how they are drained, the kole lands are separated into two categories. First, if it was drained through an irrigation wheel, it was called *karakkole*, and if it was drained through steam dredgers or with any other mechanical apparatus, it was called *purankole*.<sup>26</sup> *Karakkole* was mainly determined through the natural water levels owing to the monsoon season. For instance, if the water level was too high, the irrigation wheel would not be able to pump out the waters, which would later affect the health of the crops. Conversely, if it was too low, there would not be proper irrigation.<sup>27</sup>

The kole farmers presented a memorandum to the state to institutionalise the tax base of kole cultivation and ensure a regular supply of steam dredgers for draining the field in 1914.<sup>28</sup> The demands for rationalising this arrangement continued up till 1926, when the government convened a Kole conference to discuss how to improve kole cultivation.<sup>29</sup> Although the general suggestions made by the government was to divert the excess water to nearby channels and lakes, the discussion on the general methods on how to drain these lands were absent from the official communique.<sup>30</sup>

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<sup>23</sup> Letter dated 13 October 1926-Trichur from Mr. V.K.A. Menon, Chief Engineer to Dewan of Cochin TS

<sup>24</sup> Report on Poringalkuthu Hydroelectric scheme, 2.

<sup>25</sup> V.K. Kunjan Menon, ‘Kolekrishi’, *Mangalodayam*, 1089 M.E. (1914), 1.

<sup>26</sup> Kunjan Menon, ‘Kolekrishi’, 1.

<sup>27</sup> Kunjan Menon, ‘Kolekrishi’, 2.

<sup>28</sup> V.K. Kunjan Menon, *Kolekrishiyepatti oru Memorandum*, 1924.

<sup>29</sup> Letter dated 18<sup>th</sup> December 1926, Trichur from Dewan of Cochin TS Narayana Ayyar to Mr Narayana Pisharoty, Sarvadhikariakkar, A report on Kole Conference held on 17 December, DOC File 153, ERA.

<sup>30</sup> Letter dated 3 January 1927, Irinjalakuda from Dewan of Cochin T.S. Narayana Ayyar to Mr Kasturi Ranga Iyer, Dewan Peshkar, on the geographic impossibility of draining Kole lands, D.O.C File 153, ERA.

Then, in the report submitted by the consulting engineers of the Poringalkuthu Hydroelectricity Scheme, Rendel Palmer and Tritton in 1932, the expected revenue of the Trichur Electrical Company came from de-watering the kole lands. Furthermore, they pointed out that, if the government did not assent to the electric pumping of the kole lands, the energy requirement allotted to this segment could be diverted to other agricultural purposes.<sup>31</sup>

The report, which was published in 1932, came from a point of confidence. The world emerged from the Great Depression, and agricultural prices were rising across the world.<sup>32</sup> Perhaps, a detailed study on this aspect of agricultural productivity of the Cochin State could explain the ways in which electricity and society has commingled. Nevertheless, compared with other electric companies, Trichur Electric Company was the only one that was allotted the responsibility of de-watering kole lands. Unfortunately, further details on the development of this scheme are absent in the archives. However, with how the state proceeded further and with the international turn of events, we can make a detailed estimate on why TECL remained while the other companies merged with the KSEB.

Though this section can be considered as an embedded factuality, where indirect factual bases indicate a general trend, I

apologise for the speculative nature of this argument.

## Marking Developmental Modernity

Ever since the allocation of electric power for agricultural purposes, TECL had an intimate relationship with the growth of food. The number of agricultural and experimental research stations put up by the Cochin Government shows how Trichur was integral to the agricultural productivity of the state<sup>33</sup> Furthermore, there were industries that were closely tied with the agricultural sector in Trichur.<sup>34</sup> The concatenation of these agro-industrial belt made the work of TECL important for the economic robustness of the state. During the Second World War, the food shortage affected the states in Kerala badly. As a temporary measure, the Grow More Food campaign opened up new lands in the hills for cultivating staple crops. We do not know yet on how these schemes were literally powered. However, its presence in the Chittur Taluk, whose lines were taut from Trichur Electric Company, indicates that the latter may have supplied the requisite energy for their projects.

Like the Kannan Devan Hill Produce Company, which operated in the administrative region of Munnar, offered their services initially for economic purposes, the Trichur Corporation Electricity Department, through its unique

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<sup>31</sup> Report on Poringalkuthu Hydroelectric scheme, pp. 14-6.

<sup>32</sup> Joshua K. Hausman, Paul W. Rhode and Johannes F. Wieland, "Recovery from the Great Depression", in *American Economic Association*, Vol. 109, No. 2, 2019, p. 430

<sup>33</sup> Letter dated 27 May 1925, Trichur from I Raman Menon, Superintendent of Agriculture and

Panchayats to Dewan of Cochin T.S. Narayana Ayyar about Ollurkara Farm in Trichur, DOC File 131, ERA.

<sup>34</sup> Administration Report of the Department of Industries and Commerce in the Cochin State for the year 1933 to 1946 shows the number of Industrial houses in Trichur.



location between the great rivers of Kerala and the Western Ghats, achieved the unique position of being able to coordinate several activities that required electricity. As an administrative centre that was proximate to the three ecological zones of

Kerala, TCED stood at the cusp of Kerala's growing needs. As Jawaharlal Nehru said, dams are the temples of modern India, TCED emerged from a space that required it to be the placeholder for modern Kerala's ambitions.

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