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Power Generation Transmission & Distribution 2025

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Pakistan: Law and Practice

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PAKISTAN

Law and Practice

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1. Structure and Ownership of the Power Industry

1.1 Law Governing the Structure and Ownership of the Power Industry Electricity Sector Regulatory Regime

The principal law regulating the power industry of Pakistan is the Regulation of Generation, Transmission and Distribution of Electric Power Act 1997, as amended from time to time (the “NEPRA Act”). The National Electric Power Regulatory Authority (NEPRA) was established pursuant to the NEPRA Act as an independent regulator of the power sector. On 2 May 2018, the Regulation of Generation, Transmission and Distribution of Electric Power Act (Amendment) Act 2018 (the “2018 Amendment Act”) was enacted. The 2018 Amendment Act significantly amended the NEPRA Act and reformed the electricity market by introducing provisions to foster greater competition.

NEPRA’s main functions include the issuance of licences for undertaking specified regulated activities (ie, generation, transmission, distribution, supply business, and the determination of tariffs for the sale of electric power).

Licensees include:

- companies that transmit electric power, including the national grid company (National Transmission and Despatch Company Limited (NTDC)) and the provincial grid companies (PGCs);
- companies that distribute electric power to end consumers (“suppliers of last resort”/distribution companies);
- the company responsible for administering system operation and dispatch (ie, Independent System and Market Operator of Pakistan (Guarantee) Limited (ISMO) which has recent-

ly been separated from NTDC as a separate company);

- the company responsible for the organisation and administration of trade in electricity and payment settlements between generators and consumers (currently, Central Power Purchasing Agency (Guarantee) Limited (CPPAG))*;
- electric power suppliers that act as supply-aggregators for electric power generated by generation companies and suppliers of last resort;
- electric power traders that act as demand-aggregators for consumers and other licensees; and
- companies that generate electric power for sale to other licensees and consumers (generation companies).

Through the 2018 Amendment Act, Section 14 (B) was incorporated in the NEPRA Act to, inter alia, regulate the issuance of generation licences under NEPRA’s licensing regime, subject to subsection (5) of Section 14 (B) thereof. Under this subsection, the federal government – in consultation with NEPRA – was entitled to plan the gradual phase-out of licences for different types of generation companies. This plan for phasing out licences had to be completed within five years following the enactment of the 2018 Amendment Act (ie, by 30 April 2023). Now that the planned period for the gradual cessation of generation licences has ended, any generation company can set up and operate a generation facility without needing a “generation licence”. Notwithstanding the foregoing, a company that intends to set up a generation facility must ensure compliance with NEPRA-issued technical standards and also obtain NEPRA’s “concurrence”. While NEPRA has not specified the terms and conditions for concurrence, generation companies must submit the documentation previously required under the former generation licensing

regime (eg, detailed feasibility, economic, and technical studies) until NEPRA issues the technical standards mandated by the NEPRA Act. As a result, the licensing regime continues in practice despite the NEPRA Act's requirement for deregulation of the generation business. With regard to power companies that were issued generation licences prior to 30 April 2023, NEPRA has deemed the same to continue being regulated under the previous licensing regime.

NEPRA laws

Pursuant to the NEPRA Act, NEPRA has enacted and approved the following key rules, regulations and guidelines, which are binding upon all licensees (the “NEPRA Laws”):

- NEPRA Licensing (Generation) Rules 2000 (the “Generation Licensing Rules”);
- NEPRA Tariff Standards and Procedure Rules 1998 (the “Tariff Rules”);
- NEPRA Licensing (Distribution) Rules 1999 (the “Distribution Licensing Rules”);
- NEPRA Fines Regulations 2021 (the “Fine Regulations”);
- NEPRA Licensing Application, Modification, Extension and Cancellation Procedure Regulations 2021 (the “AMEC Regulations”);
- NEPRA Electric Power Procurement Regulations 2022 (the “EPP Regulations”);
- NEPRA Electric Power Supplier Regulations 2022 (the “Supply Regulations”);
- NEPRA Electric Power Trader Regulations 2022 (the “Trader Regulations”);
- NEPRA Alternative and Renewable Energy Distributed Generation and Net Metering Regulations 2015 (the “Net Metering Regulations”);
- NEPRA Review Procedure Regulations 2009 (the “Review Procedure Regulations”);
- NEPRA Open Access Interconnection and Wheeling of Electric Power Regulations 2022 (the “Open Access Regulations”);
- NEPRA (System Operator) Regulations 2022 (the “SO Regulations”);
- NEPRA Registration Regulations 2022 (the “Registration Regulations”);
- NEPRA Guidelines for Determination of Consumer End Tariff 2015 (the “Consumer End Tariff Guidelines”);
- NEPRA Guidelines for the Selection of Engineering, Procurement and Construction Contractor by Independent Power Producers 2017 (the “EPC Selection Guidelines”);
- NEPRA Guidelines for the Selection of Operation and Maintenance Contractors by Generation Companies 2021 (the “Selection of O&M Guidelines”);
- NEPRA Benchmarks for Tariff Determination Guidelines 2018 (the “Tariff Benchmark Guidelines”);
- Guidelines for Procurement of Coal on Spot Basis (the “Coal Procurement Guidelines”);
- Guidelines to Lay Down the Methodology and Process for Determination of Revenue Requirement and Use of System Charges (UoSC) for Transmission Licensee (the “UoSC Transmission Guidelines”);
- the Market Commercial Code;
- the NEPRA Power Safety Code;
- the Grid Code 2023; and
- the Distribution Code.

The foregoing list is not exhaustive and is in no particular order.

Provincial regulators

The province of Sindh has established a regulatory body similar to NEPRA to regulate electric power services in Sindh named the Sindh Electric Power Regulatory Authority (SEPRA). The

following electric power services, when carried out in Sindh, require a licence from SEPRA:

- electric power suppliers;
- generation companies;
- distribution companies; and
- microgrid owners.

SEPRA is also empowered to determine the tariffs for these electric power services. It is expected that other provinces may also establish similar regulatory bodies. Notwithstanding the foregoing, a NEPRA licensee will also be considered a SEPRA licensee, where applicable.

Council of Common Interests

The Council of Common Interests (CCI) is the highest policy-making body of the federation. The CCI was established under Article 153 of the Constitution of Pakistan and consists of:

- the Prime Minister, who acts as the chairman of the CCI;
- the chief ministers of each province; and
- three members from the federal government (to be nominated by the Prime Minister).

The functions of the CCI include formulating and regulating policies in relation to electricity matters and exercising supervision and control over related institutions.

Special Investment Facilitation Council and the National Task Force

The Special Investment Facilitation Council (SIFC) was established through the Board of Investment (Amendment) Act, 2023, to encourage foreign investment in Pakistan in key sectors, including energy. Additionally, the government of Pakistan (GOP) has created a National Task Force on energy to enhance power sector efficiency. This task force has renegotiated tar-

iffs with several independent power producers (IPPs) to lower consumer-end tariffs and tackle high electricity prices.

Facilitative regime

In order to facilitate power projects being developed pursuant to the government's power policy, the federal government has established the Private Power and Infrastructure Board (PPIB). Prior to the promulgation of the Private Power and Infrastructure Board (Amendment) Act 2023 (the "PPIB Amendment"), the PPIB's role was limited to facilitating non-renewable power projects and hydropower projects with capacity greater than 50 MW. Renewable projects were facilitated through a separate statutory body known as the Alternative Energy Development Board (AEDB). The PPIB Amendment merged the AEDB into the PPIB, including all of its roles and responsibilities.

At the provincial level, similar bodies/departments for the development of power projects pursuant to the provincial governments power policies have been set up in the following provinces:

- Punjab – Punjab Power Development Board;
- Sindh – Government of Sindh Energy Department and the Sindh Renewable Energy Company (Private) Limited;
- Khyber Pakhtunkhwa – Pakhtunkhwa Energy Development Organisation; and
- Balochistan – Government of Balochistan Energy Department.

In the case of the state of Azad Jammu and Kashmir (AJK), the AJK Power Development Organisation (AJK-PDO) has been established to facilitate power projects in the AJK.

Ownership of Licensees

Generation companies

There are both state-owned and privately owned generation companies operating in Pakistan. Owing to recent government policies, the number of grid-based independent power producers (IPPs) has grown greatly during the past two decades.

In the local market, the term “IPP” refers almost exclusively to privately owned generation companies developed pursuant to a government-issued power policy that sell their power exclusively to the government’s purchasing entity (ie, CPPAG).

Transmission companies

The primary transmission licensee is the state-owned NTDC, which owns and manages the national grid. The provinces of Pakistan have recently begun to set up their own transmission companies (see **1.2 Principal State-Owned or Investor-Owned Entities** (Transmission Entities)).

There are also a few privately owned transmission companies holding special purpose licences – for example, Fatima Transmission Company Limited and Pak Matiari-Lahore Transmission Company (Private) Limited.

Distribution and supply companies

Distribution companies are predominantly owned by the government. Exceptions include K-Electric Limited (a century-old public utility company that was privatised in 2005) and a few companies that were set up as private distribution businesses. The government plans to privatise state-owned distribution companies.

* The role of and licence for market operator have been transferred to ISMO. CPPAG continues to

purchase electricity on behalf of XW-DISCOS from IPPs. Since CPPAG performs the function of purchasing power, it could not act as a neutral market operator. Consequently, ISMO was established, and the market operator licence was transferred to it, while CPPAG retains its role as the power purchaser. CPPAG has applied for registration as a Special Purpose Agent under section 25A of the NEPRA Act, which is currently being processed by NEPRA. There is some uncertainty regarding this registration and the surrounding legal framework.

1.2 Principal State-Owned or Investor-Owned Entities

Generation Entities

State-owned

The Pakistan Water and Power Development Authority (WAPDA), a statutory body, owns and operates a number of electric power projects for the government – the majority of which are hydropower-based. WAPDA also continues to develop further hydropower projects, including the Diamer Basha hydropower project and the Khyal Khwar hydropower project.

Previously, WAPDA was the sole electric power utility of Pakistan. In the 1990s and 2000s, WAPDA was restructured to spin off:

- its thermal power projects into four generation companies (including the Central Power Generation Company Limited (CPGCL) and the Northern Power Generation Company Limited (NPGCL));
- its transmission business to the NTDC; and
- its distribution business into nine distribution companies (DISCOs).

Recently, the government has set up four large re-gasified liquefied natural gas (RLNG)-based power generation projects through three govern-

ment-owned companies – namely, the National Power Parks Management Company (Private) Limited (which set up the Balloki and Haveli Bahadur Shah projects), Quaid-e-Azam Thermal Power (Private) Limited, and Punjab Thermal Power (Private) Limited. Additionally, a number of nuclear power plants are owned and operated by the Pakistan Atomic Energy Commission.

Private

The private sector has established a number of fossil-fuel power projects (residual furnace oil (RFO), high speed diesel (HSD), pipeline quality gas, reservoir-based gas, RLNG, imported coal, indigenous coal and cogeneration) and renewable energy projects (wind, solar and biomass/bagasse) pursuant to various government power policies. Some of the largest foreign investors in the private power sector include China Three Gorges, Power China, Hydrochina, China Gezhouba, Engie (French), K-Water (Korean), whereas the largest local investors include Engro, Hubco and Yunus Brothers.

K-Electric Limited also owns and maintains a portfolio of power projects, including the Bin Qasim Power Complex, the Korangi Power Station, the Site Gas Power Station and the Korangi Town Power Station.

Additionally, a number of captive private power projects have also been set up by the owners of factories and other commercial establishments to meet their electric power requirements.

Transmission Entities

State-owned

The national grid of Pakistan is owned and managed by the NTDC, a state-owned company. The NTDC is currently licensed as the national grid company and only one licence of this nature is granted at a time.

The NPCC, the previous system operator, which was responsible for controlling the supply of electric power generated by all power producers connected to the national grid, is a part of the NTDC. This department has been spun off as a separate company by the name of ISMO which is now licensed as a system operator.

The PGCs are owned by the respective provincial governments and include:

- Sindh Transmission and Dispatch Company (Private) Limited;
- Khyber Pakhtunkhwa Transmission and Grid System Company (Private) Limited; and
- The Punjab Grid Company Limited.

Private

Some privately owned transmission companies are:

- K-Electric Limited – although primarily a distribution company, it also has the right to provide transmission services within its service territory, which is excluded from NTDC's service territory (see **4.5 Monopoly Rights to Provide Transmission Services**);
- Pak Matiari-Lahore Transmission Company (Private) Limited; and
- Fatima Transmission Company Limited.

These companies have special purpose transmission licences that were issued pursuant to Section 19 of the NEPRA Act. These licences only permit the licensee to engage in the construction, ownership, maintenance and operation of specified transmission facilities.

Distribution Entities

State-owned

The majority of DISCOs in Pakistan are state-owned entities with the right to carry out dis-

tribution activities in their respective service territories. As these state-owned DISCOs were formed after the restructuring of WAPDA, they are referred to as “ex-WAPDA DISCOs”. They include the following companies:

- Faisalabad Electric Supply Company;
- Gujranwala Electric Power Company;
- Hyderabad Electric Supply Company;
- Islamabad Electric Supply Company;
- Lahore Electric Supply Company;
- Multan Electric Power Company;
- Peshawar Electric Supply Company;
- Quetta Electric Supply Company;
- Sukkur Electric Power Company; and
- Tribal Areas Electricity Supply Company.

Another state-owned distribution company, Hazara Electric Supply Company Limited (HAZECO), has applied for a licence. HAZECO will operate within the territories of Haripur and Abbottabad. This new entity was created by splitting Peshawar Electric Supply Company and reallocating its territory.

Private

The following is a non-exhaustive list of privately owned distribution companies:

- K-Electric Limited, formerly a state-owned DISCO that was privatised in 2005, which is responsible for distribution activities in the city of Karachi and its surrounding areas;
- Lasbela Industrial Estates Development Authority (LIEDA), which obtained a distribution licence for the distribution of electric power to the industrial estates within LIEDA’s ambit;
- DHA Electric Supply Company, which was formed in order to distribute electric power to housing developed by the Defence Housing Authority; and

- Bahria Town (Private) Limited, which was formed in order to distribute electric power to housing developed by Bahria – their licence was subsequently cancelled.

1.3 Foreign Investment Review Process

The government encourages foreign investment by extending various protections and fiscal and financial incentives to investors. Some of these protections are provided in the law, whereas many are promised contractually via concession agreements signed between the investor(s) and the government. In Pakistan’s power sector, these agreements are referred to as “implementation agreements”.

These protections and incentives include:

- exemptions from tax and applicable duties and concessionary rates;
- repatriation of investment and proceeds;
- change-in-law protection;
- change-in-tax protection;
- lapse-of-consent protection;
- force majeure protection;
- dispute resolution before international arbitration institutions;
- government support during the consent process, including assistance in acquiring state land for project site development purposes;
- direct agreements with lenders;
- compensation upon termination; and
- sovereign guarantee for the state-owned power purchaser’s payment obligations and compliance with obligations under the concession documents, etc.

If any investment (whether foreign or local) is to be made in a project being developed pursuant to a government policy – and thus is eligible for receipt of the above-mentioned sovereign guarantee – then the relevant facilitative agency

of the government will review the financial and technical strength of the investor before approving their investment in the project.

The aforementioned approval process involved the selection of a potential investor through various modes such as the international competitive bidding process, the PPP process or the solicitation of projects. Once a sponsor for a project is approved, they are issued a letter of intent against the submission of a bank guarantee. The sponsor is required to prepare a feasibility study and have it approved by the government, have its tariff determined by NEPRA and fulfil any other condition that may be stipulated in the letter of intent. After the conditions in the letter of intent are fulfilled, a letter of support is issued by the government. Pursuant to the letter of support, the sponsor is required to achieve financial closing during the term of the letter of support. After fulfilling the requirements of the letter of support, the project company will be eligible to enter into the concession agreements with the government. Following the notification of the EPP Regulations, it is now required for a project to be included in the IGCEP as well as the approved power acquisition programme of a supplier of last resort (SOLR). This stipulation has prevented many projects that have been issued a letter of intent from progressing further.

Typically, the permitted debt-to-equity ratio is from 80:20 to 70:30. Any equity in excess of the permitted ratio will be treated as debt by NEPRA when determining the tariff.

Further, when determining the tariff, NEPRA will take into account:

- return on equity during construction;
- interest during construction; and
- return on equity.

Repatriation of foreign investment is subject to the exemption/approval of the State Bank of Pakistan (SBP), which grants the approval in accordance with the prevailing foreign exchange policy.

1.4 Sale of Power Industry Assets

NEPRA imposes restrictions and conditions on various transactions by licensees, including amalgamations and mergers by licensees and the sale of power industry assets by licensees.

The Generation and Distribution Licensing Rules impose a number of restrictions and conditions on the generation and distribution licences issued by NEPRA, including restrictions in respect of:

- the transfer of the licensee's shares and other voting securities;
- the disposal of the licensed business;
- the issuance of guarantees/surety bonds; and
- the acquisition of shares in any entity, subject to exceptions.

Transactions that involve the foregoing require the prior approval of NEPRA, which will take into account the promotion of competition in the electric power industry as a whole and any change in the control or management of the licensee likely to result from the approval (if granted). Additionally, pre-merger approval is also required from the Competition Commission of Pakistan (CCP), subject to the transaction meeting the thresholds imposed by the applicable provisions of competition law. Further, the implementation agreement entered into between IPPs and the government provides for a contractual "lock-in" period, during which the shares of the main sponsor of the project company cannot be transferred without the approval of the government.

There are a number of precedents in which the relevant government agency has approved the transfer of project company ownership/control, including:

- Rousch (Pakistan) Power;
- Laraib Energy; and
- Star Hydro Power (Patrind).

Uch Power (Private) Limited and Uch-II Power (Private) Limited are in the process of being acquired by Sapphire Fibres Limited and Mindbridge (Private) Limited.

1.5 Central Planning Authorities

In addition to being the national grid company, the NTDC is also responsible for the development of power generation and transmission in Pakistan. In this role, the NTDC has prepared the Indicative Generation Capacity Expansion Plan 2021–30 (IGCEP), which sets out the generation expansion plan for the decade. Based upon the IGCEP, the NTDC has also formulated a Transmission System Expansion Plan, which is awaiting approval.

As previously mentioned, the ISMO is responsible for the control and dispatch of electric power to meet the demand of the national grid (see **1.2 Principal State-Owned or Investor-Owned Entities**).

In addition to the foregoing, the investment and expansion plans of distribution licensees and transmission licensees – and their performance and safety in light thereof – are reviewed and approved by NEPRA annually, along with the revenue requirements.

Aside from the ISMO, the following stakeholders also play a role in planning:

- the CCI and the Cabinet Committee on Energy;
- policy-making institutions, including the federal and provincial cabinets;
- NEPRA;
- the Ministry of Planning; and
- the Ministry of Energy (power and petroleum divisions).

The foregoing list is not exhaustive.

1.6 Recent Changes in Law or Regulation

In 2018, the NEPRA Act was amended to, inter alia, pave the way for a deregulated, competitive market, referred to as the Competitive Trading Bilateral Contract Market (CTBCM) model.

In addition to the generation, transmission and distribution licences already provided by the original law, the 2018 Amendment Act introduced new licences for:

- market operators – responsible for the operation of the competitive market to be established under the CTBCM model;
- the system operator – responsible for the dispatch of the electric power generators connected to the national grid system;
- PGCs – responsible for the provision of transmission services within each province;
- electric power traders – act as demand-aggregators in the CTBCM model by contracting with multiple distribution licensees and consumers to procure power on their collective behalf; and
- electric power suppliers – depending upon the nature of the licence granted to electric power suppliers, they will be entitled to make sales of electricity directly to a consumer (for example, a competitive electric supplier will be able to make sales of power (ie, “supply”)

to a bulk power consumer (typically, large industrial consumers that consume more than 1 MW)).

The 2018 Amendment Act to the NEPRA Act also:

- established the NEPRA appellate tribunal, which functions independently from NEPRA, in order to hear appeals against NEPRA's decisions;
- removed the exclusivity rights for sale of electric power of DISCOs in relation to their respective service territories;
- introduced the national electricity policy for the development of power markets (the "NE Policy"), which is to be prepared by the federal government and approved by the CCI; and
- introduced the national electricity plan (the "NE Plan"), which is to be prepared by the federal government with assistance from NEPRA and in consultation with the provincial governments.

The NEPRA (Amendment) Act 2021 restructured NEPRA's powers relating to calculation of the consumer end tariff and allowed the federal government to add surcharges to the consumer end tariff.

The NEPRA (Electric Power Procurement) Regulations 2022 (the "EPP Regulations") were notified in 2022, which restructured the method of power procurement on behalf of DISCOs, such that the DISCOs are now entitled to purchase power directly from generation companies. These EPP Regulations are a significant step towards realising the CTBCM, to the extent that Pakistan's power sector will no longer be a "single buyer" model but will instead transition to a "single buyer plus" model. The EPP Regulations

also introduced the requirement for generation tariffs to follow the least cost procurement principle, as encapsulated in the IGCEP.

In 2023, sets of rules were approved that established a minimum technical and financial criterion to be met for businesses engaged in providing electric power services such as distribution, supply and transmission. NEPRA has issued the Power Safety Code, 2024, outlining specific operational criteria for licensees to follow to reduce the impact on the public and the environment.

Protection of Existing Exclusivity Rights

Historically, the NEPRA Act has granted exclusivity to DISCOs in their respective service territories. Section 22 (1) of the NEPRA Act granted case-by-case second-tier supply authorisations to generation companies and DISCOs that want to directly supply consumers within the service territories of other DISCOs.

However, Section 22 (1) was subject to a sunset clause that limited its effectiveness for a period of 15 years from the commencement of the NEPRA Act (ie, until the year 2012). In addition to removing the exclusivity right of DISCOs in relation to their respective service territories, the 2018 Amendment Act removed Section 22 (1)'s sunset clause so that NEPRA could continue to issue second-tier supply authorisations.

Notably, as well as granting second-tier supply authorisations to generation companies prior to 2012, NEPRA also continued to grant them from 2012 (ie, when Section 22 (1) was no longer effective) up to 2018 (ie, the revival of Section 22 (1)) and beyond. It is worth mentioning, however, that NEPRA phased out the second-tier supply authorisations following the introduction of the supply licence via the 2018 Amendment Act. The

NEPRA Licensing (Electric Power Supplier) Regulations 2022 require that a year after notification of the same (which was 28 March 2022), all generation companies with a second-tier supply authorisation must apply for a supply licence to sell power to consumers. Therefore, the sale of power to consumers by generation companies that once fell under the second-tier authorisation of the generation licence is now regulated under the supply licence regime.

The Islamabad High Court ruled that DISCOs' existing exclusivity rights could not be retroactively withdrawn. However, the latest licences issued to DISCOs do not include exclusivity provisions.

1.7 Announcements Regarding New Policies

New National Electricity Policy 2021

Pursuant to Section 14 (A) of the NEPRA Act, the federal government is required to prescribe an NE Policy – with the approval of the CCI – that encompasses:

- development of systems based on optimal utilisation of resources such as coal, natural gas, nuclear substances or materials, hydro and renewable sources of energy;
- development of an efficient and liquid power market design;
- integration of national and provincial transmission systems;
- special provisions for ensuring the development of a sustainable renewable energy market with a dedicated and gradually increasing share in the electricity power sector; and
- any other matter pertaining to the development, reform, improvement and sustainability of the power sector.

In 2021, the federal government introduced the National Electricity Policy 2021 (the “2021 NE Policy”). Prior to the 2021 NE Policy, the federal government had formulated the Power Generation Policy 2015 (the “2015 Policy”), which set out specific incentives and protections for investors developing thermal and hydro-based power projects with government support. The 2021 NE Policy, which is broader in scope but less specific about the incentives and protections offered, did not replace the 2015 Policy – rather, the 2021 NE Policy supplements the earlier policy. In the event of any inconsistency between the two policies, however, the NE Policy shall take precedence over the 2015 Policy.

The 2021 NE Policy signals the government's growing focus on the following matters, among others, in respect of the electricity sector:

- enhanced competition;
- greater sustainability and environmental responsibility; and
- privatisation of state-owned enterprises (especially the DISCOs).

The 2021 NE Policy also provides that future procurement of electricity by the NTDC will be in accordance with the IGCEP and its inter-connectivity with the grid will be based on the Transmission System Expansion Plan (TSEP). The IGCEP is a plan prepared by the NTDC, under which it details the proposed acquisition of power from different generation plants based on an optimised tariff as calculated by a financial algorithm specifically developed for this purpose by the NTDC. The TSEP will be developed in order to connect new generation plants to the grid as required by the IGCEP.

According to the 2021 NE Policy, the federal government, in consultation with the provin-

cial governments, will notify a national electricity plan every five years. In pursuance of this requirement, the federal government has notified the National Electricity Plan 2023–27 (“Plan 2023”). Plan 2023 has indicated certain reforms in the power sector, which include:

- issuance of a new generation policy and updates to the existing transmission policy;
- facilitative policies and regulations to be approved for the application of hydrogen and battery storage technology in the power sector;
- the transfer of ownership of federally owned DISCOS to the provinces;
- discontinuation of upfront tariffs for generation and transmission projects; and
- inclusion of cross subsidy in open access charges.

The foregoing is not exhaustive.

New Alternative and Renewable Energy Policy 2019

The Alternative and Renewable Energy Policy 2019 (the “2019 ARE Policy”) places a greater emphasis than the previous renewable energy policy (namely, the Policy for Development of Renewable Energy for Power Generation 2006) on:

- competitiveness, which is ensured through bidding; and
- “new” technologies, which are encouraged through a framework for unsolicited proposals that removes the requirement for competitive bidding (this framework is available for the first two power projects using each new technology).

The 2019 ARE Policy extends to projects that are based on:

- biomass (including bagasse, agricultural waste and other waste);
- solar (photovoltaic or thermal, or any technology that uses heat and/or light from the sun to generate electricity);
- wind;
- storage technologies (battery systems, cells of all types, compressed gas, pumped storage);
- biogas using any organic material (except fossil fuels);
- energy from waste; and
- hybrids of any of the above-mentioned technologies.

The foregoing is not an exhaustive list.

Transmission Line Policy 2015

Recognising the need to augment the national transmission network, the federal government published the Transmission Line Policy 2015 (the “Transmission Policy”). So far, the Matiari-Lahore transmission line is the only project that has been developed under the Transmission Policy (see 4.2 Obtaining Approvals to Construct and Operate Transmission Lines and Associated Facilities for further details).

Projects Under Older Policies

Projects developed under older policies (eg, the 2015 Policy and the Policy for Power Generation Projects Year 2002) continue to enjoy the concessions and protections granted to them under such policies.

1.8 Unique Aspects of the Power Industry

High-Risk, High-Reward Market

Pakistan is a challenging country to invest in – for reasons ranging from security risks and circular debt to bureaucratic red tape. As a result, the government offers some of the highest

return-on-equity rates in the global market (up to 14–17%) to attract investment in the local power sector. The extraordinary return offered by the government has attracted a significant amount of local and foreign investment within the power sector and continues to do so.

Circular Debt

As per the NEPRA State of Industry Report 2024, the circular debt in the power sector stood at PKR2,393.370 billion in June 2024 and has continued to increase significantly since then. According to NEPRA, the main causes of the increase include:

- inefficiencies in the generation;
- transmission and distribution of power;
- non-payment of subsidies in a timely manner;
- transmission and line losses; and
- low recovery of amounts owed for sale of electricity.

Economic Meltdown

Dwindling foreign reserves, global inflationary pressures, a weakening rupee, political instability, and globally high fuel prices of imported fuel such as oil, RLNG and coal have led to a very precarious economic situation for Pakistan.

Lack of Planning/Co-Ordination

There is a chronic lack of planning and co-ordination within the government when it comes to the power sector.

Provincial governments exercise their legal power to issue letters of intent for projects without consulting the federal government, which leads to unplanned generation capacity additions. The yearly issuance of the IGCEP is typically delayed and, in lieu of a systematic onboarding of generation plants based on optimised tariffs, the NTDC has been incorporating new

projects into an already strained national transmission system. Now many of these projects are not IGCEP-compliant and NEPRA is refusing to process them until they achieve compliance. This has led to certain letter of intent holders abandoning their projects.

Dependence on Imported Fuels

Pakistan has failed to fully utilise its indigenous energy resources – specifically, its hydro resources, renewable sources such as wind, solar and bagasse, and local coal. Instead, the country has relied on imported fuels (HSD, RFO, imported coal and RLNG) to meet its energy requirements, which have been expensive and a drain on the national foreign exchange reserves.

Moratorium on Coal

As a result of climate change concerns, international financial institutions are now reconsidering their support for coal power. In some cases, these institutions have even withdrawn their financing commitments for in-development coal power projects.

Unwillingness of Distribution Companies to Enable Wheeling

Current examples of electricity wheeling are few and far between in Pakistan. Where wheeling is being done, the arrangement is at a nascent stage and localised.

DISCOs are unwilling to enable wheeling on their networks as a result of the following factors, among others.

- Cross-Subsidisation: DISCOs use high-revenue consumers to subsidise sale to low-revenue consumers. Losing the former consumers to wheeling would reduce the pool of high-revenue consumers, thereby

hampering the financial ability of the DISCOs to cross-subsidise.

- **Stranded Cost:** DISCOs argue that they spend regularly to maintain and expand their existing distribution networks and that abruptly losing high-revenue consumers to wheeling would mean that the DISCOs are unable to recover such costs, leaving such costs “stranded”.

The consumers lost to wheeling are often reliable, high-revenue customers that form the backbone of Pakistan’s industries (eg, factories, commercial and industrial establishments). This means the DISCOs’ concerns are juxtaposed against the developmental considerations of those industries that contribute significantly towards the economic growth of the country.

Ageing Transmission and Distribution Networks

Unfortunately, owing to neglect and lack of investment, the transmission and distribution networks of Pakistan have aged poorly. This has exacerbated losses, which go on to feed the problem of circular debt. This means these networks are ripe targets for foreign investment.

Bureaucratic Hurdles

Owing to institutional inertia and other factors, Pakistan suffers from chronic delay in government decision-making.

2. Market Structure, Supply and Pricing

2.1 The Wholesale Electricity Market

The wholesale electricity market is entirely regulated at present. NEPRA determines the tariffs for all sales of electricity, including sales made

by generation companies to distribution companies.

NEPRA has begun the process of deregulating the market in order to increase competition. In preparation for this deregulation, an elaborate mechanism of gradual transition to a competitive market – known as the CTBCM – has been developed. To enable the development of the CTBCM, the NEPRA Act was substantially amended in 2018, introducing the new licences discussed in **1.6 Recent Changes in Law or Regulation**.

2.2 Electricity Imports and Exports

NEPRA has developed a legal framework to enable the import of electric power from outside of Pakistan, including from the state of Azad Jammu and Kashmir.

The NEPRA (Import of Electric Power) Regulations 2017 enable licensees to negotiate and contract with power projects based outside NEPRA’s jurisdiction for the import of electric power. The NEPRA (Import of Electric Power) Regulations 2017 have recently been replaced with the NEPRA (Electric Power Procurement) Regulations 2022.

Currently, imports under these regulations are being made from the State of Azad Jammu and Kashmir and from Iran. The pricing of these imports is negotiated between the generator/exporter and the power purchaser (usually CPPAG or, for older projects, the NTDC) and subsequently approved by NEPRA.

Pakistan presently does not export electric power.

2.3 Supply Mix of Electricity

As per NEPRA's State of Industry Report 2024, the total installed generation capacity of CPPAG was 42,512 MW. This supply mix consisted of:

- 7,144 MW RLNG (16.80%);
- 4,620 MW imported coal (10.87%);
- 2,640 MW local coal (6.21%);
- 3,393 MW Gas (7.98%);
- 7,353 MW RFO (17.30%);
- 10,635 MW hydroelectric (24%);
- 1,838 MW wind (4.32%);
- 680 MW solar (1.60%); and
- 3,620 MW nuclear (8%).

Additionally, K-Electric has its own installed generation capacity of 3,376 MW, bringing the national total to 45,888 MW.

2.4 Market Concentration Limits

NEPRA has a broad mandate to ensure competition in the national market.

Additionally, the CCP has the mandate to ensure competition in all markets in Pakistan. In the case of mergers, transactions require pre-merger clearance by the CCP if they exceed the following thresholds:

- the value of gross assets of the undertaking (excluding value of goodwill) is PKR300 million or more, or the combined value of the undertaking and the undertaking(s) – the shares of which are proposed to be acquired – or of the undertakings being merged is PKR1 billion or more; or
- annual turnover of the undertaking in the preceding year is PKR500 million or more, or the combined turnover of the undertaking and the undertaking(s) – the shares of which are proposed to be acquired – or of the undertakings being merged is PKR1 billion or more; and

- the transaction relates to acquisition of shares or assets valued at PKR 100 million or more; or
- in the case of acquisition of shares by an undertaking, if an acquirer acquires voting shares that – together with voting shares (if any) held by the acquirer – entitle the acquirer to more than 10% voting shares.

In practice, there is no state entity that proactively regulates market concentration limits in the energy sector.

2.5 Surveillance to Detect Anti-Competitive Behaviour

Pakistan does not currently have a competitive energy market.

3. Generation Facilities

3.1 Constructing and Operating Generation Facilities

The construction and operation of generation facilities is regulated pursuant to:

- the NEPRA Act;
- the Generation Licensing Rules;
- the Generation Performance Standards Rules;
- the Tariff Rules;
- the EPC Selection Guidelines;
- the Selection of O&M Guidelines;
- the Pakistan Engineering Council Bye-Laws;
- the Electricity Act 1910; and
- the relevant provincial environmental acts.

NEPRA Laws

Pursuant to the NEPRA Act and the Generation Licensing Rules, no person can construct or operate a power project unless they have a licence to do so from NEPRA. Once they hold a

licence, they must construct the power project as per the approved parameters.

The 2018 Amendment Act, however, has stated that the requirement for a generation licence shall cease as of five years from the promulgation of the Amendment Act. A generation company must only obtain NEPRA's "concurrence" and ensure that they comply with the technical standards related to grid connectivity (see **1.1 Law Governing the Structure and Ownership of the Power Industry**).

NEPRA promulgated the NEPRA (Alternative and Renewable Energy) Distributed Generation and Net Metering Regulations 2015 to establish a framework for the regulation of distributed generation by using alternative and renewable energy and net metering by distributed generators (ie, a domestic, commercial or industrial consumer who owns and/or operates the relevant renewable energy small-scale facility and is licensed by the authority under the regulations).

Pakistan Engineering Council

The Pakistan Engineering Council (PEC) is responsible for regulating engineers, constructors and operators working in Pakistan. Such persons must be issued the requisite licences from the PEC before they can undertake construction and operation works.

Federal and Provincial Environmental Protection Agencies

The regulation of environmental matters, including the environmental impact of power projects (particularly at the site of the project), is the mandate of the federal Environmental Protection Agency (EPA) and the provincial EPAs.

In order to obtain the approval of an EPA, a project may be required to carry out an Environmen-

tal Impact Assessment or an Initial Environment Examination, depending on the requirements of the respective EPA.

3.2 Obtaining Approvals to Construct and Operate Generation Facilities

The following key consents, inter alia, are required for the construction and operation of generation facilities:

- letter of intent – issued after successful application to the relevant facilitative body (approval only required if the project is being developed pursuant to a government policy) (see **1.1 Law Governing the Structure and Ownership of the Power Industry** for a list of the federal and provincial facilitative bodies);
- generation licence – issued after successful application to NEPRA under the NEPRA Act and the Generation Licensing Rules (see **1.1 Law Governing the Structure and Ownership of the Power Industry**);
- generation tariff – issued after successful application to NEPRA under the NEPRA Act, the Tariff Rules and other relevant regulations;
- letter of support – issued after successful completion of milestones under the letter of intent (approval only required if the project is being developed pursuant to a government policy);
- the IGCEP and grid interconnection study approval – issued by the NTDC after reviewing the study;
- environmental approvals – issued after successful application to the relevant environmental protection agency, following an Environmental Impact Assessment; and
- project agreements, including:
 - (a) power purchase agreement – entered into with the power purchaser;
 - (b) implementation agreement – entered into with the relevant government, usually

the federal government (approval is only required if the project is being developed pursuant to a government policy);

- (c) lease agreement – entered into with the lessor, if the land is not acquired by the developer as a freehold;
- water use agreement – entered into with the water supplier; and
- fuel supply agreement – entered into with the fuel supplier, if applicable.

Consents required as part of the implementation agreement include:

- commitment from the SBP to make available foreign currency for the project's requirements;
- SBP approval of the foreign currency loans;
- SBP approval for remitting and retaining the company's revenue in foreign currency;
- consents required from NEPRA under the NEPRA Act;
- confirmation from the Ministry of Finance or the federal tax authority (Federal Board of Revenue (FBR)) that, during the term, the company will not be taxed in Pakistan on its profits and gains from electric power generation; however, this exemption no longer applies to generating companies receiving letters of support after 30 June 2023;
- statutory notifications and permits from the Ministry of Commerce or the FBR for importation of plant, machinery and supplies;
- statutory notification for reduction in stamp duty and registration fees; and
- special sanction by the provincial government under Section 34 of the Electricity Act 1910 permitting the company to connect the complex to the earth, etc.

3.3 Approvals to Construct and Operate Generation Facilities

The terms and conditions under which a generation facility can be set up are provided in the generation licence of each generation licensee (see **1.1 Law Governing the Structure and Ownership of the Power Industry**). The typical terms and conditions include:

- the term of the licence;
- requirement to pay the licence fee;
- the approved specifications of the generation facility, including capacity, location and technology;
- the approved offtake arrangement;
- the approved offtakers/consumers;
- requirement to only charge the tariff determined by NEPRA;
- obligation to work towards implementation and operation of a "Competitive Trading Arrangement" (which may be read now as a reference to the CTBCM model);
- requirement to comply with the "applicable documents", which include the NEPRA laws, Grid Code and the Distribution Code;
- requirement to comply with the Generation Performance Standards Rules;
- prohibition on abandonment of the generation business/facilities;
- requirement to maintain records;
- requirement to comply with the applicable environmental standards;
- obligation to provide information to NEPRA; and
- obligation to design, manufacture and test the facility according to the latest International Electrotechnical Commission, the Institute of Electrical and Electronics Engineers or any equivalent standards.

3.4 Eminent Domain, Condemnation and Expropriation Rights to Construct and Operate Generation Facilities

Power project developers themselves are not granted the right of eminent domain. However, the government is empowered under the Land Acquisition Act 1894 (the “Acquisition Act”) to assist developers in acquiring land for public purposes, which includes electric power generation for sale to the government (ie, CPPAG). Through the Acquisition Act, a project will ask the government to acquire the land from private citizens. The government will do so and require that the project company deposit compensation with the government, which is then disbursed to the landowners.

If the project company wishes to acquire land from the government, it may do so under the Colonization and Disposal of Government Lands Act 1912 through the issuance of a Statement of Conditions that specifies the purpose and terms applicable to such state lands. In other cases, especially where the land is already owned – or has been acquired – by the government or a third party, the project company may enter into a lease for the project land.

3.5 Decommissioning a Generation Facility

The term of each generation licence is designed to be commensurate with the useful life of the project. Nevertheless, some projects opt for early decommissioning or changing their fuel and/or upgrading their units in order to extend the useful life of the project.

Under the Generation Licensing Rules, decommissioning of a plant without obtaining NEPRA approval will result in a breach of the term of the licence. This may lead to NEPRA penalising the licensee by revoking/suspending the licence,

appointing an administrator for the generation business, or imposing a fine.

There have been instances where NEPRA has allowed decommissioning on application from an IPP. NEPRA usually requires that the IPP apply for cancellation of its licence (if the licence is still valid). Where only certain units are to be decommissioned, then the licence may need to be modified. NEPRA then allows decommissioning if there is no contractual obligation under the implementation agreement for transfer of the facility to the federal government.

At the end of the term of the concession agreements for most hydropower projects, the relevant government has the option of having the project transferred to it for a nominal sum. To date, none of the power projects whose concession agreement terms have expired have been transferred to the government.

4. Transmission Lines and Associated Facilities

4.1 Constructing and Operating Transmission Lines and Associated Facilities

The construction and operation of transmission facilities is regulated pursuant to:

- the NEPRA Act;
- the Tariff Rules;
- the Transmission Performance Standards Rules;
- the Grid Code;
- the Eligibility Criteria (Transmission Licences) Rules 2023 (the “Eligibility Rules”);
- PEC by-laws; and
- the Electricity Act 1910.

NEPRA Laws

Pursuant to the NEPRA Act, no person can construct or operate transmission facilities unless they have a licence to do so from NEPRA. In order to obtain a licence, they must meet the criteria stipulated in the Eligibility Rules. Once they hold a licence, they must construct the transmission facilities according to the approved parameters.

Grid Code 2023

The Grid Code is a regulatory code formulated by the NTDC and approved by NEPRA. All distribution and transmission companies (including the NTDC) are required to comply with the Grid Code in the development and operation of their facilities. The Grid Code has recently been updated to include provisions pertaining specifically to the CTBCM.

4.2 Obtaining Approvals to Construct and Operate Transmission Lines and Associated Facilities

The following are the key consents required for the construction and operation of transmission facilities:

- letter of intent – issued after successful application to the relevant facilitative body (only required if the project is being developed pursuant to a government policy);
- transmission licence – issued after successful application to NEPRA under the NEPRA Act;
- transmission tariff – issued after successful application to NEPRA under the NEPRA Act and the Tariff Rules;
- letter of support – issued after the successful completion of milestones under the letter of intent (approval only required if the project is being developed pursuant to a government policy);
- project agreements, including:

- (a) transmission service agreement (TSA) – entered into with the NTDC or the generation company, depending on the nature of the project; and
- (b) land rights – land rights may be acquired by the government under the Acquisition Act or in the form of leases/rights of way;
- grid interconnection study approval – issued by the NTDC after review of study;
- environmental approvals – issued after successful application to the relevant environmental protection agency, following an Environmental Impact Assessment; and
- other project-specific approvals.

The policy currently in vogue for the development and operation of transmission facilities is the Transmission Policy (see **1.7 Announcements Regarding New Policies**). Only one transmission facility has been developed under this policy so far – namely, the Matiari-Lahore 600 kV high-voltage direct current transmission line developed by the Pak Matiari-Lahore Transmission Company (Private) Limited. The line is intended to transmit the electric power generated by the local coal-based power projects being developed in the southern parts of Pakistan towards the central and northern parts of the country.

4.3 Terms and Conditions Imposed on Approvals to Construct and Operate a Transmission Line and Associated Facilities

The majority of the terms and conditions for the operation of transmission facilities are set out in the respective licence of each transmission licensee. The typical terms and conditions include:

- term and renewal of the licence;
- licence fee payments;

- exclusivity (if granted);
- requirement to only charge the tariff determined by NEPRA; and
- obligation to work towards implementation and operation of the CTBCM.

4.4 Eminent Domain, Condemnation and Expropriation Rights to Construct and Operate Transmission Lines and Associated Facilities

Rights over the land required for the construction and operation of transmission facilities are acquired in the following ways:

- acquisition by the government under the Acquisition Act;
- acquisition pursuant to the WAPDA Act;
- acquisition as a freehold by the transmission company;
- acquisition as a leasehold by the transmission company; and
- acquisition of rights of way (through contractual licence) by the transmission company.

4.5 Monopoly Rights to Provide Transmission Services

The NTDC enjoys the exclusive right to provide transmission services within its service territory.

Although K-Electric Limited also enjoyed the exclusive right to provide transmission services within its service territory, this right no longer exists in the licence granted to K-Electric after the promulgation of the 2018 Amendment Act. However, in order to foster greater competition, the 2018 Amendment Act has ended the mandatory requirement for issuance of exclusive licences. Accordingly, once licences granted prior to the amendment have expired, it is expected that future licences will no longer grant exclusivity to special purpose transmission licensees.

4.6 Transmission Charges and Terms of Service

The tariff for transmission services is determined by NEPRA pursuant to the NEPRA Act and the Tariff Rules.

NEPRA determines the tariff for transmission services by taking into account the following:

- revenue requirements;
- investment and expansion requirements; and
- operation and maintenance requirements.

4.7 Open-Access and Non-Discriminatory Transmission

Pursuant to the terms of the transmission licences (see Articles 25, 26 and 27 of the NTDC's licence and Articles 9 of K-Electric Limited's licence), licensees are required to provide transmission services on an open-access and non-discriminatory basis. As the licensing authority, NEPRA is responsible for policing the licensees' compliance with these obligations. The same is also mandated under the Open Access Regulations.

5. Distribution

5.1 Constructing and Operating Electricity Distribution Facilities

The construction and operation of distribution facilities is regulated pursuant to:

- the NEPRA Act;
- the Distribution Licensing Rules;
- the Distribution Performance Standards Rules;
- the Tariff Rules;
- the Eligibility Rules;
- the National Electric Power Regulatory Authority Licensing (Distribution) Regulations 2022;

- the NEPRA (Microgrid) Regulations 2022;
- National Electric Power Regulatory Authority Consumer Eligibility Criteria (Distribution Licensees) Regulations 2022;
- the Distribution Code 2005;
- PEC by-laws; and
- the Electricity Act 1910.

NEPRA Laws

No person can construct or operate a distribution project unless they have a licence to do so from NEPRA. Licence holders must construct the distribution facilities as per the approved parameters.

Microgrids have separate regulations regarding issuance of licences. These regulations also stipulate conditions regarding connection of microgrids to the national grid.

5.2 Regulatory Process for Obtaining Approvals to Construct and Operate Electricity Distribution Facilities

The following are the key consents required for the construction and operation of distribution facilities:

- distribution licence – issued after successful application to NEPRA under the NEPRA Act and the Distribution Licensing Rules;
- distribution tariff – issued after successful application to NEPRA under the NEPRA Act and the Tariff Rules;
- project agreements, including:
 - (a) power purchase agreement(s) – entered into with electric power suppliers (generation companies and other suppliers); and
 - (b) land rights – land rights may be acquired by the government under the Acquisition Act or in the form of leases/rights of way;
- grid interconnection study approval – issued by the NTDC after reviewing the study (only applicable if the licensee’s network is connected to the national grid);
- environmental approvals – issued after successful application to the relevant EPA, following an Environmental Impact Assessment; and
- other project-specific approvals.

5.3 Terms and Conditions Imposed in Approvals to Construct and Operate Electric Distribution Facilities

The terms and conditions for the construction and operation of distribution facilities are set out in the distribution licence issued by NEPRA (or are implied therein by the Distribution Licensing Rules).

These terms and conditions include:

- term and renewal of the licence;
- licence fee payment;
- exclusivity (if granted);
- requirement to only charge the tariff determined by NEPRA;
- obligation to work towards the implementation and operation of the CTBCM;
- obligation to offer terms;
- obligation to offer non-discriminatory open-access transmission interconnection service to any party;
- requirement to comply with the “applicable documents”, which include the relevant laws, the Grid Code and the Distribution Code;
- requirement to maintain accounts and records;
- prohibition of investment and acquisitions except in accordance with NEPRA-approved investment plans;
- prohibition of abandonment of the distribution business;
- requirement to comply with the applicable performance and environmental standards;

- obligation to provide information to NEPRA; and
- revocation and suspension.

5.4 Eminent Domain, Condemnation or Expropriation Rights to Construct and Operate Electricity Distribution Facilities

Rights over the land required for the construction and operation of distribution facilities are acquired in the same way as the equivalent process described in 4.4 Eminent Domain, Condemnation and Expropriation Rights to Construct and Operate Transmission Lines and Associated Facilities for transmission companies.

5.5 Monopoly Rights for Electricity Distribution Entities

Historically, by virtue of the NEPRA Act and their licences, distribution companies have enjoyed the exclusive right to provide distribution services within their specified service territories. Since the 2018 Amendment Act to the NEPRA Act, however, the provision for exclusivity has been removed. Although licensees that have already been granted exclusivity will continue to enjoy it until the expiry of those licences, they will not be granted exclusivity thereafter. Distribution companies' licences are now non-exclusive.

5.6 Electricity Distribution System Charges and Terms of Service

The principal laws governing the provision of distribution service, regulation of distribution charges, and terms of service include:

- the NEPRA Act;
- Distribution Licensing Rules; and
- the Tariff Rules.

The following is a non-exhaustive list of details that NEPRA takes into consideration when determining a distribution tariff:

- cost of power procurement;
- revenue requirements;
- investment and expansion requirements;
- operation and maintenance requirements;
- consumer requirements;
- subsidies; and
- line losses.

Pursuant to Section 31 (2) of the NEPRA Act, the regulatory principles that NEPRA must take into account when determining a distribution tariff include:

- the protection of consumers against monopolistic and oligopolistic prices;
- the research, development and capital investment programme costs of licensees;
- the encouragement of efficiency in licensees, operations and quality of service;
- the encouragement of economic efficiency in the electric power industry;
- the economic and social policy objectives of the federal government; and
- the elimination of exploitation and minimisation of economic distortions.

Under the 2018 Amendment Act, the sale of electric power to consumers is licensed separately under the supply licence rules and regulations. XW-Discos are treated as suppliers of last resort (ie, required to service all consumers in their territory according to the NEPRA-approved terms and tariff). There are different tariffs for different types of consumers. The broad categories are:

- residential consumers;
- commercial consumers;
- industrial consumers; and
- bulk power consumers.

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