LONDON AREA POWER SUPPLY

A Survey of London's Electric Lighting and Power Stations

By M.A.C. Horne

LONDON AREA POWER SUPPLY

Background

Ignoring a small number of experimental schemes that did not provide supplies to which the public might subscribe, the first station that made electricity publicly available was the plant at the Grosvenor Art Gallery in New Bond Street early in 1883. The initial plant was temporary, provided from a large wooden hut next door, though a supply was soon made available to local shopkeepers. Demand soon precipitated the building of permanent plant that was complete by December 1884. The boiler house was on the south side of the intervening passage called Bloomfield Street and was connected with generating plant in the Gallery's basement by means of an underground passage. The increased capacity allowed many more local electricity consumers to be supplied from the premises via overhead live wires.

In another 1883 venture, the enterprising Gatti brothers installed a private station in their huge Adelaide Restaurant in the Strand and this was soon used to supply electricity locally. Some notes about this installation are given at the end. The brothers also had an interest in the nearby Adelphi Theatre which was supplied by means of a connecting electricity main laid along Maiden Lane; this not entirely legal connection appears to have been the first main laid in a public street, rather than being carried in a dedicated service tunnel or via overhead wires. It was later found convenient to shift the supply source to a dedicated power station next to the theatre in Bull Inn Court, again much increasing the capacity to supply electricity to outside consumers.

The Electric Lighting Act 1882 was intended to favour the supply of electricity through the 'municipal enterprise' of local authorities, some of which already supplied gas, water and tramways. The Act provided general powers for local authorities to exploit wayleave rights to break up streets and to raise money for electric lighting schemes. Alternatively the Board of Trade could authorise private companies to implement schemes and benefit from wayleave rights. They could either do this by means of 7-year licences, with the support of the local authority, or by means of a provisional order which required no local authority consent. In either case the local authority had the right to purchase the company concerned after 21 years (or at 7-year intervals thereafter) and to regulate maximum prices. There was no power to supply beyond local authority areas or to interconnect systems. It is important to note that the act did not prevent the creation of supply companies which could generate and distribute outside the terms of the act and without being subject to the onerous purchase conditions. However, where a company sought neither licence nor order, then it had to make its own arrangements for wayleaves without statutory support. In practice this meant either having to use overhead lines with the consent of everyone over whose property the ugly lines ran, or using existing tunnels and subways. Without powers to break open streets it was, in practice, very difficult for an electricity company to develop. A few companies did develop without powers—though these were mainly companies predominantly supplying electricity for industrial power or traction purposes rather than lighting.

Local authorities at this time were either the larger parishes or local boards of works which were aggregations of the smaller parishes; in any event they were very small areas by modern standards. From 1900 they were superseded within the County of London area (today's Inner London) by the Metropolitan Boroughs, though they tended to follow the earlier boundaries. Outside the County of London the relevant local authorities were (after 1888) usually Urban or Rural District Councils or Boroughs and County Boroughs.

Lighting was mainly by means of arc lamps (that required direct current supplies) or from incandescent lamps which could use either direct or alternating current; neither were at first conspicuously reliable, though lamp technology evolved rapidly. Although current was only intended for lighting use, there was in any case little other equipment in these early days that used electricity.

Development from 1888

The regime established by the 1882 Act was not appealing to the formative electrical supply industry and is widely regarded as stifling development. In fact there was no company at all prepared to supply electricity under the 1882 Act, nor any local authority. The fault was not entirely the result of the Act since the business risks were quite high with the slow state of technical development, but it didn't help. To try and move development forward, in 1888 the local authority purchasing rights were extended from 21 to 42 years (thence at ten year intervals) and local authorities had to be consulted about the issuing of a provisional order, though unreasonable objection could be overruled. This longer period of exclusivity gave private companies more incentive to develop electricity supply schemes and coincided with more reliable and economic plant becoming available. In consequence a great many schemes began to come forward and over the following decade 40 or so power stations came on stream and most urban areas began to receive their first electric lighting supply.

In 1889 the Board of Trade sought to standardize provisional orders and discontinued the issue of licences. It also indicated that orders might be issued to companies to supply over larger areas than a single local authority and that such orders might be issued subject to capacity to deliver. At this time the areas of London's seven main suppliers was fixed.

Supplies remained highly localised until 1900 when Ferranti's Deptford station opened and supplied current at high tension to a central London distribution system, following which high tension distribution from large power stations slowly became the norm. By 1903 London had over 70 stations of hugely varying size, age and efficiency. Although Deptford was still driven by reciprocating engines, most large plant built from around 1903 began to exploit the use of the steam turbine.

In 1898 the scene was set to allow a new kind of power company to be formed, this time by Act of Parliament, not subject to possible local authority purchase and not restricted by existing local authority area. These power companies were allowed to sell electricity in bulk to existing or prospective lighting companies. These powers were not used extensively, and in London the main company so formed was the North Metropolitan Power Supply company which erected a large power station at Brimsdown, at least partly required to supply the associated tramway company. NorthMet (as it was called) came to supply many rural areas outside London, but also came to supply in bulk within London (or purchased) several traditional lighting undertakings.

Because of the way licences and orders had been issued, the supply areas were usually coterminous with local authority areas (in whole or in part, and whether the supply was operated by Councils or not). Suppliers initially tended to distribute continuous (or direct) current supplies which were more suitable for arc lighting and motors and had the additional advantage of being able to operate in parallel with battery storage systems. Batteries were generally used to augment supplies when demand was high, or to provide the entire load when demand was low, being recharged when convenient. In the case of Chelsea, batteries always supplied the entire load, a duplicate set being charged up at the same time and the battery banks being switched over when the charging bank was full; this provided an extremely stable supply free of flickering and brief periods of darkness during switching. Other areas provided alternating current supplies.

The advantage here was the ability to transform the voltages so as to transmit current at high voltage for primary distribution and step it down to a lower level for local distribution.

Within the County of London the Board of Trade decided that competition had to be promoted. In essence this meant that many areas had more than one supplier, a few had three or more. Access to direct current was felt important so that competing alternating current suppliers were avoided if at least one was able to supply continuous current. This well-intentioned but extraordinarily inefficient process soon meant that a bewildering number of different supply systems, voltages and frequencies were in use.

Outside the County it was usual for only one undertaker to be authorized, and generally the areas were somewhat larger. Many authorities decided not to generate themselves but to draw current from NorthMet who had bulk supply distribution rights over a huge area north and north east of London. Over time NorthMet became the dominant supplier and acquired control of a number of the smaller local companies. Even so, over 60 power stations were established in the ring immediately outside the County border.

Various electricity companies began to seek specific statutory powers to overcome the restrictions of the 1888 Act and, since the objectives were felt reasonable, this resulted in the passing of the Electric Lighting Act to be passed in 1909.

This act allowed the Board of Trade to permit any authorized undertaker to use compulsory powers to buy land to build a generating station and to break up streets to allow bulk supplies to be laid in, to or between areas. For the first time it also permitted suppliers to provide bulk supplies to other undertakers. By this means it was hoped to reduce the number of inefficient power stations in favour of larger more efficient plant, and also to make a start on standardizing some aspects of the supply. In fact very few power stations closed as a result of this initiative and although bulk supplies were laid in on some scale it the effect was to augment supplies from inefficient stations rather than to replace them. The First World War effectively stifled further development, as did post war restrictions on the use of electricity. The story really resumes in 1919.

By 1921 there were in Greater London 80 electrical undertakings operating between them 70 generating stations employing 50 different systems of supply at 24 voltages and 10 frequencies. As already implied, this sort of nonsense had been foreseen and resulted in the Electricity supply act of 1919 which established Electricity Commissioners responsible to the Ministry of Transport who had taken over responsibility for electrical matters from the Board of Trade. The Commissioners were supposed to co-ordinate affairs but could make little headway with limited powers. The act also authorised the establishment of Joint Electricity Authorities. These were able to co-ordinate within large specified areas and, if necessary, assume control of generating plant to improve efficiency. Not much use was made of this provision.

In Greater London, a London and Home Counties Joint Electricity Authority was established on 31st July 1925 and covered an area of 1841 square miles. This grand body had very little immediate effect although the powers of local authorities in the inner London area ultimately to acquire electricity undertakings (under the 1882 and 1888 acts) were transferred to the new body with an effective date of 1971 (replacing the 1931 date that was creeping up fast) In 1931 it obtained an order that transferred to it the compulsory purchase powers of ten local further local authorities, followed by another order in 1932 adding in a further 22. These areas were all in the Home Counties and many were highly rural. Further areas were added later, and it is clear that as a general principle the long term aim was for the new body to directly control the entire generating and distribution activity within their area. In fact this grand plan was largely overtaken by events. However, by means of orders the authority did take over

responsibility for distribution in a 190 square mile area of Surrey and outer south-west London from 1st January 1931, covering some 23 local authority areas (some only in part); this included all generating plant, which it proceeded to upgrade, and many power stations were interconnected. The authority also supplied electricity in bulk to a number of existing electricity undertakings, including several in inner London (mainly local authorities who seemed to have difficulty in keeping their plant up to date). These included: Hammersmith Borough (Jan 1930), Islington Borough (Dec 1930), Hornsey Borough (Nov 1929), Barnes UDC (Dec 1930), Finchley UDC (Jan 1931), Richmond (Surrey) Electric Light & Power Co (Jul 1931), Kingston Borough (Jul 1931), East Ham County Borough (Apr 1932) and Wimbledon UDC (Oct 1933). In many cases these were supplementary supplies to those already bought in or self-generated.

In 1925 many of the London electricity companies had already worked out that generating in bulk with modern efficient plant was the way forward. By agreement an Act was obtained that year to establish the London Power Company, which came into being in 1926. The majority of the London distribution companies then sold their generation plant to the London Power Company, which in turn agreed to supply in bulk the whole of the needs of the distribution companies, at the same time undertaking to modernize the generation plant and reduce costs. Not all of the London companies fell in with the scheme, but the following did:

Brompton & Kensington E.S. Co
Charing Cross E.S. Co
Chelsea E.S. Co
London E.S. Corpn
Metropolitan Electric Supply Co
Kensington & Knightsbridge E.S. Co
Notting Hill E.L. Co
Westminster Electric Supply Corporation
St James's & Pall Mall E.L. Co

A technical inclusion was the Central Electric Supply Co (owners of Grove Road power station) jointly owned by Westminster Electric Supply Corporation and St James's &Pall Mall Electric Light Co.

The London Power Company thus took full control of nine power stations and immediately embarked on a programme to modernize Deptford (West), Bow, Grove Road and Willesden, the remaining five stations being closed down within three years. At the same time the London Power Company began planning several brand new 'efficient' stations, notably Deptford East (opened in 1929) and Battersea (opened in 1933).

Of the companies that did not subscribe to the London Power Company initiative the main ones were the County of London Electric Supply Company, the City of London Electric Supply Co, the South London Electric Supply Co and the South Metropolitan Electric Supply Co. A separate Act of 1925 allow them to interconnect their systems to spread the load. The County company erected a vast new station at Barking, allowing the other companies to draw from this supply. The existing stations largely remained open but Bengeworth Road closed in 1928 as not suitable for modernization. The local authority and outer London stations were not part of these schemes, though some were beginning to draw bulk supplies where their plant could not conveniently be modernized.

With progress so slow, profound legislative change had to be made. In 1926 a Central Electricity Authority (CEA) was established that undertook to buy all power from the most efficient power stations in the country and sell it to any authority who wanted it. The power stations concerned would be interconnected by a vast distribution network (the national grid) which would be able to supply power efficiently at lower cost than individual supply companies could generate themselves. The power stations from which the CEA would take a supply would become 'selected' stations, and those not selected (the less efficient ones) would ultimately be closed down as

uneconomic or replaced by new and efficient plant. The grid was created between January 1928 and September 1933[1] and operated at 132kV, mainly distributing by means of overhead lines. On completion there were throughout the UK 162 selected stations, though only 21 supplied continuously. There were 440 other stations though the number diminished very quickly as further bulk supplies were taken from the grid. This spawned the erection of a small number of gigantic – and relatively efficient – generating stations at the ultimate cost of 'deselecting' small out of date generating plant which ultimately closed, purely under the commercial dynamics of the grid scheme.

In parallel with this process began the painfully slow operation of standardizing distribution voltages at 240/415 (or 230/400) volts, alternating current at 50Hz. Frequency standardization was essential if alternating current supplies were interconnected and by the late 1920s alternating current distribution was now technically far superior to direct current and the mixture of systems and voltages was becoming exceedingly inconvenient for users and equipment manufacturers alike. However, even in the late 1960s there were four areas of London that still offered direct current supplies. In 1969 non-standard voltages were still supplied in Chiswick (200/415V ac and 220/440V dc), Croydon, West (200/400V ac as well as standard), Deptford (110V ac plus standard), Epsom (240/480V ac plus standard), Fulham (200/346V ac plus standard), Hounslow and Isleworth (240/480V dc plus standard), City of London (210/420V ac, 205/410V dc plus standard), Norbury (200/400V ac) and Selhurst and Thornton Heath (230/460V ac plus standard). In central London this was not so much a consequence of dilatory action in converting supplies (as alternating current was available everywhere) as the need for direct current for theatres that still used arc lamps and the Fleet Street printing presses, which were heavy direct current users. The last press (Daily Mail) did not close until 1987 and was still using dc, eliminated soon thereafter.

By 1940 the Central Electricity Board grid had developed into a ring main around London running between Watford, Brimsdown, Barking, Northfleet switching centre, Croydon, Beddington, Wimbledon, Leatherhead, Woking, Uxbridge and back to Watford. These mainly double-circuits all operated at 132kV. Greater London itself was served by a 132kV double circuits between Leatherhead/Wimbledon and Battersea, Watford/Uxbridge and Willesden grid substation, and Northfleet and Deptford West via Eltham. From these main centres (and interconnecting the selected London power stations) a number of 66kV or 33kV circuits were in place. It will be seen that the grid mainly connected existing power stations which also served as switching centres with connection to the local distribution companies mainly using pre-existing circuits. Of the few dedicated switching centres, Northfleet was by some way the largest, connecting seven 132kV circuits and two 32kV circuits (which linked to Gravesend).

The need for efficient stations to feed the grid resulted in several huge power stations being built in conjunction with the scheme. In the London area Battersea (480MW) was first and was commissioned in 1933 and Fulham (310MW) was entirely modernised in 1936; in each case pre-existing privately-owned generating authorities carried out the work, not the CEB. These new, together with other large and modern, stations provided the grid's base load and successively smaller and less efficient stations operated on a 2-shift or peak load basis (with some mothballed during summer months).

After the Second World War electricity supply was nationalized; from 1948 the national grid and all UK power stations transferred to the British Electricity Authority (which eventually became the Central

[1] The final pylon of the original grid was erected on outskirts of the New Forest on 5th September 1933

Electricity Generating Board) and all local distribution transferred to area boards. Inner London became the responsibility of the London Electricity Board and much of outer London became part of Eastern Electricity (with South Eastern and Southern in outer south London).

It became the policy of the British Electricity Authority to construct or rebuild power stations that were near the various coal fields, the theory being that is was more expensive to move coal around than to move electricity. Indeed, this created the famous merry-go-round trains that just moved loads of thousands of tons of coal the few miles between mine and power station as though it were a conveyor belt. To distribute this electricity a new super-grid was constructed during the 1950s basically to export electricity from the generating areas (mainly the Midlands) to the heavy areas of usage such as London. The supergrid deployed double circuits of double conductors operating at 275kV. From 1965 the need to carry even more power as usage increased resulted in new circuits or upgraded circuits operating quad cables at 400kV. The new found ability to ship quite so much electricity into the London area at comparatively low cost is what finally sounded the death knell for the London power stations. These were progressively withdrawn from service as they approached the end of their useful lives, or sometimes before where performance was particularly poor. 32 London stations closed in the period 1960-1980, and 15 more subsequently. In the 1970s the area boards took over what was left of the 132kV network (and a part of the 275kV system) which was largely confined to local distribution.

There are power stations on the London rim and elsewhere in the south east. These are becoming important for several reasons. First native coal is no longer used so energy imported from Midlands stations is now more expensive, secondly transmission losses are very significant for long distance transmission. Thirdly, oil and gas stations can really go anywhere and it is more efficient to put them where the load is. It is entirely possible that we will see a lot more generation in or near London in the future.

By 1984 The London area's only surviving power stations were: Watford (Gas Turbine), Taylor's Lane (Gas Turbine), Brunswick Wharf (oil, but with closure imminent), Belvedere (both oil) and Littlebrook (gas turbine with oil station being commissioned). Much of London's power came from outside, and by now Greater London had two ring mains, both operating as 275kV double circuits. The outer circuit ran Watford, Elstree, Waltham Cross, West Thurrock, Northfleet, South Croydon, Chessington, Laleham, Bulls Bridge (Uxbridge), Watford. An inner ring main ran, Acton Lane, St John's Wood, Tottenham, Hackney and West Ham (alternative circuit via Redbridge), Barking. Northfleet, Hurst, New Cross, Wimbledon, Ealing, Acton Lane. Interconnections between the rings were made Chessington to Ealing and Croydon, Waltham Cross to Tottenham, and at Northfleet. There was also a high voltage dc circuit at 266kV linking Kingsnorth, Croydon and Willesden. The electricity boards picked up supplies for transmission at 132kV or lower for distribution to their own distribution stations.

Electricity is now de-nationalized with the grid now operated by National Grid Transco; the distribution networks (of the former area boards) around London are now mainly operated by EDF Energy, and a small number of power stations are operated by a number of private concerns. The principle of buying electricity from the most efficient stations has endured, but it is sold to any number of retail concerns and merely distributed by the distribution companies (which may or may not be in the retail

business themselves).

Today there are only four significant generating stations in the London area, all using modern technology, though two of them are on historic sites. There are other power stations outside the London area, including seven in the Thames Estuary, but the grid supplies the vast bulk of electricity to London, which uses 20 per cent of the country's electricity. The London sites are:

- Barking Reach (1GW Combined Cycle Gas Turbine station), new site – Thames Power;
- Taylors Lane (132MW Willesden) (Gas Turbine) – E.ON (formerly Powergen). New station opened 1979 on site of older one closed 1972.
- Croydon (80MW Combined Cycle Gas Turbine station) – Croydon Energy (new site)
- Brimsdown [Enfield] (396MW) – Enfield Energy Centre Ltd;

Enfield Power Station was originally a private enterprise but was purchased by E-On on 6th May 2005 and is currently E.ON UK's newest Combined Cycle Gas Turbine (CCGT). It has one single shaft unit with a generating capacity of 400MW {392MW}[2].

[2] The Gas Turbine is a GT26B single shaft configuration. Air is drawn in and compressed 30 times before mixing with natural gas. Low emission burners are used in two combustion chambers powering a single High Pressure and a 4 stage Low Pressure Turbine. Gas Turbine exhaust gas generates steam that is fed to a Steam Turbine before condensing in an Air Cooled Condenser - no water from the nearby waterways is used for cooling.

Situated within the M25, Enfield sits in an urban environment close to homes and businesses, every care is therefore taken to minimise our impact on the area. Air cooled condensers have been installed on the site so as to reduce visible emissions plume from site. No water is abstracted from the River Lee, all station discharge is to the main sewer system.

In addition, there are several smaller units primarily supplying local needs but also returning energy to the national grid. These include:

- **Smithfield Power Station** – operated by Citigen (53MW Combined Cycle Gas Turbine station based on 2 Wärtsilä Vasa 18V46GD internal combustion engines supported by twin ABB VTR 5644-42 turbochargers). Located behind the façade of the former Port of London Authority cold store the station also provides hot and chilled water for district heating and air conditioning loads. Citigen was formed in 1991 and went on load around 1995. Supplies 25MW to the grid and 28MW direct to local buildings. Citigen is now owned by E-On (in ownership of Eastern Energy who purchased company from British Gas in 1998). The site is very close to that of the former Smithfield Markets Electric Supply Co, and may be an extension of the old site[3].
- **Whitehall Power Station** – Located in the Ministry of Defence (War Office) building this station was opened on 16th February 1999 as part of the Whitehall District Heating Scheme and supplies heat to 23 different government offices (270,000 sq ft). The system capacity is 4.7MW electricity and 9MW of heat. The building itself uses 400kW of energy and the balance of 4.3MW is returned to London Energy's distribution network. The GT units were developed by Alstom and the company operating the scheme is Elyo Cofreth. (There are smaller CHP schemes at government offices Ashdown House and Eland House). The Whitehall scheme supersedes an older district heating scheme dating back to the 1930s (probable when the War Office building was built), though the

[3] See: http://www.eon-uk.com/638.aspx and http://www.cityoflondon.gov.uk/Corporation/living_environment/sustainability/climate_change/reducing_emissions.htm.

boilers appear to date to 1951; it provided a community heating scheme from 1966 and operates through 12km of insulated mains. End of boiler life in the 1990s allowed the opportunity to be taken for an enlarged and more efficient system, it went off line in 2002 owing to building refurbishment and was switched on again on 25th October 2005[4].

- **South-East London Combined Heat and Power Limited (SELCHP)** – a scheme promoted by several south east London boroughs and located in Landmann Way, Lewisham (in angle where Southern/South East Trains rail lines split north of New Cross). Utilizing solid waste the plant has a capacity of 30MW (enough for 50,000 homes) and returns current to the national grid. The scheme was first identified in 1986 and came on load in early 1994. One reason for site's location was convenient access to the electricity distribution network[5].

Other significant CHP schemes in the London area are operated by:

- BBC (Shepherds Bush)
- Camden & Islington Community NHS Trust (Royal Free Hospital, Hampstead)
- Imperial College of Science, Medicine and Technogy (Kensington)
- St George's Healthcare NHS Trust (Tooting)
- Thames Valley Power Ltd (Heathrow)

Greenwich Generating station – a standby station for supplying the London Underground in the event of major grid failure, is operated by UK Power Network Services Powerlink and has gas fired aero engines. The station provides input to the national grid when convenient to do so, keeping otherwise standby plant in operation.

[4] See: http://www.gnn.gov.uk/content/detail.asp?NewsAreaID=2&ReleaseID=174756%20

[5] See: http://www.energy.rochester.edu/uk/selchp/

RECOLLECTIONS OF DC SUPPLIES IN LONDON

The following was supplied by a contributor (J Stafford Baker) and sheds light on some of the issues that flowed from DC supplies in London. It is reproduced with his consent.

> In my early days in the printing industry I worked for a firm called Eden Fisher & Co, who had several print works, one called George Reveirs Ltd, located in Rosebery Avenue EC. Now whilst I was there, the power supply, which had until then been DC, was compulsorily altered to normal 50 cycles 240 AC, this was at the command of the Electricity supplier. To get authority to do this they had to replace **all** the motors and associated control gear in the works, **free**, and despite careful pre-planning, it over ran the two days of a week-end, and some machines were not running till the Tuesday afternoon. The printing press minders (there were many other types of machines as well) were vociferous in criticism that the new control set-ups for fast and slow were not so sensitive, especially the 'inch' controls. They got used to it in due course.
>
> Chatting to some of the electricians from the Board doing the work, I asked how come we had DC, it was a very ancient system they told me, retained firstly at the special request of all the theatre managements.
>
> The supply still then remaining covered a line from Piccadilly Circus, all the way up Shaftesbury Avenue, and north westwards up Rosebery Avenue. How far either side (apart from certainty about Neal Street) and how far North I don't know. But I do recall a lovely description of the main (underground) supply switching room, if the switches were thrown on load, sustained arcs over a foot long could develop, which were quenched with

a sort of wooden paddle.!!!!!! Glad I didn't have to do it! This room was somewhere in the Piccadilly Circus/Leicester Square area as I recall.

The date for this change-over was about 1959 plus or minus 2 or 3 years or so.

Hope this is of interest

J. Stafford Baker

PS My stepmother's flat was in Neal Street, and had previously been a DC supply. She had not let the men in to do the conversion work (can't recall why) so in due course she had to buy some new items of equipment, as her fuse board and wiring was still the original!!! I did replace all that I could myself, and provided a grounded earth, in a rather amateur way. Don't worry, all those buildings are long since demolished and replaced!

Some Notes about the Adelaide Restaurant Installation (supplied by John Reynolds)

Dear Mike,

At last I have managed to get pen to paper re Adelaide. I hope you won't find it all too boring. First I must make it clear where Gatti's stood in 1937/39 (when I lived there).

The whole block of buildings within the triangle The Strand, Adelaide Street and William IV Street was involved with Gatti's.

1. The entrance in the Strand led into the Strand Bar and Restaurant and then into the main ground floor Function Room.

2. The Adelaide Bar entrance was roughly in the middle of Adelaide Street, opposite the open area behind St. Martins in the Fields, and it also led into the ground floor Function Room.

3. The Grand Entrance for the ground floor Function Room, Green Room, the second floor Function Room (Adelaide Room) and the third floor Masonic Rooms, was in the middle of William IV Street and opposite Charing Cross Hospital.

4. On the corner of the Strand and Adelaide Street was Coutts Bank and there was a miscellaneous selection of shops filling in the frontages of all three streets.

5. The downstairs Function Room that linked everything else, was enormous and to illustrate this, in 1939 the Electrical Trades Union held a celebratory dinner to which, some 800 people sat down ! I have a photograph of the tables set up for the occasion. Incidentally, I learned to roller skate in it when nobody else was around.

6. With war looming, the owner of Gattis, an American, abandoned the place and returned to the U.S.A. where he joined the Board of Metro-Goldwin-Meyer and my father never heard from him again. Trade was rapidly falling off and the bills still kept coming. Father being unable to pay, the electricity bill the electricity was cut off.

7. In the basement of the Adelaide Bar were two switchboards. One held the main incoming supply and its distribution; the other held the incoming and outgoing supplies for the London Theatre Emergency Ring and Gattis had a feed from the latter. A change over of switches and lo we had light in our flat. It was near these switchboards that I believe the original d.c. generators that lit the 380 light bulbs in Gattis, the first restaurant to have electric lighting in London, were sited. Not long after my parents locked up the place and left for another job out of London.

8. During the war the Adelaide Bar became a Services Club and some of the internal rooms were used for accommodation. Charing Cross Hospital took over other parts of the building.

Some notes about Adelaide Restaurant from IEE Proceedings Vol 132 Pt A No 8 December 1985

Reference made to steam driven plant in basement of restaurant. It emerges that with no authority at all they laid a cable connecting the plant with the Adelphi Theatre, about 100 yards away. Which street was dug up is not disclosed, but it must either have been Strand or Chandos Street/Maiden Lane. It is further stated original voltage was 100V, later changed to 100V/200V 3-wire (dc), probably when station was moved to Bull Inn Court.

THE TENTATIVE LIST

Public Stations (ie Stations that provided a public supply at any time). The Loc (location) column equates to main postal district

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
				Battersea M.B			
SW	Sept 1901	1972	Lombard Road (Battersea)	Lombard Road (E side), Harroway Road, Battersea SW (between Lombard Road/York Road and River); per PO1934 at York Rd end.	Initially Battersea Vestry Lighting Dept, later Battersea M.B.C.	Site purchased 1897, foundation stone 1900. Certainly re-equipped by 1931. There was also land on the other side of the road, adjoining river, presumably for coal delivery. In later years substation (latterly LEB) built on latter site on part of Grove Wharf (relocated 2007 to corner Lombard/Holman Roads to facilitate site redevelopment). Still supplying 1969, capacity 42MW.	S-13
SW	1933	1975	Battersea A (Western side of building)	Kirtling Street, Battersea SW	London Power Company	Construction started 1929; began supply 1933, last set finished 1936 (though construction not finally complete till 1939 with Garcke suggesting 1951). Also briefly supplied steam to B's 100MW set. In 1960s had capacity of about 220MW.	S-03
SW	1941	Late 1983	Battersea B (Eastern side of building)	Kirtling Street, Battersea SW	London Power Company	Last set not actually commissioned until 1953. Fourth Chimney not completed until 1955. Final capacity about 250MW.	S-04
				Bermondsey M.B.			
SE	23 January 1902	1930	Bermondsey	Neckinger, Bermondsey, probably on the plot of land on the west side near the south end where most Council facilities were concentrated.	Bembondsey MBC Electricity Supply.	ELO originally granted to the Vestry of Bermondsey in 1899 following preliminary investigation by a special committee. Upon opening of station, a supply was also made to Rotherhithe. In 1915 total station capacity 3.475MW. Bulk supply obtained from LESCo in 1917 (their mains passed through area). Generation finally ceased 1930.	
				Bethnal Green M.B.			
				See Stepney M.B.		ELO granted as far back as 1899 but supply did not begin until 1916.	
				Camberwell M.B.	CoL		
				Most of Borough supplied by County of London Electric Supply Co (Order dated 1896), see ???? Supplies to northern part of Borough shared with London Electric Supply Corporation, see Southwark M.B. and Lambeth MB.			

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
SE	1893	<1915/6 and probably 1904-1910 period.[6]	Crystal Palace	Springfield Works, Springfield Road (now S. Rise), Wells Road, Upper Sydenham, SE. (N end of road on W side per 1899 plan). Also described as Springfield Rise (LEB records)	Original scheme by the Electric Construction & Maintenance Company, later the Electric Installation & Maintenance Company. Changed to Crystal Palace District Electricity Supply Co (final name) 19 December 1891. Undertaking transferred to South Metropolitan Electric Light & Power Co in 1904.	Original Supply high pressure DC serving 7 substations with another in hand. Company was taken over by South Metropolitan EPSCo in 1904 and ultimately bulk supply obtained from their station at Blackwall Point. On 25 July 1900 was huge boiler explosion at the works that killed one and injured four more, two seriously, and caused serious damage to two buildings. The company bought the old Springfield brewery in 1891. Springfield Viall served as company's offices. Closed 1950s apparently presumably as substation.	
				Chelsea M.B.			
SW	Premises acquired 1896. Supply commenced Sept 1889	n/a	Cadogan Gardens	19 Cadogan Gardens SW. This part of road previously part Draycott Place. PO1902-34 refers to them as CESCo offices (1902 mentions stations at Alpha Place and 91 Manor St).	Chelsea Electricity Supply Co (Reg Nov 1884).	Became company's offices. Building stated still there now. Building housed quite large staff. It replaced Draycott Place. There were battery substations at PS, Pavilion Rd and Egerton Mews. Original supply low pressure DC.	
			Cheyne Walk	*(see Manor Street)*			
SW	1889 April	1898	Draycott Place	Draycott Place (this portion now Cadogan Gardens), Chelsea. This was in basement of house on N side that would appear to have been between Pavilion Road and Leete Street/Cadogan Gardens next to the school. Cannot find trace of Leete St, but location (to avoid District Railway) must have been near Pavilion Road corner,	Chelsea Electricity Supply Co. Reg Nov 1884	Replaced by Flood Street and 19 Cadogan Gardens (new). Equipment provided by Electric Construction Corporation. Electrical Times refers to 2000 lamp storage battery in Clabon Mews followed by two more batteries elsewhere. Suggestion one of these was in Egerton Mews. EPS states Flood Street took over from Draycott Place 1898.	S-08
SW	1894	1928	Flood Street (Also seen referred to as Alpha Place).	Flood Street, Chelsea (probably south of Alpha Place and backing on to Manor Street PS). No ref in PO1934 to anything in Flood Street, however is mentioned as CES electricity works at 3A Alpha Place.	Chelsea Electricity Supply Co	Station designed by Alfred Roberts. Bulk supply from Central Co taken from 1912. Seems to have replaced Manor St and Cadogan Gardens. 2-storeyed structure by Alfred Roberts. On closure of steam plant in 1922 supply taken from Grove Road and became substation (still there 1951 and 1979, and apparently now); Diesel generation plant continued to function 1922-28 when bulk supply upgraded to 22kV. Victorian buildings demolished circa 1992 and replaced by housing 2000 that looks older than it is. Originally substations provided at: Elm Park Gardens, Claybon Mews and Pond Place.	S-10

[6] Not in Garcke 1915-16. Still generating in 1904 though.

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
SW	Jul 1888	??	Manor Street (occasionally referred to as Cheyne Walk)	91 Manor Street, Chelsea. On E side of road near corner of St Loo Avenue and 6 buildings south of Alpha Place.	Cadogan Electric Lighting Co, Reg Mar 1887. Went into liquidation Feb 1891. A source states it was taken over 1890 by New Cadogan & Belgrave Electric Supply Co, which became in 1892 the St Luke Chelsea Electric Lighting Co, taken over in 1893 by Chelsea Electricity Supply Co.	See also Flood Street very nearby. Seems to have left LEB presence until at least 1990s.	S-14
SW	1940	By 1950[7]	Alpha Place	Alpha Place, Flood St, Chelsea SW	London Power Co	Seems to have been wartime PS built on enlargement of Flood Street site (see below, and Manor St). NB LEB had offices in Alpha Place (Flood Street) in 1969. These are suggested to be an adaptation of a 1940s power station and the site was sold circa 2003 for £20m. PS not listed 1959. Had feed from Battersea.	S-01
				Deptford M.B.			
SE	1889/90	1984	Deptford (later called Deptford East)	Deptford, by river, Stowage Wharf	London Electric Supply Corporation	Superseded Grosvenor Gallery 1890; in 1899 subs at 25A Cockspur Street and 234A Blackfriars Road, and Bloomfield Place, New Bond St. Entirely new low pressure plant introduced 1925-30 of 30MW capacity generating at 25Hz. Supplied current to Southern Railway and also the grid via frequency changers located at Deptford West. Adjacent High Pressure plant of 156MW brought into service December 1953, June 1954 and June 1957. Still supplying 1969. Finally demolished April 1992.	O-06
SE	1929	1974	Deptford West	Deptford, by river, Stowage Wharf	London Power Company, formed 1925 from amalgamation	Sets commissioned 1929-37 of 209MW capacity. Still supplying 1960.	O-07

[7] Not in 1950 Garcke

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
				Finsbury M.B.			
EC	1896	1929 or very early 1930[8]	City Road	City Road basin (Regents Canal); Oak Wharf and 4 Graham St (this was located on the NW corner of City Road bridge between basin and Graham St (previously Macclesfield St)). Land acquired May 1894 on 99-yr lease.[1] NB London Hydraulic Power Co pumping station opposite.	County of London Electric Lighting Co (Reg 30 Jun 1891), renamed County of London & Brush Provincial Electric Lighting Co 1894 (and later still County of London Electric Supply Co).	Opened 1896, completed 1897. Considerable electrical distribution capacity remains on approximate site (also was substation in 1951). Also major Grid Supply Point. Likely to have been superseded by Barking in or around 1928. In 1914 was supplying 2-phase ac for lighting and 530V dc for power. Total output 12.75kW to just 104 consumers. Space was then available for extension. 1931 description indicates 11 Babcock & Wilcox boilers with chain grate stokers plus 640 tube Green economiser. These fed 3 horizontal cross compound engines coupled to 3 multipolar generating sets, supported by batteries. Under the 1928 grid scheme this was not a Selected station and its fate was sealed. City Road and Wandsworth power stations interconnected 1911 (Per LMA index). This station was explicitly referred to in the London Electricity (No 1) Act 1925, so it is reasonable to assume it was still generating then.	C-01
				Fulham M.B.			
SW	1 June 1901	1978	Fulham (A)	Townmead Road, SW (sometimes referred to as Sands End). PO1934 refers to FBC electricity works between FBC dust destructor and Shell Mex depot.	Fulham MBC	Appears this station was entirely superseded by Fulham B with site subsequently being used for expansion of new station, see below.	S-11
SW	1936	1978	Fulham B	Townmead Road, SW (sometimes referred to as Sands End).	Fulham MBC	This station appears to have superseded Fulham A (or original Fulham station) with 2x60MW sets coming into service and similar subsequent sets in 1937, 1941, 1946 and 1951. Still supplying in 1969. Sainsbury superstore on part of site (1989).	S-11A
				Greenwich M.B.			
SE	Feb 1900	26 Octobe r 1981	Greenwich (River Way); sometimes called Blackwall Point.	River Way, Blackwall Point, Greenwich SE10	South Metropolitan Electric Light & Power Co.	Originally first to use pulverised coal. This station was re-equipped from 1951 by BEA, sets coming into use 29 June 1951, Dec 1951 March or April 1952. Capacity then 89MW. Still supplying 1969. Believe from WikiP that original plant shut down in 1947. Offices later located in Lewisham High Street.	O-08
				Hackney M.B.			
E	Oct 1901	1969	Hackney (A)	Millfields Road, Clapton E5 (at E end by Hackney Cut).	Hackney Borough Council?	Station enlarged early 1930s and certainly reequipped by 1938. Still supplying 1969. Low pressure part of station then 20MW and high pressure plant 60MW. Used heat from adjacent refuse destructor. Supplied in bulk to Stoke Newington.	E-08

[8] Shown in Garcke 1928/9 (vol XXXII) but not 1930 (vol XXXIII). Minutes end 1928 show intention to cease generation and known boilerhouse dismantled by 1931. Not needed once Barking station opened in 1928.

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
E	1954	1976	Hackney B	Millfields Road, Clapton E5 (at E end by Hackney Cut).	CEGB	New 1950s station with sets coming into service Dec 1954, Jun 1955 and Dec 1957, totalling 91MW. Still supplying 1969.	E-09
				Hammersmith M.B.			
W	21 June 1897	1966	Hammersmith	Power Station: 85 Fulham Palace Road W6. *[Offices at Electric House 154 Uxbridge Road, Hammersmith. Ophelia and Horatio Houses built on site now, though taking number 77 FPRd]*	Hammersmith Borough (orig Hammersmith Vestry)	The office address was LEB Western District HQ 1969. Interconnected with Battersea and Fulham 1921. Bulk supply from LHCJEA 1st Jan 1930, but continued to generate under JEA purview (capacity 1960 was 15MW). Bulk supply given to Chiswick from 1917. Still supplying 1963/6, but not in 1967 Electricity Handbook. In 1913 a 600m pipeline coal conveyor was constructed to bring coal from the Thames. Two large substations still exist at the rear of the site, by the District Line.	W-09
W	Oct 1900	15 May 1928	Wood Lane	Wood Lane, Shepherds Bush. Entrance between Wood Lane station and Kensington BC depot, on E side but set back from road. Immediately north of CLR depot site (and south of H&C Railway). Access may have been from road along E side of CLR depot.	Kensington & Knightsbridge Electric Lighting Co. jointly with Notting Hill Electric Lighting Co.	Earliest example of 3-phase distribution (at 5000V, later 6600V). The Power Station was leased to the London Power Company in 1926, and closed down in 1928. No sign 1953, but probable substation. Possibly site North Hammersmith substation 1951. Site now part of the Wood Lane shopping complex. Power station contributed supply to Franco-British Exhibition 1908. No ref PO 1934, but Callendar's research labs were built on the old site after a 21 year lease was taken in 1931. Many of the old power station buildings were adapted.	W-14
W			Bulwer Street	Shepherds Bush. In Bulwer Street on south side at west end of road.		Primary Grid substation	
				Hampstead M.B.			
NW	1 Oct 1894	25th Aug 1922	Hampstead	Stoneyard, Hampstead (Later known as Lithos Road, off Finchley Road) At end of road in angle between Midland and North London Railways.	Hampstead Vestry (later MBC). Also acquired North West London ES Co.	Bulk supply taken from St Marylebone BC from April 1921. LEB NW District HQ in 1969, and substation. Power station building adapted as substation but replaced by new construction in 1975, but still substation. The Municipal supply replaced a brief small scale public supply by London & Hampstead Battery Co from 1892 (no further info).	T-05

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
				Holborn M.B.			
WC	1915-1935	1963-65	Holborn (or Short's Gardens)	50-72 Shorts Gardens, Holborn [Seven Dials to Drury Lane] on SW corner Drury Lane. 1934 PO directory shows CCESCo at No 72 (end of road) only, with Nos 52-70 as commercial premises (Brydone Paget Manufacturing Stationers). Also fronts Drury Lane and Betterton St. Early references also call it Drury Lane.	Charing Cross Co. A GT station, probably post war, but in older building.	This much enlarged site seems to have been in existence since at least 1904[9] and was described under its new name as a CC,WE&C E.S.Co substation by 1915. Became very important substation. In 2005 still EDF Offices at 72. Some site redevelopment in 1950s with scaling down 1980s and onwards. Recent shaft built to HT cable network (to Seacoal Lane) completed late 2006. This site (with Maiden Lane) was equipped with oil engines by 1935, the 1936/7 Manual refers to Short's Gardens generating 3MWh and containing three 450 kW, one 575 kW and two 1200 kW sets of dc oil engines (total capacity 4325kW), but was just 2MW in 1959. Still had generation capacity in 1951 and 1963 (but not in 1966 handbook); latterly they were GT sets, probably post-war (a correspondent advises these were a standby for what was referred to as the Theatre Emergency Ring). Some evidence (purchase of fuel oil) that the original engines date prior to 1925-6.	C-03
				Islington M.B.			
N	Jan 1896	1969	Islington	Eden Grove, Holloway Road N7 (no. around 46, by Burnard Place on NW side.) 1915 map shows this farther back, just south of railway, east of Caledonian Road. Site probably expanded later, to the east.	Islington BC as successors to Vestry	Took bulk supply from LHCJEA 5th Dec 1931, but station continued to generate under JEA purview. In 1960 capacity was 17MW. Still generating 1969. Almost certainly re-equipped at some point.	N-03

[9] Garcke's Manual 1904.

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
				Kensington M.B.			
SW	<1905 and probably before 1899		Albert Vaults	Transformer station in Prince Consort Road (poss under Albert Hall frontage)[PO 1902].	Kensington & Knightsbridge Electric Lighting Co.	In 1915 was accommodating 9 MG sets.	
SW	1890	1923[10]	Cheval Place	5 Cheval Place (south side), off Knightsbridge, with battery station in Queens Terrace Mews (by 1 Elvaston Place). PO1934 shows works between 9 and 23 on S side. PO1902 suggests works occupied all numbers under 21. PO 1902 also refers to Offices at 148 Brompton Rd (N side between Montpelier St and Cheval Place, much nearer former). NB Cheval Place was then Chapel Place and renamed subsequently. Offices seem to have backed onto Power Stn.	Kensington & Knightsbridge Electric Lighting Co. Reg March 1888	Some presence in Cheval Place still in 1915 (*works*), but by then no obvious presence QTM. Shown as substation 1951. Recent visit indicates no remaining presence. Appears to be tandoori restaurant.	S-06
W	Jan 1887	1900	Kensington Court	48 Kensington Court, off Kensington High Street	Kensington Court Electric Light Co	Kensington & Knightsbridge Electric Lighting Co. On closure retained as substation. Regarded as the *first* practical house to house distribution system in London (with benefit of supplying private property partly through existing subways intended for hydraulic mains). Generated at 100V (later 200V). Note: the London (Westminster and Kensington) Electric Supply Companies Act 1908 still refers to Kensington Court station (Sect 17), perhaps retained as standby. In 1915 Kensington Court accommodated 9 MG sets.	W-10
W			Queens Terrace Mews Substation	Queens Terrace Mews, [Elvaston Place], Queens Gate W. No ref PO 1934.		From 1899 directory. Kensington & Knightsbridge works.	
SW			*Pelham Street*	*63-81 Pelham Street. Kensington & Knightsbridge Electric Lighting Co. Large building, possibly HQ. Not a generator, probably a substation included.*	*Knightsbridge Electric Lighting Co.*		
SW			Queens Terrace Mews	Battery station. QTM situated by 1 Elvaston Place.	Kensington & Knightsbridge Electric Lighting Co.		
SW	24 Jan 1889	Oct-ober 1928	Richmond Road	Richmond Road, Brompton. No trace PO directory 1934.	House to House Electric Light Supply Co	In August 1899 renamed Brompton & Kensington Electricity Supply Co. A Lowrie-Parker dynamo was provided in 1888 by the Electric Construction Corporation. On closure supply taken from London Power Co.	S-16

[10] Per Parsons and LMA,

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
W	1 Jun 1891	1900[11]	Bulmer Place	Off Notting Hill High Street. No ref PO 1934. NB PO1902 refers to NHELCo having "Central Station" at 140 High Street. (This seems to have been frontage backing onto Bulmer Place).	Notting Hill Electric Lighting Co. Reg 21 Feb 1888	Initially equipped with three Willans-Crompton generating sets, total capacity 220 kW. Engine and boiler room in basement. Gen sets on solid concrete raft. The layout of the station was extremely inconvenient and it closed once a supply had been arranged from Wood Lane.	W-03
				Lambeth M.B.			
SE	1896	1909	Commercial Road, or Lambeth	85 Commercial Road, Lambeth (between Waterloo & Blackfriars bridges, on N side between Thorne and Waterloo wharves, latter described as Phoenix wharf); now Upper Ground.	Charing Cross & Strand Electricity Supply Corporation Ltd	Supply replaced by one from Bow. No trace now. Station built to supplement existing growing system with power conveyed across Thames in ducts along Waterloo and Hungerford bridges. A 3600kW station generating at 1000V. Current reduced to 200V north of river by MG sets.	O-05
SE	1881	1900-1902	Belvedere Road	Belvedere Road, Waterloo [?] No trace PO1902 or later.	Anglo-American Brush Electric Light Corporation	Informal arrangement superseded by Prov Order held by Brush Electrical Engineering Co and Laing, Wharton & Downs Construction Syndicate, superseded 1891 by City of London Electric Lighting (Pioneer) Co. whose interests were then acquired by City of London Electric Lighting Co. No sign 1915 (though High Tension Co at 62 may be relevant). No sign 1899, but station (which was very inconvenient to operate) apparently superseded by Wood Lane which opened 1900[12].	O-04
SE	28 Nov 1899	1928	Lambeth (Loughborough Junction)	54 Bengeworth Road, Loughborough Junction SE (to be confirmed). PO 1934 shows this to be only premises in road, South London Electric Supply Corporation Ltd.	Lambeth BC	After closure bulk supply taken from C.of L. E.S. Co. Still substation 1951. LMA reports building still extant 1957. Bulk supplies from County of London began in 1916 and the company was taken over by County in 1918. In 1930s station used to renovate cookers.	O-09
				Lewisham M.B.			
				Supplied by South Metropolitan Electric Light & Power Co. See Greenwich M.B.			

[11] Not specifically mentioned in 1899/00 Garcke, though still head office.
[12] See Parsons

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
				London, City of			
EC	1894	25th Decem-ber 1932[13]	Charterhouse Street	PO 1902 refers to SMESCo offices at No 57 (GM Powell, Sec). No separate Gen Stn info. 57 was on N side between Farringdon Rd and Cowcross St in Fruit & Veg Market area, nearer former rd. 1934 directory shows the company premises at 53 Charterhouse Street (57/59 a provisions merchant, 51-53 Union Cold Store and 49 PLA Cold Store)	Smithfield Markets Electric Supply Co. operating concession granted by City of London Corporation	The site appears today to have been included in the Smithfield District scheme where there is a modern CHP station (see end of article). Company. System 3-wire dc at 100V/200V. Total capacity 1.18MW (1914) and 644kW(1931). The company was formed 16th July 1897 to take over an earlier concern (of 1894) on basis of 21 year concession from Corporation of London, but new concession granted in 1909 effective from July 1913 until 1972, but terminable in 1932/52. Was actually terminated at earlier option with effect from 25th December 1932, and it is assumed generation stopped at that date. Original supply low tension dc 3-wire, 100V/200V. In 1931 operated 1x124kW Willans diesel set and 4x220BHP diesels (520kW), totalling 644kW. Following end of concession the company went into liquidation and the electricity supply drawn from the Charing Cross Electricity Supply Co.	C-00
EC	12 Jan 1882	1886	Holborn Viaduct	57 Holborn Viaduct, EC. (NE corner of viaduct). PO1934 indicated "Bath House" on site (57-60). Nothing relevant in PO1902.	E.H. Johnson on behalf of Thomas Edison (with W.J. Hammer?)	Claimed as first public power station in World. The lower floors appear to have been directly accessible from Snow Hill.	C-02
EC	19 Dec 1891	Jan 1898[2]	Wool Quay	Wool Quay, Lower Thames Street. *[Have not satisfactorily identified site]* No trace PO1934 or 1902.	City of London Electric Lighting (Pioneer) Co. whose interests were then acquired by City of London Electric Lighting Co.	Company also owned Bankside, which was selected for development in preference to Wool Key, which wasn't suitable. IEEE obituary of Frank Aspinall refers to Wool Quay closing in 1897, being replaced by Bankside. Suggestion that Wool quay was always intended to be merely a temporary station. In 1890 the contract for lighting the eastern portion of the. City of London was awarded to the Laing. Wharton & Down Construction Syndicate (later BTH), and Mr. Ireland had charge of all this work, including the erection of a temporary generating station at Wool Quay.	C-03
				Paddington M.B.			
W	3 Mar 1893	1926	Amberley Road	St Peter's (Canal) Wharf, Amberley Road, Paddington. PO1934 suggests next to LCC school.	Metropolitan Electric Supply Company	(On closure Paddington district supplied by London Power Co). Still substation 1951 and obvious electricity presence today.	W-01

[13] Shown Garcke 1931 but not 1932/3 (the latter containing explanation)

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
				Poplar M.B.			
E	March 1952	Oct-ober 1984	Brunswick Wharf (Poplar)	Brunswick Wharf, Naval Row E14 (Built on site of old East India Export Dock).	British Electricity Authority	Conceived in 1939, construction started in 1947 under auspices of Poplar Borough Council (and an early work of Marples Ridgway). Sets brought into use March 1952, Dec 1952, Jan 1953, June 1954, March 1955, June 1956, soon after which oil conversion process started. Capacity of 325MW at that time. Building sold and part demolished 1987, but parts left including switchhouse. Substation capacity remained on site until Spring 2004. (See history at http://www.british-history.ac.uk/report.aspx?compid=46538). Ceased generating March 1984, shortly before permanent closure.	E-06
E	May 1902	1968	Bow	Marshgate Lane, Bow E No obvious ref PO directory 1934. By 1964 large station off Barbers Road (S side) off Pudding Mill Lane. Possibly an expansion on same site.	Charing Cross & Strand Electricity Supply Corporation Ltd (Later Charing Cross, West End and City ES Co in Feb 1905)	Rebuilt 1919; Still operating 1953; still supplying in 1969. Capacity of 48MW in 1959. Originally opened to supply power to City of London, but soon took load from original CC&S stations. When designed was first 3-phase plant in UK, transmitting at 10,000V (Deptford and Taylors Lane were also 10,000V). Apparently closed 1969 (not in 1970 list done November 1969)	E-05
E	Oct 1900	1968	Poplar	Glaucus Street, Poplar, E3. In 1935 new PS described as Weston Street (seems to have been in course of erection 1927). Appears to be at back of same site. Weston Street subsequent to 1923 renamed Watts Grove; probably supplemented then superseded older station.	Poplar BC.	1927 Guide describes extension as 10MW, capable of extension to 20MW. Older station then 16MW. In 1951 long term viability of each station regarded as doubtful. BOTH sites listed in 1951, 1953 and 1959 when Glaucas Street capacity given as 12MW and Watts Grove as 24MW Still in use 1963, but no differentiation.	E-13 and prob E13A
				St Marylebone M.B.			
NW	By 1915 (1905?)	1968	Edgware Road (later known as Aberdeen Place, Orchardson Street and latterly as St Marylebone))	Richmond Street, Edgware Road (road renamed Orchardson Street). On NW side of road at end [remote from Edg.Rd.] in block between Salisbury St and end. The site was subsequently much extended northwards to canal site.	St Marylebone BC.	Substation at Blackhorse Yard, Rathbone Place (superseding Generating station). It is possible this replaced Manchester Square as St Marylebone BC required a new station on taking over from Met ESCo early 1904. Still generating 1960 (when capacity was 22MW) but not in 1963. In 1960 equipped with 6 Babcock & Wilcox boilers, 1x8 and 2x3.5MW Oerlikon turbo sets and 1x15.6 and 1x8MW F+C-GEC sets. Cooling water from canal.	T-03
NW	Nov 1902	1969	Grove Road	Grove Road, [Lodge Road] Marylebone; {this section of road subsequently part of Lisson Grove}	Westminster Electric Supply Corporation, jointly with St James's & Pall Mall Electric Lighting Co.	Station still supplying 1969 at 57MW capacity.	T-04

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
W	Jan 1890	1905-6[14]	Manchester Square	Manchester Square (Marylebone); This was located in the block bounded by North Street (now Aybrook Street), South Street (now Blandford Street, renamed <1913), Manchester Street and Paradise Street. Post Office Guide 1902 states power station at 17 South St (Manchester Sq.) W. but it was not shown their in 1915 directory. The premises was evidently quite large and later access seems to have been from Aybrook Street. St Marylebone council had electricity mains & meters dept office at 36 Aybrook St that backed onto site.	Metropolitan Electric Supply Company	Equipment provided by Electric Construction Corporation. On closure of power station the old building was converted into a principal transformer and distribution station with substantial battery backup., work all complete by 1908 when brochure issued. Although power station opened by MESCo the concern was transferred to St Marylebone Borough Council c 1902. In 1939 new electricity supply offices were opened in Aybrook Street (Faraday House, 34-38 Aybrook Street W1.), removed from from Town Hall. In 1915 No 36 recorded as St Marylebone BC Electricity Mains & Meter dept. In 2000 etc building described as London Power Networks (seems their HQ) [Also London Electricity Services-later EDF Energy; in 1969 HQ of LEB Regency District]. *See also South Street/Blandford Street.* Building demolished 2006 but frontage with council's arms retained and built into ne construction. In 2005 the main EdF substation feeding area north of Oxford Street was rebuilt at basement level and the new development was built on top.	W-11
W	Sep 1887	Prob 1900-1901[15]	Rathbone Place. Some sources refer to this as the Oxford Street Electric Lighting Station	Blackhorse Yard, Rathbone Place Off Oxford Street. Yard next to pub *The Black Horse* on east side. PO 1934 refers to St Marylebone BC substation in Blackhorse Yard.	G.E. Pritchett and Co	Opened with 32kW generator. Situated below ground in building118ft by 44ft. Originally distributed at 100V ac, but with some HT work for rooftop distribution over distance, then stepping down again. In Feb 1889 Metropolitan Electric Supply Company took it over and installed five 100kW sets. Became substation. Equipment provided by Electric Construction Corporation. When concern taken over by St Marylebone BC it was converted into battery substation serving area north of Oxford St.	W-13
				St Pancras M.B.			
NW	1895 (end)	1968 (poss part disused 1965)	Kings Road (Road later known Royal College Street), station often called St Pancras.	Kings Road, St Pancras. Rd now St Pancras Way. In 1964 occupied block bounded by St Pancras Way, Pratt Street, Royal College St, Georgiana St. *[NB Offices for electricity dept at 57 Pratt Street Council Offices].* NB In 1953 site described as Royal College Street. 1915 map shows works at NW corner Pratt Street/King's Road, taking up about a quarter of the block only.	St Pancras Vestry & Public Lighting Dept. Subsequently St Pancras Metropolitan Borough Council.	Included dust destruction plant (though this was soon abandoned). 1915 Garcke suggests generating plant still on site. Station prob rebuilt farther back on site. 1951 map also shows substation. In 1959 capacity stated as 17MW. In the 1930s St Pancras BC also drew a supply from the LMS power station at Kentish Town. 1963 list still refers to St Pancras. The power station at St Pancras was being used as a film set in 1965 (eg Operation Crossbow where it represented a WW2 rocket factory), which suggests it might recently have closed. However still shown in handbooks till 1968.	T-06

[14] Per LMA, not in Garcke 1915
[15] Not generating in Garcke 1901

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
NW	9 Nov 1891	1925[16]	Regents Park	47 Stanhope Street NW. W side, between Longford and William St. Appears site expanded behind row of properties with additional face to Longford Street. PO1934 no trace in Stanhope St and 47 (between Longford and Wybert Streets) is a motor haulage contractor. Nothing Longford Street either. 1940 Bomb Damage maps show narrow but deep site off north side of Longford Street behind gardens of Stanhope houses and running back as far as alley to Munster Sq.	St Pancras Vestry & Public Lighting Dept.	Once supply started, station soon operating to capacity. 1963 refers to St Pancras PS. This area now comprehensively redeveloped with no trace left of electricity presence. Equipment provided by Electric Construction Corporation. Station had already closed by 1925-6 Edition of Garcke. Substations (for both power stations) erected Tavistock Place (Southern substation, 1903) and Highgate Road (Northern substation, 1903). Head offices once at 47 Stanhope Street and later 57 Pratt Street.	T-07
				Shoreditch M.B.			
E	28 Jun 1897[3]	July 1940[17]	Shoreditch	Coronet Street, Shoreditch E (Hoxton).	Shoreditch Vestry (MBC)	A combined generation and Dust destruction plant, opened by Lord Kelvin. Original capacity 705kW, but additional plant introced 1898. Became main distribution substation (still with generating capacity, but not a selected station) after Whiston St plant opened. Appears to have stopped generating July 1940 (was supplying DC), though building remained as control and distribution centre. Building still exists as community space and offices.	E-14
E	16 June 1902.[4]	Between 1959 and 1963[18]	Shoreditch	Whiston Road, Shoreditch E (on E side of dock (Haggerston Basin) just E of Queenbridge Rd)	Shoreditch BC	Seems to have supplemented earlier site in Coronet Street. Plant enlarged 1907-8. By 1914 total capacity of both Shoreditch plants was 6.06MW. Oldest Whiston St sets replaced 1928, and made Selected station 1934. Still in use 1959, capacity 19MW.	E-15
				Southwark M.B.			
SE	12 Jun 1891	Closed 26 March 1959.	Bankside or Meredith's Wharf (*de facto* original Bankside A)	Meredith's Wharf, Bankside. (PO 1902 refers to 64 Bankside). Eventually took up most of block to long frontage in Sumner Street between Holland St. and Park St.	City of London Electric Lighting (Pioneer) Co. whose interests were then acquired by City of London Electric Lighting Co.	Rebuilt 1892 and successively thereafter (incl major reconstruction 1952, as Bankside B). Was 30MW in 1915 and at time of closure had capacity of 64MW. Became a Selected station 1st January 1934 (at which time it had capacity of 85MW).	O-01
SE	1963	1981	Bankside A	64 Bankside, Southwark SE (Eastern half of building, largely on site of old power station)	CEGB	Replaced old power station at Bankside on part of same site; still generating 1969. LEB substation still on site (may be on B site).	O-02

[16] Per Garke shown 1924-5 (V27) but not in 1925-6 (V28)
[17] Shoreditch Borough power station story, 1947. Not shown Garcke 1950/51
[18] Still shown Garcke 1959/60, not on 1963 list

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
SE	November 1952	1981	Bankside B	64 Bankside, Southwark SE (Western half of building, on site of former gas works)	BEA	First set commissioned November 1952; first half of station completed 1953 with capacity 113MW and second half due 1962. Still supplying 1969. Oil fired.	O-03
SE	<1902	<1921[19]	Blackfriars Road	Per PO 1902 Distribution station for LESCo at 234A, on E side between Burrell St and Southwark St, near SECR depot. Area badly bombed.	London Electric Supply Corp	Garcke rather suggests this station was never involved with generation, but was part of the Deptford distribution system. Parsons refers to a transformer substation at Blackfriars, which would accord with this.	
SE	7 July 1899	30th May 1952	Southwark	Penrose Street, Walworth, Southwark SE, between No 16 and Railway. PO1902.	Southwark Vestry (Then Southwark MBC).	1951 and 1953. In 1951 regarded as unlikely to be needed. In 1950 capacity stated as 6MWI (4MW).	O-11
				Stepney M.B.			
E	16 Dec 1899	1972	Limehouse (Stepney)	Narrow Street, Limehouse E14 (on N side in block surrounded by Brightley Pl, Northey St, and running E of Shoulder of Mutton Alley).	Stepney Borough Electricity Dept. Supplies in Bulk to Bethnal Green.	Substation at Wapping High Street. Still generating (63MW). Built on site of Blyth's Wharf.	E-12
				Stoke Newington M.B.			
N	Supply began 18th April 1906, but PS not opened until later.	May 1937[20]	Stoke Newington	Edwards Lane (main substation), Church Street. Much of lane occupied by various local council activities. Site evidence PO1934. The substation was extended in 1913, 1919, 1922 and 1924. Refuse Destructor situated in Milton Road (now Milton Grove) probably on west side a little south of Town Hall, perhaps adjacent to where public baths were later provided. Small generating capacity 1909 and in 1935 had capacity of just 77kW.[21]	Stoke Newington Borough Council.	Small Destructor plant apparently with generating capacity dating from 1909, but plant made only small contribution to supply. A supply in bulk was originally obtained from Hackney MBC but the arrangement was terminated the following year. From April 1906 (apparently in parallel with the Hackney arrangement) a bulk supply at 10kV obtained from NorthMet (Brimsdown); bulk supply agreement terminated March 1928 when bulk supply was again taken from Hackney. Transformed to DC for distribution by transformers and motor converters, with battery support. In 1935 was distributing at 240/480Vdc 3-wire. In 1935 rotary substations at Edwards Lane (also static substation), Wordsworth Road (1929) and Lordship Road (1933). Additional substations opened Victorian Road and Trumans Road by 1938 (but after 1935).	N-04
				Wandsworth M.B.			
SW	1896	1963-69	Wandsworth	Wandsworth, Thames bank. PO 1902 quotes postal address: The Causeway, Wandsworth SW. (Apparently next to Borough Council depot).	County of London & Brush Provincial Electric Lighting Co 1894. From 1904 called County of London Electric Supply Co.	Known to be still generating in 1959 (13MW) and 1963, but had closed by 1969.	S-18

[19] Nothing in Garcke 1921-22, though substation referred to.
[20] Per Garcke 1940
[21] See Garcke, various dates, and http://www.british-history.ac.uk/report.aspx?compid=10537

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
				Westminster, City of			
SW	<1905		Cockspur Street	Distribution station for LESCo at 25A Per PO1902. This was also HO in 1898. For a time LES offices were located at 25A.	London Electric Supply Corp.	NB 26 (and 27?) Cockspur Street was Stanford's Maps. Offices still there 1915. The building still exists today with an EdF substation at the rear, next to the archway. In 1953 the substation was disused but the original switchboard was there, apparently intended for the Science Museum.	
SW	1890	1890-1 (Def not there 1899)[22]	Dacre Street (Temporary)	Dacre Street (nr St James's Park). In yard off Dacre Street (must be W side), behind Victoria Mansions (a block on the north side of Victoria Street between New Tothill Street (now Dean Farrer St) and Chapel Street (now Broadway), where New Scotland Yard's Victoria Street block now stands).	Westminster Electric Supply Corporation (Reg June 1888)		S-07

[22] Not shown on map in 1899 Garcke. Parsons states only temporary and Millbank came on line November 1890 and Eccleston Place Feb 1891.

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
SW	Feb 1891	1922	Eccleston Place	Eccleston Place, Victoria. In 1880s (and 1902) quoted as No 39 (where company's offices were based), but later directories clearly state No 6 (PO1915/34) with no high numbers. Later stil renumbered No 25 (see note in RH column). At some point extended over District Railway. Exact site on west side about a third of way along from coach station end. Building still there.	Westminster Electric Supply Corporation	Appears to have stopped generation some time shortly after 1902 when Grove Road opened. MG sets continued in use to convert the 600V ac supply from Grove Road to dc for distribution via existing system. Used stored rainwater from roof of Victoria station. Still substation 1951. Road apparently renumbered per order 4 March 1913 to run 3-19 and 4-16. No 18 added 8th July 1927, 16&18 added 3 February 1928. (Road must have been numbered from north end, evens on right). Reno again 1936-7 3-59, 6-16 (apparently starting south end). At that time Westminster ESCo premises renumbered 25, between Chester House and Eccleston Hall. Premises at back (the former works) taken over by Audi dealers around 2000. Building at front (No 25) was Central London Electricity HQ for Engineering Dept in 1948. Later part of LEB. Electrical Review 1921 reports 'old steam raising plant' in boiler house being removed in order to make way for conversion to substation. However in a later issue it states a lot of new equipment has been delayed and it has not been possible to shut down generation at Davies St or Eccleston Place yet, though imminent.	S-09
SW	1910	1927[23]	Horseferry Road	Horseferry Road, Lambeth Bridge (replaced Millbank); located north side between Millbank and Dean Bradley Street (Nos approx 10-30). PO1934 suggests WESCo premises corner Millbank and Ergon House (London Power Co) next door. PO 1902 suggests no electricity connection prior.	Westminster Electric Supply Corporation	Still there 1915. Part site is that of Ergon House, LEB WE District HQ 1969. Was DC substation in 1925/6 and 1937 distributing 200/400V 3-wire dc. Still substation 1951, with plant on site now.	S-12
SW	1888-9	??	Chapel Mews	Chapel Mews (nr St James's Park). The company appears to have been based at 32 Victoria Street.	Westminster Electrical Syndicate (wound up April 1892)	Westminster Electric Supply Corporation Jan 1890	S-05
SW	Nov 1890	1910	St John's Wharf	St John's Wharf, Millbank [Millbank Street?] Site of today's Victoria Gardens (by House of Lords). PO1902 suggests at Westminster end at Dorset Wharf.	Westminster Electrical Syndicate (licensed 1889); Westminster Electric Supply Corporation	Westminster Electric Supply Corporation Jan 1890. Superseded by Horseferry Road	S-17

[23] Is in 1925/6 Garcke but not following volume 1926/7. Referred to in London Electricity (No 2 Act) 1925. Closure date from LMA records, though as not in 1926-7 volume of Garcke may not have been taken off books immediately.

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
SW	5 Oct 1888	Still there 1904 but seems to have closed before 1915.	Whitehall Court	Outside Whitehall Court under roadway. *Located in road 'Whitehall Court' under frontage to the Mansion block of same name on south side).* No trace PO1934. PO1902 indicates MESCo was resident at No 3.	Whitehall Electric Supply Company (reg Oct 1887)	Ended up with Metropolitan Electric Supply Company. The boilers (dated 1888) were still in use in 1939, apparently as part of the building's heating system. Following fire at Sardinia Street two generating sets were transferred there and replaced by two smaller ones (50kW each)..	S-19
WC	Sep 1883	1888?	Adelaide Restaurant	Adelaide Restaurant, Strand N side (in basement); this was at 436 Strand [nr Coutts Bank, betw. King William St and Adelaide St] and was still there in 1934 when it was called Gatti's.	Messrs A & S Gatti	Original plant designed to supply 330 lamps in the restaurant and comprised two bipolar dynamos. Three years later started supplying Adelphi theatre and possibly a further number of premises. Appears further growth caused replacement station to be laid down in Maiden Lane (C-02).	C-01
WC	1888	1902	Bull Inn Court, later better known as Maiden Lane	Bull Inn Court, Maiden Lane (S side), Strand (initially underground, reb c 1892 above ground). 15 Maiden Lane per PO1902 (E.W.Seale Sec), but 12 Maiden Lane WC in 1915. Later books refer to 11 Maiden Lane offices, though 1934 PO directory states CCESCo offices still at No 12, and No 11 Girling & Co coffee rooms. No 12 was two doors east of Bull Inn Court..No 15 would have backed onto Bull Inn Court. The power station abutted the Vaudeville theatre of west side of court (and was a source of nuisance) and Gattis appear to have obtained ownership of entire block, so Maiden Lane offices may have varied over time. The theatre expanded into Maiden Lane in 1926, perhaps requiring offices to be moved west a few yards.	Messrs A & S Gatti, then Charing Cross & Strand ES Co.	Initial station (replacing C-01) owned and built by Gattis, but soon (1889) purchased by the Electric Supply Corporation Ltd, renamed Charing Cross & Strand Electricity Supply Corporation Ltd 1889-90. Probably same site as later location of substation. New company included Gattis as shareholders and comprised two 84kW and two 50kW 150V dynamos of Edison-Hopkinson pattern. Further growth caused station to be enlarged in 1892 after obtaining provisional order. Thenceforth distribution was at 100/200V 2-wire. Company laid mains along Maiden Lane and supplied Adelphi Theatre a few yards away.	C-02

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
W	1883/5	1 Nov 1890	Grosvenor (Art) Gallery	Grosvenor Gallery, 135-136 New Bond Street [Nos consecutive running south] betw. Grosvenor St and Bruton St on W side, 6 doors from former. {In 1915 GG Ltd was at 51A, just south of Maddox St on E side, but gallery itself closed 1890}	Sir Coutts Lindsay & Co	Temporary station opened first arranged in outbuilding and intended just to supply gallery. Permanent station in 1885 build in a new sub-basement of the gallery itself, together with tunnel to workshops on other side of Bloomfield Place (No 5), which included boiler rooms and chimney. Current generated at 2000V ac. London Electric Supply Corporation formed Aug 1887 and took interests over. By 1888 some 35,000 lamps were connected and the concern was quite large. The station was substantially burned out during an electrical fire shortly after generation ceased and it was used as substation. A second fire saw distribution cease for three months, providing opportunity to replace overhead lines by 24 underground cables. This setback seriously affected company. The building was subsequently used as a concert hall (the Aeolian Hall) used by the BBC during the Second World War.	W-08
WC	1915-1925	1940s? but before 1950.	St Martin's Lane	60 St Martin's Lane (also Company Offices in 1915/35). Per PO directories, located east side of road, immediately north of New Street (previously New Row) a little to the south of Long Acre. (Building not listed at all in 1902 directory, but many years previously No 60 were workshops of Thomas Chippendale and in the 1860s the premises of printer W.S. Johnson and the Nassau Steam Press.)	Charing Cross, West End & City Electric Supply Co.	There had been a substation at St Martins Lane since at least 1915 and probably from earlier. There is some evidence that oil engines had been installed by 1924/5. Certainly by 1936-7 there were 575 + 750 + 1200kW sets available, and that year they generated 2.38MWh of power. Substation appears to have been wrecked as a result of 1940-41 bomb damage (LMA index) [along with Beech Street]. No obvious sign of electrical plant today, though there appears to be significant plant in building just to south.	C-03A

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
W	June 1906	In use	Duke Street Gardens Substation	Centre of block surrounded by Duke Street and Brown Hart Gardens, W1	Westminster Electric Supply Corporation	Duke Street substation. This unusual and stylish edifice, together with the paved garden on top, was built in 1903–5 for the Westminster Electric Supply Corporation to the designs of C. Stanley Peach, with C. H. Reilly as assistant. The Corporation had for some years enjoyed close relations with the Grosvenor Estate, having in 1890–1 been allowed to build a generating station and shops and chambers designed by Peach at the corner of Davies and Weighhouse Streets. But when in February 1902 their secretary, Captain Bax, first suggested a scheme to replace the communal garden (see page 97) with a chamber for transformers one hundred feet by fifty in dimension and seven feet in height and housing a replanned garden on top, the Board was not enthusiastic. Nevertheless, continuing complaints about the nuisance from 'disorderly boys', 'verminous women' and 'tramps' in the garden, together with the second Duke's readiness to entertain the proposal, swayed their minds. Terms were with some reluctance agreed in September 1902 whereby for the sum of £4,000 the Corporation was to have a sixty-year lease at an annual rent of £200. Once the decision became known it aroused some protest among neighbouring tenants, who regretted the loss of trees and amenity, but they were to an extent placated by the promise that the garden would be restored by the Westminster Electric Supply Corporation with new trees in tubs. In the summer of 1903 the old garden was closed, its furniture, fountain and shelter were distributed to other sites in London, and work proceeded from then until 1905, with Kennedy and Jenkin acting as engineers and George Trollope and Sons as contractors. The new garden (Plate 31b in vol. XXXIX) was opened on 16 June 1906 (about a year after its completion) by the Mayor of Westminster, Lord Cheylesmore.	W-06A

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
W	Mar 1891	1921	Davies Street	83 Davies Street, Mayfair (Just south of junction with Oxford Street). No trace PO1934 (gap in numbers).	Westminster Electric Supply Corporation For Davies Street see: http://www.british-history.ac.uk/image.aspx?compid=42184&filename=figure0298-019-b.jpg&pubid=298	No obvious trace left. Equipment provided by Electric Construction Corporation. Station occupied block comprising Nos. 75–85 (odd) Davies Street and 7–9 (odd) Weighhouse Street. In 1978 the site was awaiting redevelopment in connexion with the rebuilding of Bond Street Underground Station, but it was formerly occupied by a block of shops and chambers which were erected in 1890–1 in conjunction with an electrical generating station (Plate 19b). The Westminster Electric Supply Corporation, which was one of the companies competing in the supply of electricity to Mayfair and adjacent parts of Westminster, approached the Grosvenor Estate early in 1890 for a site on which to build a power station. The Board suggested a large plot at the corner of Davies and Robert (now Weighhouse) Streets, for which the Company agreed to pay a rent of £406 per annum on a sixty-year lease. The generating station itself was designed by Professor A. B. W. Kennedy, who was the Company's chief engineer from 1890 to 1926, but the architectural dress was supplied by C. Stanley Peach. The builders were Holliday and Greenwood. Peach's lively street façades were not unfitting company in the impressive group of late-Victorian buildings towards the north end of Davies Street including St. Anselm's Church, Boldings' factory and the headquarters of the St. George's Rifles, all except Boldings now demolished. Contemporaries, however, seemed as interested in the massive chimney-shaft of the power station as in the design of the chambers and shops, one observer commenting that 'It is very satisfactory to note the care taken with the designs of these stations, now so numerous; their chimneys have mostly some features to recommend them to the eye, and the thread of white steam, which is all that usually rises from them, rather enhances the effect of their mass against the sky'. The power station closed in 1922 and although the premises were subsequently used as a garage the chimney survived until the recent demolition of the whole block.	W-06

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
W	1893	1923	Carnaby Street	Carnaby Street, Golden Square W (likely also described as Marshall Street). [On east side, between 8 and 19, the latter on corner Ganton Street]. PO 1934 shows No 19 as reg office Central Electric Supply Co Ltd.	St James's & Pall Mall Electric Lighting Co	Became substation fed from Grove Road. Company's offices in Carnaby Street. No 9 Carnaby Street disposed of by LEB comparatively recently and block redeveloped (NB large substation behind). Survey of London notes: The south end of Carnaby Street has now been rebuilt with offices and warehouses in nondescript styles, and the first building of character is on the east side, in the station of the former St. James and Pall Mall Electric Light Company (Plate 140c). The southernmost part of this building is the earliest, a curious structure of yellow brick with red dressings, designed in a strange mixture of Victorian Gothic with Baroque details.	W-04
W	1890	Still there	Blomfield Place	Off New Bond St, near 137 (W side between Grosvenor St and Bruton St). PO1902 refers to LESCo distribution station	London Electric Supply Corp	This comprised premises once part of the Grosvenor Gallery power station. Converted in stages to distribution statement originally taking supply from Deptford. A substation still exists on the same site, the present building of dark bricks and concrete being erected in 1967-8 to the designs of Mr E Hopkins of the London Electricity Board.	
W	4 Apr 1889	1910	Mason's Yard	Mason's Yard, by 12 Duke Street. PO 1902 refers to SJPM premises in block listing Fred Walker as GM & Sec; and PO 1934 shows substation in block including Nos 1-4. 1899 plan suggests power station may have been in centre of yard. New White Cube gallery in middle of yard said to be new building on site of older gallery that appears to have been converted substation.[24]	St James's & Pall Mall Electric Lighting Co. (Reg Mar 1888)	Became substation fed from Grove Road. Presence in 1915. Station caused various complaints about emissions from chimney. Distribution mainly by overhead lines.	W-12

[24] See: http://www.rudi.net/pages/16919

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
WC	1 Sep 1889	Early 1905	Sardinia Street	8 & 10 Sardinia Street WC, but not the current street of that name. Sardinia Street was until 1903-5 about 50 yards further north and crossed the site of the future Kingway, turning south west to join Kemble Street at junction with Great Wild Street. The power station was at the turn, on the north west side, on northern corner of Sardinia place (precisely at point Kingsway later crossed). The entire road structure was subsequently reconfigured and there is today no trace.	Metropolitan Electric Supply Company (Reg 26 Nov 1887); Initially and briefly prefixed 'South' till 28 July 1888.	*Networks of Power* states "Commissioned in 1889 and situated at south west corner of Lincolns Inn Fields [not in fact its precise location]" to supply St Marylebone, Bloomsbury, Lincolns Inn and Covent Garden areas. Station demolished to make way for Kingsway. Station equipped with Westinghouse single-phase 1000V, 125 kW units. Nearly completely destroyed by fire in September 1895 and station subsequently reequipped with turbines, and in 1897 converted from ac to dc. The station stood precisely along the line of the LCC's Kingsway development and was finally closed in early Summer 1905, with demolition starting in July (by that time it had a capacity of 4MW).[5] There is still a major substation on or near the extreme western edge of the site beneath the CAA building.	C-04
				Woolwich M.B.			
SE	1903	Still going 1915 on one site and 1940 on two. Not there 1950.	Plumstead	White Hart Road, Plumstead Marsh. By 1940 described as Plumstead A and Plumstead B stations. At least one of the buildings still exists in disused Council depot and is Grade II listed. www.derelict.london states generation ceased (from this building) in 1923 (and incineration in 1965). For pictures see: http://www.derelictlondon.com/id1383.htm	Woolwich Metropolitan BC	When opened, included dust destructor plant. By 1940 substations at Plumstead, Woolwich, North Woolwich, Eltham. Garke 1925-31 period suggest Plumstead already gone and was main distribution station with nine substations.	O-10
SE	Sept 1893	30 Oct 1978	Woolwich	Bell Water Gate (later described as Globe Lane/Rodney St, which was on E side. BWG on W side). Just E of Woolwich Ferry	Orig Woolwich District Electric Light Co. Purchased by Woolwich BC 1903.	Station said to have been converted boat yard. Was heavily rebuilt in 1920s, though some work was evidently in hand 1912 (perhaps not finished until 1920s when it is suggested it was opened)[6], suggesting new building, continuing until 1950s[7]. First of three chimneys in 1920s. Others after war. Garcke reports low pressure station into service 1928, intermediate pressure 1940-47 and high pressure 1952-55. Capacity 1959 170MW, Still generating 1969. On closure demolition started 1978. Initially supplied street lights and first house was at 262 Burrage Road. Man on bus killed in December 1920 when a piece of a turbine detatched itself at high speed and hit the bus like a missile. Speed governor had failed. Now waterfront leisure centre car park.	O-12

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
				OUTER LONDON POWER STATIONS			
				East London			
E	1899	1925	Barking	At rear of the UDC offices in East Street[8] (Approximately numbered 52-60, on SE side of road, south west of junction with Ripple Road). Bulk supply point from CoLESCo later provided in nearby Axe Street where converters were installed.	Barking UDC	ELO 1897. Barking took a bulk supply from the County of London E.S. Co upon construction of the new power station in River Road. Power station also supplied the tramway service during its brief life, and the manager of the electricity station also ran the tramway.	E-00
E	19 May 1925 (last set 1929)	1969	Barking (later Barking A)	Barking Power Station, River Road, Dagenham. {Creekmouth} By Barking Point	County of London Electricity Supply Co	Sanctioned 1913, built 1922 supply started in 1925 (100MW) and station complete 1930 at approximately 200MW. Opened by HM King George V. Believe when Barking A closed part of C was built on same site..	E-01
E	1933 (last set 1940)	15 March 1976	Barking B	Barking Power Station, River Road, Dagenham. By Barking Point	County of London Electricity Supply Co	Barking B was in form of extension of Barking A (shared turbine hall) and was mainly built 1933-42 and not completed until 1955. Still functioned in 1969 but had closed by 2000. Combined outputs from A and B 1947 was 540MW.	E-02
E	1952 (compl 1954)	26 Octobe r 1981	Barking C	Barking Power Station, River Road. Dagenham. By Barking Point	British Electricity Authority	Barking C commenced supply in 1952, last set in 1954. New building and turbine hall to east. Believe Grid Substation now on site of Barking C. Converted to oil firing in 1960.	E-03
E	1995		Barking (Reach)	Barking Reach Power Station, Chequers Lane, Dagenham. (Nr Dagenham Dock)	Barking Power Ltd (later Thames Power Services Ltd)	Construction began in 1992. Supplies a third of London's Power.	E-04
E			Canning Town	See West Ham			
E	June 1901	1931	East Ham	Nelson Street, East Ham (opposite Poulett Rd). The electricity Dept premises (including power station and substation) was next to the Nelson Street tram depot on the east side (the tram depot and offices closed 7 September 1933 and returned by the LPTB to East Ham Council for disposal)	East Ham UDC (later CB)	Interconnected with West Ham 1922. Supply taken from LHCJEA April 1932. Building later became substation.	E-07
E	April 1901	1 Oct-ober 1952	Ilford	Ley Street, Ilford (No approx 495), corner Perth Road.	Ilford UDC (later Ilford Corporation)	Still going 1950, with 2MW (3MWI) capacity. Was taking bulk supply from CLES Co 1927. (And West Ham). Closure date Garcke 1953/4	E-10
E	8 Sept 1896	1927[25]	Leyton	Cathall Road, Leyton. (On S side backing onto cemetery, opposite Norman Rd)	Leyton UDC, later Corpn.	Substn on site. On closure bulk supply from Walthamstow and CLESCo.	E-11

[25] Per LMA Archive indexes.

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
E	20 Sept 1901[9]	March 1968[10]	Walthamstow	Exeter Road, Walthamstow E17. Immediately east of Walthamstow T&H station.	Walthamstow UDC, later Corpn. Also took bulk supply before 1935 from Grid and Leyton. Became selected station.	Was 13MW (19.5MWI) capacity 1959, still generating 1963.	E-16
E	1895	1898	Public Hall, Canning Town	Probably the hall in Barking Road (north side) just to east of Ordnance Road.	West Ham County Borough Council	Temporary electricity supply following issue of Provisional Order in 1892. Date of closure approximate.	
E	11 December 1898[11]	1905	Abbey Mills	From cutting about laying of stone 3 Nov 1897 for pumping and electric lighting station (W Ham library) it appears this building was in block bounded by Northern Outfall Sewer, Channel Sea River, and Abbey and Canning Roads. 1902 PO guide suggests very close to PS.	West Ham County Borough Council	Replaced the temporary Public Hall building. Was still apparently generating in 1915.	
E	6 April 1904	1968	West Ham (Occasionally Canning Town). Later West Ham 'A'	On east side of River Lea, immediately south of Gas Light & Coke Works and its river inlet, road access probably to Quadrant Street or Tucker Street, per 1914 map. Described as Canning Town 1914 Garke. Later references call it 'West Ham' with address at Bidder Street, West Ham E; Between Bidder St and Bow Creek, Canning Town. Site appears to have been considerably enlarged and various small roads obliterated.	West Ham (County) Borough	Bombed 7 Sept 1940. Open again by 1953; Capacity 1959 48MW and still generating 1963. Supplied in bulk to East Ham and Ilford from 1926. One of the reasons for this second power station was to provide a supply to the West Ham tramways. It was extended several times to 1914 and again in 1922.	E-17
E	1951[12]	31 October 1983	West Ham B	By West Ham A, with prominent concrete cooling towers.	British Electricity Authority	New 1950s station upon which construction started 1947 with sets coming on line Dec 1947, May 1950, March 1952 and October 1952, capacity 114MW. Still open 1969.	E-18
				Hertfordshire			
Herts	31st Aug 1900	1905	Barnet	Tapster Street, Barnet, Herts	Northmet EPD Co. Taken over by Northmet PS Co just before closure.	Northmet Bulk Supply provided on closure. Became substation.	H-01
				Kent			
Kent	22 Nov 1900	26 March 1959	Beckenham	Arthur Road (later Churchfields Road), Beckenham, Kent	Beckenham UDC Lighting.	Opened as Dust Destructor. In 1915 had capacity of 1.05MW. At time of closure had capacity of just 4MW.	K-01

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
Kent	1936	????	Erith (Belvedere)	Large new station off north end of Norman Road, near Thames.		New station designed to feed into national grid. Appears to have superseded bulk supply from Woolwich. Note even newer station 1960s oil burning.	
Kent	May 1959	1980s (after 1984)	Belvedere	Norman Road, Belvedere, Kent. East side of road.	BEA	New 1950s station designed for ultimate capacity of 450MW but just 171MW in 1959. Sets introduced May 1959, Sept 1959, Dec 1959, completing first half of station. Second half then planned, no dates given. By 1984 there was a High Pressure and separate Low Pressure station. The HP station had capacity of 230MW and was completed in 1961 and the LP station had capacity of 115MW and was completed in 1960. Both were oil fired.	K-01A
Kent	1962	1980s	Erith (Belvedere)	Large new oil fired station off north end of Norman Road, near Thames. Opposite Ford site at Dagenham.	CEGB	Note even newer station 1960s oil burning. This seems to be the second half of the 1959 station.	
Kent	(2010)		Erith (Belvedere)	Further expansion of Norman Road site	Cory Environmental	Large new waste plant designed to generate 62MW from river borne waste.	
Kent	1998	Open	Cross Ness (Belvedere)	East of main sludge works, east of cross ness.	Thames Water	Sludge Burning facility associated with the pumping station and sludge works. Much of the energy is returned to the works. 6MW capacity.	
Kent	1 Oct 1903	21 July 1925	Bexley	Bourne Road, Bexley (just N of Weir Road). Kent.	Bexley UDC Electric Supply	Bulk supply given to West Kent March 1912. On closure of PS bulk supply bought from Woolwich Borough.	K-02
Kent	Jan 1899	30 June 1931	Bromley	There were offices at No 1 West Street with a small power station alongside.	Bromley UDC. Transferred to Bromley Electric Light & Power Co 1898, and back to Bromley Corporation Electricity Supply 1 April 1927.	On closure of station supply taken from West Kent Electric Co Ltd. The Bromley Electricity offices survived to LEB days.	K-03
Kent	1901	28th June 1928[26]	Dartford	Priory Road, Dartford.	Dartford UDC	Eventually took bulk supply from West Kent ESCo 1922-36.	
Kent	1940-1982		Dartford (Littlebrook)	Stone Marshes, Marsh Lane, Dartford	Kent Electric Power Company (Littlebrook "A", closed in 1973); BEA (Littlebrook "B" closed in 1975); CEB (Littlebrook "C" closed in 1981); CEGB (Littlebrook "D") but now owned by NPower.	Littlebrook 'A' opened 1940 (115MW), "B" opened 1950 (113MW) and "C" opened 1963 (231MW). By 1984 Littlebrook "D" was being commissioned, a 660MW oil plant that first came on line 1981 with ultimate capacity of 1100MW. There was also functioning a 105MW GT station opened in 1982 on the same site as "D"; this employs three RR Olympus engines. The older station originally used coal, but were later oil converted.	

[26] Per Garcke V36 (1933/4)

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
Kent	Jan 1903	1927[27]	Erith	First generating station at Walnut Tree Road, north end east side, where LEB electricity plant still exists today. This appears also to have been close to the Erith Tramways depot on other side of road (which closed end 1933), and tramway substation was probably part of old generating station site. In 1940 electricity offices in Pier Road.	Erith (Kent) UDC Lighting	Also supplied tramway from late 1903, which required doubling size of power station. At that time station evidently generated and distributed ac supplies and tramway supply was converted to dc using converters. Suggested this brought station output up to 1.35MW[28]. In 1921 HV connection made to Woolwich; supply brought in by 33kV lines to substation in Walnut Tree Road (north end of road on east side). Suggestion that generation had ceased by 1934 (LMA notes indicate 1927). Maps also show electric light works at Slades Green, nearby[29] and this remains to be investigated..	K-04
				Middlesex			
W	2 July 1900	After 1936-7 but before 1953.	Chiswick	Chiswick. While the HQ office was for many years at 93 Chiswick high Rd, the works appear to have been between Pumphouse Road and the Thames, but 1914 directory refers to works at nearby Corney Road. No trace today and area entirely redeveloped.	Chiswick Electricity Supply Corporation. Registered as Bourne & Grant Electricity Supply Co Ltd 13 May 1893. Renamed Aberystwyth & Chiswick Electric Supply Corporation Ltd, and to final name in 1904. According to The undertaking was purchased by Brentford & Chiswick UDC on 1st Jan 1935[30].	Garcke 1899 noted provisional order granted to the District Council in 1891, transferred to Bourne & Grant Electricity Supply Co (who supplied Aberystwyth). For most of life supply low pressure dc. In 1915 capacity was 1.213MW. Bulk supply from Hammersmith 1917. At that time the local Council were looking into acquiring company, though this did not happen until 1935. At that time total capacity was 5MW of which 3.8MW was via rotary converters (presumably from Hammersmith bulk supply). Generation load claimed only to be 660kW, and station could not have carried on long.	W-05
W	3 Oct 1894	21 December 1928	Ealing	Orig site (1915 map) east of South Ealing Road, immediately south of Ealing & Old Brentford cemetery (off Occupation Lane, south side). PO 1915 states South Ealing Road. Various local authority premises adjacent. May have moved later to Popes Lane, Ealing, between Knights Avenue and Elderberry Road, where current grid substation located.	Ealing Local Board (later Ealing UDC, then borough)	Dust Destructor plant (next to sewage farm). Now Grid substation. Closure from Garcke 1931 stating that bulk supply now taken from Metropolitan Electric Supply Co. The LHCJEA had intended to build power station at Dukes Meadow around 1925b but this was abandoned in 1928.	W-07
Mdx	1904	1976	Brimsdown A	Marsh Lane, Brimsdown, Enfield (By Lea Navigation)	North Metropolitan Electric Power Supply Co	Station closed in 1935 and reconstructed, reopening 13 Dec 1938. Still in use 1969. Site redeveloped after closure.	M-01

[27] Still in Garcke 1927/8 (V31) but not following year 1928-9 (V32)
[28] See http://www.bexley.gov.uk/localstudies/local_history/guide_pdfs/70_erith_tramways.pdf
[29] See PO Directory Kent Vol 2 (Trades) P1015. However Vol 1 suggests Walnut Tree Road. Garcke only shows one station in area but not clear which.
[30] See http://www.british-history.ac.uk/report.aspx?compid=22564#n122

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
Mdx	April 1932	1976	Brimsdown B	Marsh Lane, Brimsdown, Enfield (By Lea Navigation)	North Metropolitan Electric Power Supply Co	Quoted date may be 'official' date but low pressure side of station stated to have been brought into operation 1928-32 and high pressure side in 1942. Still in use 1969. Site redeveloped after closure. New Grid substation on site. See below	M-02
Mdx	2000?	Current	Brimsdown/ Enfield	Enfield Energy Centre, former Brimsdown Power Station, Brancroft Way, Enfield (BNW95)	New power station on old site		M-02A
Mdx	Sept 1896	1921	Harrow	West Street, Harrow (north side about half way up hill)	Harrow Electric Light & Power Co. Company taken over by Northmet June 1933.	Bulk supply from NorthMet after generation ceased. Query takeover date. Think 1939.	M-03
Mdx			Hayes	Bulls Bridge, North Hyde Road. Either side Yeading brook on 25 acre site.		Land purchased from Middlesex County Council. Redeveloped late 1990s. CEGB developed power station there as open cycle GT station in 1970s but was later mothballed. Reopened 1980s. 280MW. Closed 1993 and site redeveloped. Fed into North Hyde substation.	
Mdx	Nov 1904	Early 1963 (steam) 1965 the rest	Hounslow	Depot Road, Pears Road, Hounslow Middx. (In early days described as Bridge Road, which runs down back of site, presumably station expanded to west).	Heston & Isleworth (Middlesex) UDC Lighting	In 1960 described as steam and diesel station, capacity just 3MW. Appears Internal Combustion Engine generator in 1963, nothing 1969. The steam section of the station was decommissioned after winter as unserviceable. The IC section appears to have closed during 1965 (not in 1966 h/b).	M-04
Mdx	1 May 1902	Early 1963	Uxbridge	Waterloo Road, Uxbridge; half way down on west side backing onto canal. TQ050835	Uxbridge & District Electric Supply Co.	Was 4MW capacity in 1959 (though 1950 capacity stated as 4.998MWI). Appears to have closed by 1963. New substation on part of land backing on canal. There is a major grid substation nearby, off Slough Road/Cherry Tree Lane. The station was decommissioned after winter as unserviceable.	M-05
N	1900	Prob 190	Mountfield Road (Finchley)[13]	At or near Mountfield Road (off Regents Park Rd), Church End, Finchley. VCS Vol 6 refers to "a small gas-engine station near Mountfield Road".	Finchley Electric Light Co. (Dissolved in 1907)	Private company which commenced generating using Dowson gas engines. Had exclusive rights to Finchley Manor Estate. Distributed 2-wire 230V with battery backup. Soon encountered trouble with Finchley UDC which had its own proposals and in 1901 began cutting cables, a practice they were obliged to stop after litigation. Company purchased by Finchley UDC in 1905. Generation probably ceased soon after[14].	N-00
N	Oct 1903	1958	Finchley	Squire's Lane, Church End, Finchley N. Situated north side of road east of and backing on to railway.	Finchley UDC (later BC)	Finchley station opened at end 1903 at about which time it purchased the Finchley Electric Light Co. Now substation on site. Bulk supply obtained from L&HCJEA 1 Jan 1931; run on behalf of CEB by agreement. By 1936 bulk supply outstrips that generated tenfold. Power station site now occupied by *Pentland*. PS orig 200kW, but soon expanded to 550kW. Cooling ponds renowned for large fish. In 1950 quoted as 4.7MWI (3MW).	N-01

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
N	2 March 1903	10 Nov 1944	Hornsey	Tottenham Lane (on south side, by railway yard near Hornsey station), Hornsey N.	Hornsey BC	Station bombed by V2 and closed. Remains of buildings demolished 1960s but substation on site, apparently under construction 1964. Former battery room became CEGB Radiological laboratory. [15] Bulk supply from LHCJEA Nov 1929.[16]	N-02
NW	1899	1984	Acton Lane (prob. Later Acton Lane A)	Acton Lane, Willesden, by G.J. Canal. In angle bounded by canal, Acton Lane, LNWR and Midland Rys.	Metropolitan Electric Supply Company	London Power Co took over from 1 Jan 1927. Rebuilt after WW2 and recommenced supply in 1946 with 22MW capacity. Still open 1969	T-01
NW	1954-58	1984	Acton Lane B	Acton Lane, Willesden, by G.J. Canal. Near to above, located in Everitt Road, Willesden, London NW10		New station next to Acton Lane A of 143MW capacity. Still supplying in 1969. After closure used as film location for a while (Includes Aliens [1986], and Batman [1989]). Now substantial substation on site. Suggested by WikiP that one or both closed 31 October 1983.	T-02
NW	1903 (1979)	Old site closed 1972. Still generating on modified site.	Willesden	Willesden, Taylors Lane NW10. (NEED TO CHECK NEW SITE). Was originally at end of Taylor's Lane (on W side but adjacent to railway).	Willesden Borough Council. PS Transferred to North Metropolitan Electric Power Supply Co same year (One source states 1904-Distribution remained with Council).	Was 70MW in 1959 and still generating 1969. Still generating with GTs following re-equipment in 1981, but on site over road (presume old station shut). 1981 station had 140MW capacity Note CURRENT power station reported at: POWERGEN UK PLC TAYLORS LANE POWER STATION BRENTFIELD ROAD BRENTFIELD WILLESDEN LONDON NW10 9BU. This is just to West of old site Currently Open Cycle Gas Turbine production. Opened 1979.	T-08 T-09
NW	?	1958/9	Willesden, Gibbons Road	Gibbons Road, Willesden, in block between Gibbons Road, LMR, Leicester Road and Alric Avenue/; Suggest this is (or is allied to) Taylors Lane.	No Information	This now appears to be a national grid primary substation on the site. Closure reported in 1962 Middlesex development plan, but not shown 1959/60 Garcke	T-10
				Surrey			
Sur	On or about 31st October 1903 (though formally opened 25th June 1904	Oct-ober 1924	Caterham	85 Croydon Road	Urban Electric Supply Co; however construction and operation was subcontracted to Edmundsons.	The station was proving hopelessly inefficient and shortly before closure a bulk supply was obtained from CoLESCo via new 11kV feeders from Wandsworth. The (UESCo) distribution undertaking in Caterham and Warlingham was sold to CoLESCo in 1934 (the rest of the company was sold to Edmundsons). In 1948 the ownership passed to the LEB though this area was managed on their behalf by SEEBoard, to which it was formally transferred in 1963. A 33kV substation survives on part of the old power station site, obtaining its supply from Purley, in turn taking a 132kV supply from the grid intake at Beddington (400kV). The original power station had only 88kW capacity but was frequently upgraded and at closure it was 270kW, with an efficiency of just 5%.	

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
Sur	Nov 1896; Last set 1940	1973	Croydon (A)	Factory Lane, Croydon	Croydon CBC	Appears station was entirely re-equipped with new low pressure sets coming into service 1924, 1925, 1931, 1940 and a high pressure set in 1937. Capacity 1950s was 68MW. Still supplying 1969. Parts survive.	U-01
Sur	First set 1950, last set 1951	1984	Croydon (B)	Beddington Farm Road, Croydon	BEA as successors to Croydon CBC	Sanctioned 1939 with construction starting 1947. Commissioned September 1950 and completed December 1951 at 196MW capacity. New 70MW set March 1965 fuelled by gas oil (in new GT section of station). Still supplying 1969. Now IKEA site but chimneys survive.	U-02
Sur	Nov 1893	31 August 1959	Kingston (A)	Downhall Road, by Native Guano Works. Subsequently rebuilt as Kingston A with address described as Lower Ham Road (same but enlarged site).	Kingston Corporation	An unfortunate station throughout its long and underused life. Seriously damaged by Fire 1938 but subsequently patched up. Bulk supply from LHCJEA from July 1931. Capacity at closure was just 5MW.	U-03
Sur	27 October 1948	31 Oct 1980	Kingston B	Downhall Road. On site of sewage (formerly guano) works. (Near A station)	BEA	First post war station, opened by King 27 October 1948. Commissioned by Kingston Borough Council in 1945. Sets commissioned October 1948, December 1948, December 1949, April 1950. Still supplying 1969, capacity 117MW. Both demolished 1994.	U-04
Sur	Aug 1903	1934[31]	Surbiton	Hollyfield Road (off Ewell Road, now Warren Drive), Surbiton, Surrey.	Surbiton & District Electricity Supply (owned by Callendars cables); previously operated by Surbiton UDC.	Still going 1931. Ownership assumed by LHCJEA 1932. Appears to have ceased generating by 1936. In 1931 a bulk supply was already drawn from outside the area (750kW) and generating plant totalled 580kW capacity.	U-05
Sur	March 1902	About 1928[32]	Sutton	Langley Park Road, Sutton. Substation later described as in Wellesley Road (likely to be same site as its in same block).	County of Surrey Electrical Power Distribution Co 19th April 1899. Became South Metropolitan Electric Tramways and Lighting Co Ltd. 7 Aug 1904. (Became part of London & suburban Traction Co 1920s). Generating and Lighting functions purchased by LHCJEA 1st July 1932, by agreement, undertaking then known as Sutton & District Electricity Supply.	Supplied substantial area incl: Carshalton, Sutton, Wallington, Epsom. Ran small tram system. 1920s area extended to Banstead, Walton, Kingswood. Electricity purchased in bulk from CLESCo from 12 December 1915 (Penge area from Beckenham UDC). Had ceased generating by 1935.	U-06

[31] Shown in 1933-4 vol but still indications of generation until Vol 39 when zero. Implies final generation 1934 or very early 1935.
[32] Not in V36 (1932-3) which observes bulk supply already to Sutton substation.

Loc	Date Opened	Date Closed	Name	Location	Owning Company	Subsequent owners and other notes	Ref No
Sur	July 1902	1940/1-1945/6[33]	Twickenham	Hamilton Road, Twickenham.	Twickenham & Teddington Electric Supply Co (Reg 29 June 1898). Acquired by LHCJEA 1932, after which known as Twickenham & District Electricity Supply.	Substations at Teddington, Hampton & St Margarets. Still going 1936, by which time interconnected with Kingston & Richmond. Building (the Old Power House) still exists as storage co offices. It had occasionally been used as a film set. The site is currently being considered for development.	U-07
SW	1 May 1901	26 March 1959[17]	Barnes (Mortlake)	121 Mortlake High Street, SW14	Barnes UDC (later Barnes Corporation)	In 1925 first substation opened in Upper Richmond Rd (East Sheen)[34]. Bulk supply from LHCJEA December 1930, and soon became main source of load. After war supplied peak demand only and in 1948 local distribution system comprised 15 substations. Building mainly demolished 1964; façade still there fronting private offices. LEB substation remains on site. At closure had capacity of about 5MW (had peaked at 9740kW in 1947)	S-02
SW	Oct 1893	Believe closed circa 1915.[35]	Richmond	The Quadrant, by Princes St, Richmond (just south of the railway).	Richmond (Surrey) Electric Light & Power Co. Appears original source was local authority.	Still going 1913/4 with 1.132MW capacity. Bulk supply from various sources, including MDR and (from July 1931) LHCJEA. By 1935 supply in bulk from CEB supply at Kingston. In 1915 distribution at low pressure dc 3-wire. Network capacity 2.35MW 1925/6 and 2.85MW capacity 1928/9. The REL&PCo was purchased by Bournemouth and Poole Electricity Supply Company Limited in 1899, by which time the acquiring company was already owned by County of London E.S.Co.	S-15
SW	July 1899	1968	Wimbledon	Durnsford Road, Wimbledon SW located on N side of Rd (S of Railway) between Rd and Sewage Works. (Different from railway PS). NB additional large electricity plant to NE next to stadium, by Riverside Rd.	Wimbledon UDC, later Wimbledon Corporation. From October 1933 PS transferred to L&HCJEA.	In 1959 capacity stated as 18MW, still generating 1963 (not 69). This address LEB Surrey Dist in 1969. Bulk supply from LHCJEA October 1933.	S-20

[33] Shown in earlier Garcke but not later one.
[34] See LMA notes.
[35] Supported by 1899 Garcke, but 1915-6 volume implies bulk supply now obtained by virtue of Act and agreement of 1913; implies main supply from County of London.

SOME NOTES ABOUT THE POWER SUPPLIERS

[*Notes from Garcke 1915/1935-6 and LMA Indexes*]

Barnes UDC

Provisional order granted 1901 for local supply. Consumers rose from 125 in 1902 to 2886 in 1915 and 12,145 in 1947 when there were 15 substations. By 1915 was supplying dc at 210/420V 3-wire (approx capacity 1.75MW).

Battersea Vestry Lighting (later Battersea Metropolitan Borough Council whence it operated as Battersea Metropolitan Borough Council Lighting)

Obtained Electric Lighting Order in 1896 and commenced a supply in September 1901. The undertaking initially supplied 3-wire dc at 230 and 460 volts (station voltage 520V). There were just 324 consumers by end second year. Wide variety of plant provided or added and in 1915 station capacity was 5092kW. Station constructed in Lombard Road, Battersea. Supplied public lighting and consumers within Borough (required rating support). Made mutual assistance agreements with Fulham MBC and Hammersmith MBC under London Electric Supply Act 1908. In 1925 first transformer substation built at Chatham House. In 1927 showroom and offices opened in Lavender Hill. By 1936 station had been upgraded (mainly around 1931) and was additionally generating at 6—6.6 kV and distributing at 230/460 Vac single phase and 230-400V ac 3-phase. Had become CEB Selected Station. Capacity had by now been raised to 52.35 MW. The lighting department also sold gas to consumers.

Barking UDC

The undertaking obtained powers to supply electricity in 1897[18]. Built and operated power station shortly afterwards when they contracted with County of London E.S. Co for a bulk supply at 6600V. By 1915 were operating 3-wire dc network distributing at 230/460 V dc for power circuits with limited 3-phase in outlying districts at 400/230 V ac. Considerable variety of not-very-big generating plant totalling 930 kW, also used for local traction supply to tramway (which closed in 1933). By 1936 ac distribution was available (as well as the old dc) at 400/230V 4-wire. The converter plant was installed in Axe Street, probably on land at back of the enlarged council office site fronting East Street. Showrooms provided on Ripple Road.

Beckenham UDC

ELO granted 1893. Electric Lighting and Dust Destructor began operation 1900. Council operated a free wiring scheme. The original scheme covered 6 square miles and excluded West Wickham and part of Hayes, only added later (1913). The Council acquired part of the undertaking within its boundaries of the South Metropolitan Electric Light and Power Co. By 1915 was distributing ac (50Hz) at 200/400V 3-wire, 12 substations being employed. Extension then planned to supply Penge section of South Met Tramways. In 1911 showroom at 45 High Street opened, soon followed by offices at premises next door. Supplies later provided in bulk to West Kent Electricity Company Ltd.

Bermondsey MBC

ELO granted 1899 with supply started 1902. A 1902 order authorized bulk supply to Rotherhithe. Bulk supply from LESCo began 1917 and local generation ceased 1930. In 1915 supply was dc at 240/480V 3-wire. According to LMA, in 1922 a scheme of assisted domestic wiring and fitting was introduced. In 1938 the main aim of the Electricity Department was 'the

simplicity, efficiency and economy of electricity for all domestic purposes'. The Municipal offices were based at Spa Road, Bermondsey and showrooms were opened at 320 Jamaica Road, Rotherhithe for the display and demonstration of electric light fittings and appliances. In 1940 the main offices were hit by enemy bombing and many of the records were destroyed.

Bethnal Green MBC

Following grant of its ELO in 1899 Bethnal Green never generated but eventually took a bulk supply from Stepney, beginning 1916. In 1938 the electricity department was based at 1 Old Ford Road, but headquarters and service centre was based at Town Hall in 1948.

Bromley UDC and Bromley (Kent) Electric Light and Power Company Ltd

Bromley UDC obtained an ELO in 1891. In 1898 the order was transferred for maximum of 42 years to the Bromley (Kent) Electric Light and Power Company Ltd (regd 23 September 1897) who developed a supply for Bromley and Chislehurst. A supply commenced in January 1899. A dc supply was distributed at 210V 3-wire. In 1915 total capacity was 1.62MW including a bulk supply at 2000V to Chislehurst (the supply company there was purchased by Bromley EL&P Co). In 1927 Bromley UDC purchased the distribution system from the supply company. Generation ceased in 1931 when a bulk supply was taken from West Kent, following growth during that period from 3000 consumers to 13,000. By 1935 supply was distributed at 210/420V alternating current 3-wire 50Hz or (in outlying areas) 230/400V ac 3-phase 4-wire.

Brompton & Kensington Electric Supply Company and House to House Electric Light Supply Co Ltd.

Company Registered 20 Feb 1888 as House to House Electric Light Supply Co and renamed Aug 1889 Brompton & Kensington Electricity Supply Co. EL Order granted 1889. By 1915 station was distributing at 2000V at 83 cycles with substations and street transformers (100 consumers); alternators then in use 2900kW. On closure of generating capacity in 1928, supply taken from London Power Co. The B&KESCo had powers to supply outside the London area and undertakings were controlled supplying Eastbourne and Leeds and the company had interests in Madrid.

Cadogan Electric Lighting Company.

Commenced supply in 1888 in Chelsea Area. Was taken over in 1890 by the New Cadogan & Belgrave Electric Supply Company, who had premises at 91 Manor Street (later Chelsea Manor Street), who commenced supply in 1891. Name changed in 1892 to St Luke Chelsea Electric Lighting Company, but was taken over by Chelsea Electricity Supply Company later in 1893.

Central Electric Supply Co.

The undertaking was registered on 24th June 1897. It generated on a 7½ acre site at Grove Road, St Johns Wood, with plant capacity of 22MW. It obtained an Act in 1899 (supplemented by further Acts later) to supply in bulk to distribution companies; Grove Road supplying the Westminster Electric Supply Corporation Ltd and the St James's & Pall Mall Electric Light Company (ultimately superseding their own stations). These two companies were the main shareholders. In 1915 CES Co supplied 10.7MW to Westminster via MG sets (and apparently 2.2MW to St James's).

Substations (5):

Marshall Street (nr Broadwick Street) W (4000kW) [still there]‡

Masons Yard (off Duke St, St James's) SW (3300kW)*
Eccleston Place (Buckingham Palace Road) SW (3400kW)*
Horseferry (Road) SW (3000kW)*
Duke Street (Oxford Street) W (4300kW)*
*See also WESCo – these were presumably handover points.
‡This was handover point to SJ&PMELCo

Central London Electricity Ltd

The London Power Company was formed in 1925 to take over and improve the generating capacity of a number of central London electricity undertakers, leaving them responsible for distribution only. In 1936 the following six (distribution) companies came together as the Associated Electricity Undertakings Ltd in an effort to co-ordinate distribution:

Brompton & Kensington E.S. Co
Charing Cross E.S. Co
Chelsea E.S. Co
Kensington & Knightsbridge E.S. Co
St James's & Pall Mall E.L. Co
Westminster E.S. Corpn.

In 1938 they formally amalgamated to become Central London Electricity Ltd, the mechanism being for the Charing Cross ES Company to take over the other five, then change its name.

The LMA indexes report that during the Second World War (1939 - 1945), bombing and evacuation led to the loss of one-third of the company's customers and half of its electricity output. Units sold dropped to 303 million in 1943 but recovered to 434 million units in 1947. By 1948 there were 2,200 employees.

In 1948 Central London Electricity Limited Principal Offices were:

Head Office, 60 Saint Martin's Lane
Accountancy Branch, 19 Carnaby Street
Engineering Branch, 25 Eccleston Place
Commercial Branch, 63/81 Pelham Street

And showrooms were located at:

143/7 Regent Street
31 Belgrave Road
254 Earl's Court Road
147 Sloane Street
112 Victoria Street

Charing Cross, West End & City Electricity Supply Co.

Registered 12th June 1889 as Charing Cross & Strand Electricity Supply Corporation, name changed February 1905. Supply commenced 1891. By 1915 was distributing at 100/200/400 V dc, though generating 3-phase ac from main station in Bow (19 MW) to converter stations in the district. Main supply area: St Martins, Strand, Holborn, St Giles and City. Was renamed **Charing Cross Electricity Supply Co Ltd** in 1924. By 1936 the company was under the control of London Associated Electricity Undertakings Ltd and distributed at 200/400 V dc and 400/230 V ac. By this time Bow power station had been leased to London Power Co. Some oil dc sets set up in the district, presumably to support the main dc load.

Substations (1935):

12 Maiden Lane WC2
Short's Gardens WC
St Martins Lane WC
Chancery Lane WC
Soho Square WC

Aldwych WC
Trafalgar Buildings WC
85 Fenchurch Street EC3
86 Upper Thames Street EC4 (near Cannon Street Station, poss Walbrook Wharf)
68/70 Ludgate Hill EC4 (N side, Ludgate Hill end, just west La Belle Sauvage Yard).
Seacoal Lane (probably only building in it, and in all probability is same site as above)
9 Beech Street EC1
Broad Street EC
Smithfield Markets

There remain today significant electrical installations at these sites

Chelsea Electricity Supply Company.

It was registered in November 1884, with authority to supply the local area in 1886 and commenced supply in 1889. The main area of supply was Vestry of Chelsea (in competition with London Electric Supply Corporation, also receiving authority in 1889). The Chelsea Electricity Supply Company served the whole MB and although the London Electricity Supply Corporation was authorized to supply there too it did not compete strongly, being a long way from its generation plant. In 1937 the Chelsea company, with several others, was acquired by the Charing Cross Company, and subsequently known as Central London Electricity Ltd.

For a few years this company had generating premises in Draycott Place (later known as Cadogan Gardens [the southern arm]). This power station (in basement of house) was in use only briefly and was superseded by Flood Street (which also took over the Cadogan undertaking's Manor Street load). It took over the St Luke Chelsea Electric Lighting Company in 1893. Premises were also taken at 19 Cadogan Gardens from about 1896 and this certainly contained the company's offices for many years (little evidence generation took place there). A new generating station was built at Flood Street between 1896-1901 described as a two-storied structure of brick with arched windows, with larger buildings behind; lasted until bulk supply obtained from London Power Company in 1927. This appears to have been on land backing onto the Manor Street site. Company also built a red-brick substation between Carlyle Square and Chelsea Square in 1897, by 1905 occupied by electrical carriage manufacturers and subsequently by motor car works. The building, derelict in 1992, was demolished before 2000. The Cadogan Gardens building still survives[19].

The Draycott Place station was supported by battery substations on site and at Pavilion Road and Egerton Mews. The original supply was at 100V, 2-wire. In 1897 this was raised to 100/200V 3-wire, but in 1912 it was raised again to 200/400V 3-wire. In 1915 the total plant capacity stood at 3.5MW. The original supply was entirely dc, but from 1928 the slow conversion to 50Hz ac began. The battery substations were in due course converted to MG stations until dc was finally eliminated.

The Flood Street site was still in service in 1979, but only as a substation. The Victorian buildings were demolished before 1992 and were replaced by housing by 2000, but later structures on Alpha Place and Chelsea Manor Street, presumably erected by the LEB, survived. London Electricity plc replaced the LEB under the Electricity Act, 1989. The remaining site is subject of current planning activity.

Note plaque on side of building Milner Street 4 Robert Lodge. 1899-1915

Chislehurst Electric Supply Co Ltd

Company formed in 22nd January 1897 and obtained licence in the same year and ELO 1898 that covered a part of the Parish of Chislehurst. A supply was started in 1899 and purchased in bulk from Bromley. The company was purchased by Bromley (Kent) EL&P Co in 1902. Was taken over by the County of London ESCo in 1927 (when its former parent in Bromley reverted to the UDC).

City of London Electric Lighting Company Ltd.
Registered 11 July 1891. Company obtained powers for City of London in 1890 (2) and 1891, Southwark 1891, and Acts obtained 1893 and 1900. Supply commenced December 1891 from power station at Wool Quay, though that station had very short life. This was soon supplemented from an older supply from Bankside (or Meredith's Wharf) owned by the City of London Electric Lighting (Pioneer) company which was in due course absorbed. Bankside was subsequently enlarged several times (first in 1892) and supplied whole of Company's load. Was 30MW by 1915. Under London Electricity Act 1925 undertaking became interconnected with County of London, South London and South Metropolitan undertakings.

County of London Electric Supply Company Ltd.

Registered on 30th June 1891 as County of London Electric Lighting Company Ltd, renamed 1893 as County of London and Brush Provincial Lighting Company Ltd with final name in 1904 (Brush's involvement brought some supply systems well outside London into the frame). Supply commenced in 1895. EL Orders in 1892 (3), 1895, 1896 (2), 1897, 1898, 1900, 1902 (Act), 1905 (Croydon), 1908 (London Electric Supply Act), 1913 (Romford, perhaps including Dagenham).

The first power stations were at City Road Basin (Finsbury) and Wandsworth. The Company at first focused on an area north of Holborn, but soon obtained supply rights in large areas of inner south London in large arc between Southwark and Battersea. In 1920s obtained extensive powers in outer areas, especially in and beyond north east London, Barking (1929), and (in the south west), Mitcham and Banstead.

In 1924 authority was granted to supply the areas of Wanstead, Woodford, Buckhurst Hill and Loughton, and this seems to have been the spur for erection of a large new station at Barking.

Substations located (1915):
Causeway, Wandsworth SW18;
Canal Basin, City Road EC1;
124 Hill Street, Peckham SE15;
Yukon Road, Balham, SW12;
1 Tooting Bec Gardens, SW16;
Broadwater Road, SW17;
Winthorpe Road, Putney, SW15;

Show Rooms:
206-208 Upper Richmond Road, Putney SW15;
1-2 Astoria Parade, High Road SW16;
The Boulevarde, Balham High Road SW17
150 Rye Lane, Peckham SE15

Once the National Grid was on the horizon the Company built a massive new station at Barking and closed down the City Road plant (in 1930). In 1935 the company was still generating at Wandsworth (22MW), Barking A (387MW) and with Barking B approaching completion with further 75MW. In 1937 company commissioned major new substation and distribution and control centre in Valley Road Streatham, dealing with south eastern and southern areas.

The 'County' company was a vast electrical undertaking and owned 21 subsidiaries mainly in southern and south east England, including Essex and Hertfordshire. Within the London area the 'County' owned (via Bournemouth & Poole Electricity Supply Co which it purchased in

1897) the Richmond (Surrey) Electric Light and Power Co that had been acquired by Bournemouth in 1899. It also controlled the South London Electric Supply Corporation (1918), Kent Electric Power Co (1923), South Metropolitan Electric Light & Power Co (1923) and the Chislehurst Electric Supply Co (1927).

Croydon (Surrey) Corporation Lighting.

Electric Lighting Order granted in 1891. Supply from Factory Lane site began by contractors in November 1896 and taken over by Council on 25 March 1898. By 1915 plant had capacity of 6.95MW, including supplies to corporation and South Metropolitan tramways. Consumer supplies at 230 and 460 V dc and 200V ac 60cycles. High voltage supplied to Norwood who distributed 400V 3-wire ac.

Crystal Palace & District Electric Supply Corpn.

Originally registered as the Electric Installation and Maintenance Co Ltd in 1891 the company was subsequently renamed and then taken over by the South Metropolitan Electric Light & Power Co in 1904. ELOs granted 1890/1894. Equipment provided by Electric Construction Corporation. Single power station provided at Upper Sydenham supplying Crystal Palace district of Camberwell.

Dartford (Kent) Urban District Council Lighting

Council granted ELO 1898 and commenced supply December 1901. Distribution on dc 3-wire basis at 230/460V. By 1915 capacity 1.3MW. Between 1922 and 1935 bulk supply taken from West Kent Electric Power Co and this comprised the majority of power distributed. Power station still functioning but cannot have lasted much longer.

East Ham (County) Borough Council

ELO granted 1898 with supply starting 1901 and ceasing 1931. Interconnect with West Ham 1922 and drawing from grid 1932. Branch showroom at 703/5 Romford Road.

Erith UDC

Erith Urban District Council's obtained its Electric Lighting Order in 1899 and supply commenced in January 1903. Electricity Department operated generation plant at Walnut Tree Road until 1927. In 1922 an agreement was reached with Woolwich and Bexley Undertakings to interconnect the generating systems to save local extensions of generating plant. Later bulk supplies were provided by the Woolwich Undertaking. In 1936 the generating station was rebuilt and a new station was erected at Belvedere. In 1939 new showrooms and offices were opened at Pier Road and Bexley Road, Erith, Kent. The number of consumers rose from 1,000 in 1910 to 12,000 in 1940.

Foots Cray Electricity Supply Company

ELO originated in 1901 in favour of the UDC and the FCESCo was established 15th December 1905 to provide the supply after taking over the order in 1906. Supply commenced 1907 the company receiving a bulk supply from Bexley UDC. The substation was situated in Sidcup. Control of the company passed to the County of London Company in 1936 with local administration being undertaken by its West Kent subsidiary.

Fulham Borough Council

Fulham Vestry (later the Metropolitan Borough Council) obtained its ELO in 1897. It constructed its own power station at Sands End (supply commenced 1901) which in 1915 had total plant capacity of 7.1MW (quite big for its day). At that time distribution was 2 phase ac

(50 cycles) via 22 substations. A dust destructor was associated with the station for some years. Fulham became a 'selected' station in 1937.

Hackney

An ELO was granted in 1893 with the local authority decided to supply on its own account, though a supply was only commenced on 31st October 1901 from a single generating station at Millfield Road, Clapton. The Borough obtained an Act in 1906 giving it more wide ranging powers. In 1915 distribution was undertaken on 3-wire dc basis at 240/480 volts, with total plant capacity of 4.8MW (but a large extension was under construction). Some interconnection was made to other systems to spread load (and cheapen costs), including Islington, Poplar and Shoreditch, and the NorthMet concern. By 1935 capacity had increased to 61MW (much of this via a 1932 extension) with a further 30MW alternator about to be installed. In addition to the old dc supply, electricity was now also distributed at 230/400V ac. A bulk supply was given to Stoke Newington from March 1928. The previous year the Borough switched street lighting from gas to electricity.

In 1925 Electricity Demonstration Halls and Offices were opened at 18-24 Lower Clapton Road. An earlier showroom had been run at 306 Mare Street. Upon the creation of the LEB, the area became Hackney District of the Northern Sub-Area and the offices and showroom in Lower Clapton Road became the Electricity Service Centre.

Hammersmith

An ELO was granted in 1893 with a supply commencing 21st June 1897 in the hands of the vestry (later becoming the Borough Council) from a station at 87 Fulham Palace Road. By 1915 the authority was distributing via a 2-wire ac system at 110/220 volts with station capacity of 10.3MW. By 1935 distribution was undertaken at 1-, 2- and 3-phase via transformer substations and plant capacity had risen to 28.5MW. However in 1930 an agreement was made with the London & Home Counties Joint Electricity Authority from which it was agreed the Borough would in future draw its supply, the authority temporarily meeting the costs of generation on the old site whose demise was expected shortly [after 1935], though in fact the station was retained until 1966 (by which time this inefficient station had a nominal capacity of 20MW).

The LMA records state that in 1911 a scheme of hire of wiring and fittings was offered to shop premises. From 1916 bulk supplies of electricity from the Borough were purchased by Chiswick Electricity Supply Corporation Limited and later Brentford and Chiswick Borough Council. In 1920 the interconnection of generating stations was agreed between Hammersmith, Fulham and Battersea Undertakings. In 1926 an Assisted Wiring Scheme was started for domestic premises including electrical installations and the rent or hire of appliances. In 1931 new showrooms and offices were opened at Electric House, 154 Uxbridge Road, Shepherds Bush Common. The Electricity Department's premises were later bombed during the Second World War (1939-1945).

Hampstead Borough Council

A small supply in the Hampstead area was first given by the Hampstead Battery Company in 1892.

Hampstead Vestry (later Hampstead Metropolitan Borough Council) gained its ELO in 1892 and purchased (according to Garcke) the undertaking of the North West London Electric Supply Company. A power station was constructed at the Vestry's stone yard, in lithos road (lithos being the Greek for stone), which opened on 1st October 1894[36]. By 1915 it was

[36] LMA records note 1893, which remains to be checked.

distributing at 105/210V 3-wire ac via 62 transformer substations. The power station then had a capacity of 5.8MW. The station had a short life, with a bulk supply being obtained from St Marylebone in 1921, the station closing the following year.

House to House Electric Light Supply Co Ltd

See Brompton & Kensington undertaking.

Ilford UDC (later Municipal Borough Council)

Obtained powers to supply electricity in 1898, and began supply from station in Ley Street in April 1901 (scheme cost £64,867). By 1915 distribution took place on 3-wire dc basis at 230V (by implication 460V was also available) and 500V for tramways; total plant capacity was 3.6MW. By 1935 a 3-phase ac supply was available in certain areas at 230/400V but overall generating capacity was reduced to 3MW. The undertaking opened offices and showrooms in High Street in 1931.

In 1920 - 1924 agreements were made with West Ham and East Ham Undertakings, for West Ham to provide bulk supplies to its partner undertakings, the Electricity Commissioners having stopped authorizing further extensions to Ilford generating plant. After the opening of the County of London Electric Supply Company's Barking Power Station, supplementary bulk supply was taken from there from 1927. In 1914 Showrooms were provided at 221 High Road, Ilford. In 1939 the Central Showrooms and Offices were at 320-326 High Road and Branch Showrooms were provided at 525 Green Lane, Goodmayes and High Street, Barkingside.

Islington Vestry (later Metropolitan Borough Council)

The Vestry of St Mary Islington's ELO was granted in 1893, though Acts were subsequently obtained in 1903 and 1906. The power station was at 50 Eden Grove and by 1915 had a capacity of 9.6MW, distributing at 100/200V ac (on 2-wire system) or 400V ac for power on 3-wire system; transformer substations were provided. By 1935 total station capacity was 28.5MW but means of distribution unchanged.

By an agreement of 5th December 1930 with the London & Home Counties Joint Electricity Authority it was agreed the Borough would in future draw its supply from the Authority, which would temporarily meet the costs of generation, the Borough purchasing the electricity therefrom.

The LMA records state that in October 1936 the Electricity Department's Showroom and Offices were opened at 341/343 Holloway Road. At this time the Borough's aim was to develop the Undertaking 'by making uses of electricity familiar to all classes of community and providing a comprehensive service of installation and maintenance which will place the many types of domestic electrical appliances within the reach of every ratepayer'. Major post-war activities included the supply and fitting up with electrical appliances of the new housing estate. In 1947 there were 70 staff.

Kensington & Knightsbridge Electric Lighting Co Ltd.

Registered on 29th March 1888. It was formed to take over Kensington Court concern. Initial system 100V 2-wire, later increased to 200 V, but in 1903 system converted to 3-wire dc system 200/400 V. It soon established a second station at Cheval Place, in 1890. Both these stations had Willans engines, Crompton dynamos and Howell batteries, but these were soon upgraded and by 1892 these two stations had aggregate capacity of 645 kW. From 1900 a new generating station opened at Wood Lane (shared with Notting Hill Electric Light Co) supplying 3-phase 5000 V ac at 45 cycles to substations (voltage increased to 6600V in 1937). Initial plant comprised alternators of 330, 550 and 750 kW (1.6 MW total). A 1 MW Parsons alternator was added in 1903, with further 1.6 MW plant added in 1906. Frequency then

increased to 50 cycles. Reciprocating plant eventually superseded entirely by turbo alternators and by 1928 (when the station was closed) capacity was 13.7 MW. The HT supply was taken to MG sets at the Albert Vaults and Kensington Court for conversion to dc distribution voltage. Not clear, but Cheval Place may have continued generation until 1923 when bulk supply at 6600 V ac taken there from Grove Road (Central Electric Supply Co), whence it was distributed at 5000 V ac to Albert Vaults and Kensington Court. Some high usage consumers (like the Kensington Museums) received a high voltage ac supply from 1922, for conversion themselves. Gradual conversion of distribution voltage from dc to ac began 1929.

Substations (2):
Kensington Court (High Street) W (9 MG sets)
Albert Vaults (9MG sets) Prince Consort Road (there is suggestion it was under Albert Memorial, but this is unlikely).

Lewisham and District Electric Supply Co Ltd

The Company was absorbed by the Blackheath and Greenwich Electric Light Company by virtue of their 1903 Act. See South Metropolitan Electric Light and Power Company.

Leyton

Leyton obtained its ELO in 1894 and commenced a supply from its station at Cathall Road only two years later on 8th September 1896. By 1915 it had plant capacity of 3.94MW and was distributing on 3-wire system at 150V dc (300V at station). Interconnection arrangements authorized by 1906 Act with Hackney BC, and Metropolitan Boroughs of Bethnal Green, Islington, Poplar, Shoreditch, West Ham CB, and Leyton and Walthamstow UDCs.

In 1906 electricity was supplied to the Leyton Corporation tramways. The 'key-note' policy of the Electricity Department was 'Service to the Customer'. In 1908 a showroom was provided in Church Lane, Leytonstone and Lea Bridge Road, Leyton. In 1926 Rental Wiring was introduced to bring the benefits of electricity closer to all consumers.

From 1920 the undertaking received a bulk supply from Walthamstow UDC and later from County of London (probably when Barking opened). In 1927 the Central Generating Station at Cathall Road, Leytonstone was closed. In 1934 new showrooms were opened at Electric Corner, 819 High Road, Leytonstone, in addition to smaller showrooms at 280 High Road, Leyton and 368 Lea Bridge Road, Leyton. In 1940 a works Home Guard Unit was formed for the defence of the Electricity Undertaking from enemy action. In 1946 the Electricity Offices were at Cathall Road. The Undertaking saw major growth between 1896 and 1946, with an increase from 110 to 29,137 consumers. By 1935 capacity of the main intake at Cathall Road was 9.5MW comprising transformers and a number of rotary converters. At that time there were transformer substations at:

- Waterloo Road;
- Leyton Green;
- Forest;
- Church Lane;
- Sheridan Road;
- Whipps Cross Hospital;
- Dawlish Road;

London Electric Supply Corpn

The Company was registered on 26th August 1887 and obtained its first ELOs 1889, 1890 and 1897, with statutory powers under its 1906 Act. The company was formed initially to take over the undertaking of the Grosvenor Gallery (in New Bond Street) from Sir Coutts Lindsay &

Co; this began generation in 1883, though it was rebuilt in 1885 with boilers in nearby building. Sebastian de Ferranti was involved in the new company and decided that the most efficient way of developing a supply to London was to build a huge new power station at Deptford, and convey current via high voltage cables, the Deptford station (after some setbacks) coming into full service in 1890[37], much of the load being conveyed to Bond Street for low voltage distribution. The old boiler house off Blomfield Place remains in use as a substation today. The company obtained provisional orders for distribution in Bermondsey and parts of Westminster and several other parts of London, not necessarily exclusively. A few areas (for example in Marylebone) were given up when the company failed to get Orders.

In 1915 the generation capacity totalled 36MW (with another 10MW on way) and distribution was ac at 85Hz 210/105V with some areas supplied dc at 460/230V with some power distributed at 25Hz 3-phase. The company also supplied the LBSCR's South London Line electric service.

Distributing substations were located:

- Red Lion Yard SW (now Cockspur Court, SW1A, and sometimes referred to as Trafalgar substation);
- Blomfield Place W (original substation);
- Blackfriars Road SE (original substation);
- Belgrave Mansions SW;
- 7 Ewer Street, SE (LT dc substation);
- Deptford, SE (LT dc substation), (original substation).

There were also offices at 25A Cockspur Street, the building apparently overflying Cockspur Court, the location of a LESCo substation.

In 1935 the Company was engaged in distribution only as under the terms of the London Electricity (No 2) Act 1925 responsibility for generation and HT distribution was transferred to the London Power Company (qv), the power station transferring in 1928. By that time ac distribution at 50Hz was widely available at 230/400V single or 3-phase, with some lighting at 220V. Dc was available at either 250/500V or 230/460V.

In 1904 the Corporation installed two 2,000 kW alternators for London County Council's tramways and also supplied the South Eastern and London, Brighton and South Coast railway companies. It also supplied London County Council offices and Saint Thomas's Hospital. The taking of power from the London Power Company lowered customer tariffs helping the Corporation retail domestic electricity supplies and increasingly electrical appliances. Electricity Showrooms were opened at Deptford and New Cross where appliances could be purchased or hired. The Corporation sold its West End supply network to Central London Electricity Company.

The Corporation had its own Sports Ground for its Sports and Social Clubs plus Home Guard.

Head Offices:

- 1887 3 Adelphi Terrace, Westminster
- 1894 Trafalgar Sub-station, 25A Cockspur Street. The Engineer's Offices, Stores and Test Room remained at Adelphi Wharf until 1932
- 1932 Lesco House, Stamford Street, Westminster

London Power Company:

The undertaking was formed on 21st January 1920 as London Electricity Joint Committee. It was renamed in 1925 as result of London Electricity (No 2) Act of that year. Following the

[37] Though it was not completed until 1891

Act, it purchased Willesden and Amberley Road power stations and transmission lines from M.E.S.Co. It subsequently acquired power stations and lines of the following:

Brompton & Kensington E.S. Co
Charing Cross E.S. Co
Chelsea E.S. Co
London E.S. Corpn
Metropolitan E.S. Co
Kensington & Knightsbridge E.S. Co
Notting Hill E.L. Co
St James's & Pall Mall E.L. Co
Westminster E.S. Corpn.
Central Electric Supply Co (owners of Grove Road jointly WESCo and SJ&PMELCo)

The companies continued to provide distribute supplies locally within their areas taking current in bulk from the London Power Company. Following takeover of electricity production it soon embarked on the construction of a new power station at Battersea (initial 228MW), and modernization of Bow, Deptford East, Deptford West, Grove Road and Willesden (Acton Lane), the remaining inherited company stations closing. In 1935 total capacity of LPCo was 810.65MW available to the grid.

Metropolitan Electric Supply Co.

Registered 26th November 1887 as South Metropolitan Electric Supply Company Ltd, renamed 28th July 1888. Purchased the Whitehall Electric Supply Co in July 1888 (and began a supply October 1888). It further purchased a power station in Rathbone Place from Messrs Pritchett in February 1889, and while a substation remained on the site, generation cannot have continued for more than a decade.

The company was granted distribution rights by the Board of Trade in 1889 for the districts of Marylebone, Bloomsbury, Lincolns Inn and Covent Garden, and established a new power station at Sardinia Street (Lincolns Inn)[38] which was commissioned 1st September 1889 with an initial capacity of 1.25MW. The Marylebone area was already partially supplied by the London Electric Supply Corporation and the Metropolitan undertaking were able to take over their overhead mains. Another new station was intended to feed the northern area and opened in January 1890; known as Manchester Square, it was actually situated in what is now Blandford Street (then South Street) on corner of Aybrook Street, near Marylebone High Street. Distribution was at 1000V ac and it was linked to Sardinia Street and Rathbone Place. After complaints about vibration the original generating sets at Manchester Square began to be replaced from 1894 by Parsons turbo-alternators (understood to be ten in number, each 350kW). The Paddington district required a further station, built at St Peter's Wharf, Amberley Road, by the canal, and opened on 3 March 1893. Five 120kW alternators were provided initially, generation again being at 1000V. This was the last of the company's early station to close, in 1926, after which time a bulk supply came entirely from the London Power Company.

By 1897 it had become obvious that more efficient generation was necessary as their five stations were already at capacity. Eight acres were acquired at Acton Lane (Willesden) on the banks of the Grand Union canal and with good rail access. The new station was commissioned in 1899 with HT current transmitted to central London at 10kV 2-phase, 60 cycles. This was a very substantial power station with an initial capacity of 4.5MW. The station developed rapidly between 1901 and 1904, soon reaching installed capacity of 13.5MW, though still using reciprocating machinery. In 1904 a 3MW turbo alternator entered service, and in 1913-4 two

[38] This is not the street of the same name today, the original having been obliterated by the construction of Kingsway 1902-1906

further turbo-alternators came into use, each of 10MW capacity. The station was converted soon after to transmit at 3 phase 50 cycles. The station was transferred to the London Power Company in 1927, after which it was completely modernized and the old reciprocating equipment was entirely replaced.

In 1915 the supply area was divided into:

- Paddington District (single phase ac);
- Eastern District, dc from MG substations 3-wire 100-200V;
- Acton District, dc 230-460V;
- Hanwell/Southall District 240V ac and 415V 3phase.
- Bulk supplies were sold to Uxbridge & District for a supply to Greenford, and Brentford Electricity Supply Co for Brentford.

In 1915 generation took place at Acton Lane (Willesden) and Amberley Road (Paddington) and supplied to nine substations; total capacity 23.25 MW. The London Power Company acquired the Willesden power station on 1st January 1927 (and Amberley Road probably on same date). In 1921 a bulk supply was given to Hampstead Borough Council, allowing them to cease generating the following year.

After some preliminary work, the St Marylebone Borough Council decided to operate its own electricity supply within the Borough and acquired the distribution system from the Metropolitan undertaking with effect from 31st December 1901. This appears to have included the out of date Manchester Square station which was soon superseded by new plant near the Edgware Road, the old site becoming a substation (see reference to St Marylebone Borough Council).

Substations (NB only 8 of 9 listed, missing one probably Rathbone Place):

- Fisher Street (Southampton Row)WC
- Tower Street (Cambridge Circus) WC
- Norfolk Crescent Mews (Edgware Road) W
- Brook Mews, Lancaster Gate, W
- Moscow Road, Bayswater, W
- Randolph Road, Maida Hill, W
- Southfield Road, Acton W
- Iron Bridge, Southall, Mx

Notting Hill Electric Lighting Co.

Undertaking incorporated 21st February 1888. It operated a generating station at Bulmer Place from 1891, distributing low tension dc via its 3-wire network. Operating area was the Notting Hill district supplied from power station at Bulmer Place, opened by Sir William Crookes on 1 June 1891. This was not a convenient station and jointly with the Kensington & Knightsbridge Electric Lighting Co Ltd the company embarked on a new station at Wood Lane, opened 1900 (see under K&KEL Co).

Poplar Metropolitan Borough Council.

Poplar Metropolitan Borough Council operated under an Electric Lighting Order of 1893 and commenced supply in 1900. Generating stations were at Glaucus Street and Watts Grove, Bromley by Bow. Offices and showrooms were latterly at 208-212 East India Dock Road, Poplar, with additional showrooms at Electric House, Bow Road.

St James' and Pall Mall Electric Light Co Ltd.

Registered on 2nd March 1888, with little initial activity. ELO granted 1890 (St James's ELO). Obtained Act in 1899 to construct power station in Carnaby Street. At almost the same time agreement made with Westminster Electric Supply Corporation to create a Central Electric Supply company to build a large station at Grove Road, to supply both companies. Supply began 4th April 1899 and further Act of 1908 allowed company to make further agreements with other London companies. Under the London Electricity (No 2) Act 1925 the London Power Company purchased all the generating plant and main transmission lines, leaving this company a distributor only.

St Marylebone Borough Council

The Council obtained an Electric Lighting Order in 1901 (and Act in 1904) and on 31st December 1901 purchased part of the undertaking in Marylebone operated by the Metropolitan Electric Supply Company Ltd, including Manchester Square power station. The council soon resolved to build a larger and more modern station at a site in Aberdeen Place, just off Edgware Road at the edge of the Borough on the Grand Union Canal[39]. Research suggests that the new power station came into service in 1905 at the same time as they took over direct responsibility for distribution, but these facts remain to be checked. The Council's electricity department was at first run from the town hall, but in 1939 moved into purpose-built offices in Aybrook Street (the frontage of this recently reconstructed building has survived, including the stone coat of arms). For many years the rear of this site continued as a substation, initially distributing from feeders from Edgware Road.

Westminster Electric Supply Corporation.

Registered on 30th June 1888. Act of 1889 granted powers to Central Electric Supply Co to build generating station in St Johns Wood for supplying this and St James' & Pall Mall undertaking. Under powers of London Electric Supply Act 1908 also supplies part of that co. Generating stations at Davies Street, Eccleston Place, Horseferry Road, Duke Street Gardens. Capacity 10.383 MW, plus 10.7 MW from MGs fed from Central Electric Supply Co. Supply on 3-wire basis 200/400V (DC). Under the London Electricity (No 2) Act 1925 the London Power Company purchased all the generating plant and main transmission lines, leaving this company a distributor only.

Whitehall Electric Supply Company Ltd.

Registered October 1887. A company established to provide electric lighting for Whitehall Court SW and buildings in the vicinity, including a number of hotels. Power station built underground in front of the Court, and opened 5th October 1888. Dc distribution system at 110V, supplemented by batteries. Dynamos originally Crompton machines, but soon replaced by Siemens'. In 1897 two generating sets were moved to Sardinia Street (after the fire there) and replaced by two smaller ones; the battery was removed at same time. The company was sold to the Metropolitan Electric Supply Company in July 1888, before opening.

[39] Unfortunately this station has also been known by several names, including Richmond Street and Orchardson Street.

Some Notes about Post Nationalization Arrangements

Eastern Electricity

DNO Name : EPN Distibution
Owner : EDF Energy Networks
Ultimate Parent : EdF
History
Pre-privatisation : Eastern Electricity
Mar 31 1990 : vested as Eastern Electricity plc
Sep 18 1995 : Hanson plc takeover
Feb 24 1997 : unbundled from Hanson and floated
Sep 1 1998 : taken over by TXU Europe
Nov 9 1999 : renamed TXU Europe
Jan 18 2002 : sold to LE Group

London Electricity

DNO Name : London Power Networks
Owner : EDF Energy Networks
Ultimate Parent : EdF
History
Pre-privatisation : London Electricity Board
Mar 31 1990 : vested as London Electricity plc
Dec 11 1990 : floated on stock market
Feb 7 1997 : sold to Entergy Power UK plc
Dec 31 1998 : sold to EdF International
Jan 2001 : structure changed to LE Group

M.A.C. Horne
Last updated 1 August 2008

---

[1] RCHS Journal 189 (July 2004) p583
[2] Parsons P115
[3] Garcke 1914, Parsons.
[4] Garcke 1914 and Hackney Archives index.
[5] Holborn-Strand Improvements, Humphries, Proc.I.C.E. 1910-11
[6] http://www.glias.org.uk/news/187news.html
[7] See also: http://www.readysnacks.mcmail.com/power.htm
[8] Per Kelly's directory (1914) of Essex, Hertfordshire and Middlesex. See also LMA notes.
[9] http://www.malcolmread.co.uk/conscise/body/4a.pdf (page 13)
[10] http://www.malcolmread.co.uk/conscise/body/4a.pdf (page 13)
[11] Garke 1935-6
[12] http://www.lalamy.demon.co.uk/timeline.htm
[13] http://www.finchleysociety.org.uk/Newsletters/1990s/1990/Suppl%208-90.pdf
[14] See http://www.british-history.ac.uk/report.aspx?compid=22507
[15] Information J.Liffen and CEGB Annual Report 1963-4
[16] Garke 1935-6
[17] Per Garcke, but note Barnes & Mortlake History Soc Newsletter September 2004.

[18] http://www.british-history.ac.uk/report.asp?compid=42729#s6
[19] From: 'Local government: Public services', A History of the County of Middlesex: Volume 12: Chelsea (2004), pp. 217-33. URL: http://www.british-history.ac.uk/report.asp?compid=28720.

Acton - In 1866 the local board sought tenders for the removal of house refuse (fn. 9) and in 1893 scavenging was still done by contractors. (fn. 10) In 1902 the U.D.C. bought a site in Southfield Road for a dust destructor and electricity plant, but it was only after rubbish piled near the cemetery had become offensive that a destructor was built, on 3½ a. near the Friars in Wales Farm Road, and opened in 1909. (fn. 11) By 1928 all rubbish was burnt in Wales Farm Road. (fn. 12) In 1955 house refuse was disposed of outside the borough. (fn. 13)

From: 'Acton: Public services', A History of the County of Middlesex: Volume 7: Acton, Chiswick, Ealing and Brentford, West Twyford, Willesden (1982), pp. 32-35. URL: https://www.british-history.ac.uk/report.aspx?compid=22551. Date accessed: 26 July 2008.