Contributed by Homburger

The 'Law & Practice' sections provide easily accessible information on navigating the legal system when conducting business in the jurisdiction. Leading lawyers explain local law and practice at key transactional stages and for crucial aspects of doing business.
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Homburger is a leading Swiss corporate law firm comprising 150 lawyers, of whom 33 are partners. It advises and represents enterprises and entrepreneurs in relation to all aspects of commercial law, including transactions, proceedings and complex cases in both a domestic and a global context. The firm offers clients comprehensive legal advice, support through negotiations, representation before public authorities and in court, and protection of their interests in administrative proceedings. It places great emphasis on identifying legally sustainable solutions to complex legal issues while never losing sight of clients’ commercial objectives. The team works closely with leading law firms abroad, enabling it to offer optimal solutions to Swiss companies, wherever their business activities take place. The lawyers are registered with the Bar Association of the Canton of Zurich and/or practise as tax advisers. Most also have additional legal qualifications and have studied or worked abroad.

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1. General Structure and Ownership of the Power Industry

1.1 Principal Laws Governing the Structure and Ownership of the Power Industry

The Swiss energy market is highly fragmented, with more than 900 market players active in the electricity sector alone, differing substantially in terms of size and scope of activities. While the operation of the national high-voltage transmission network is in the hands of one single national transmission system operator (TSO), the generation, distribution and supply market is in the hands of a large number of generators, distributors and utilities. The majority is made up of approximately 650 utilities which are active in the distribution and supply of energy. Most of them are owned by local governments and many also supply water and gas, as well as electricity. They operate the local distribution network and connect it, directly or indirectly, to the national transmission network. Some of these utilities, particularly the larger ones, also generate electricity, but mostly they purchase electricity from the key players in the Swiss market, such as Alpiq, Axpo, BKW, EWZ and Repower. These players account for most of the electricity generated in Switzerland and own the largest power plants in Switzerland, together with larger utilities. They are partially in private hands and partially state owned. In addition to the large key players, a significant number of smaller, local generators also generate electricity. The national transmission network is owned and operated by Swissgrid, acting as Swiss TSO, which is owned by more than 30 generators and utilities, some of which are state owned, while others are owned by private investors.

The Swiss Federal Constitution allocates certain powers regarding energy matters to the federal government, while other powers remain with the 26 Cantons that make up the Confederation. Most importantly, the federal government is responsible for determining the strategy and principles for the use of domestic and renewable energy in Switzerland, and for legislation in the field of the transmission and distribution of energy, nuclear energy and the use of hydro power to generate energy. In other fields, legislative authority remains with the Cantons, meaning that the applicable law is both federal and cantonal law, leading to fragmented and varied legislation.

On the federal level, the most important laws governing the generation, transmission and distribution of energy are as follows (further details available at www.admin.ch):

- the Federal Act on Energy (Energy Act);
- the Federal Act on Electricity (Electricity Act);
• the Federal Act on Electricity Supply (Electricity Supply Act);
• the Federal Act on Nuclear Energy (Nuclear Energy Act);
• the Federal Act on Utilisation of Water Power (Water Power Act);
• the Federal Act on the Protection of Waters (Water Protection Act); and
• the Federal Act on the Reduction of CO2 (CO2 Act).

In addition, there are a number of federal ordinances that implement the above laws and contain further detailed provisions.

1.2 Principal State-owned or Investor-owned Entities
The largest entities active in the generation of energy include Axpo AG (owned by Cantons and cantonal utilities), Alpiq Holding AG (shares publicly listed, owned by state-owned and private investors), BKW AG (shares publicly listed, majority of shares owned by the Canton of Bern), Elektrizitätswerke der Stadt Zürich (EWZ, administration unit of the city of Zürich) and Repower AG (shares traded on OTC exchange platforms – more than 80% are owned by EWZ, the Canton of Graubünden, UBS Clean Energy Infrastructure KGK and Axpo Holding AG). These own and operate – directly or indirectly – the largest power plants in Switzerland, including hydro and nuclear power plants.

The national transmission network is owned by Swissgrid AG, which is owned by a number of both state- and private-owned generators and utilities. The largest shareholders of Swissgrid AG include BKW Netzbeteiligungen AG, Axpo Power AG, Axpo Trading AG, EWZ, SIRESCO Société d’Investissement de Suisse occidentale SA and Centralschweizerische Kraftwerke AG.

The distribution facilities are owned by local distributors and utilities, most of which are owned by Cantons and local governments.

1.3 Foreign Investment Review Process
Generally, Switzerland is open for foreign investments and there are no general laws that would provide for a foreign investment review process or general investment limit thresholds in Switzerland. Foreign investments are also permitted in the power industry.

However, certain exceptions apply. For instance, in view of the strategic importance of the national transmission network owned and operated by Swissgrid, the Electricity Supply Act requires that Cantons and municipalities own the majority of Swissgrid, and Cantons, municipalities and Swiss utilities are further granted a pre-emptive right for Swissgrid shares. In the case of power plants that are co-owned by several generators, shareholders’ agreements often exist that grant pre-emptive and similar rights to respective co-owners, limiting potential third-party investments. Finally, there is legislation that controls and limits the acquisition of Swiss real estate by foreigners. This is not specific to the power industry, but it may be relevant when it comes to foreign investments in this industry.

1.4 Principal Laws Governing the Sale of Power Industry Assets
While there are no general laws limiting the sale of generation and distribution assets, limitations may result from the fact that authorisations and licences granted to generators of electricity, including authorisations for the construction and operation of nuclear plants in particular, as well as concessions to use hydro power, may only be transferred to a third party with the consent of the authority that granted the authorisation or concession. Consent is usually granted if the third party seeking to acquire the authorisation or concession fulfils the prerequisites for the granting of the authorisation or concession. The need to obtain consent from the authority granting the authorisation or concession is typically only triggered in the case of asset transfers, where the authorisation or concession needs to transfer to the buyer along with the relevant assets; it is not usually triggered by share deals, which do not require the transfer of the authorisation or concession.

Under the Electricity Supply Act, the Swiss transmission network is required to be owned and operated by Swissgrid acting as the national TSO. Thus, Swissgrid may not divest assets or businesses that it requires to fulfill its duty to operate such network, which prevents relevant assets from being transferred to a third party. Cross-border ‘merchant lines’ may be exempted from this requirement. Such merchant lines may be owned by other market players, and are exempted from the capacity management under the control of Swissgrid. Furthermore, the Electricity Supply Act requires that the majority of the capital and voting rights of Swissgrid are owned – directly or indirectly – by Cantons and local municipalities. EICom is responsible for overseeing the status and maintenance of the transmission network operated by Swissgrid.

In addition to these sector-specific laws, the Swiss Competition Commission exercises merger controls under the Federal Act on Cartels (see 2.5 Agency Conducting Surveillance to Detect Anti-competitive Behaviour, below).

1.5 Central Planning Authority
Various authorities and other stakeholders are involved in overseeing and administering the electricity supply and the development of transmission facilities; there is no one single authority.

The principal obligation for the strategic planning and development of the transmission network lies with Swissgrid, the national TSO, which co-operates with the Swiss Federal...
Office of Energy and the Swiss Federal Electricity Commission (ElCom) for this purpose. Swissgrip is also responsible for keeping the transmission network safe and reliable, and it co-operates with generators to ensure the stability of the network. Generation planning is mostly done through co-operation between generators, trading companies and utilities, together with Swissgrip, monitoring supply and demand for electricity and ensuring the ongoing stability of the network.

ElCom has been established as an independent regulatory authority to monitor and enforce compliance with the Electricity Supply Act. It monitors the development of the electricity markets, with the aim of ensuring the safe and affordable supply of electricity in Switzerland; it also reviews the status and maintenance of the national transmission network operated by Swissgrip. If it believes that the safety and affordability of the electricity supply may be at risk, it may propose remedial measures to be implemented by the Swiss Federal Council. In addition, ElCom monitors electricity prices, regulates issues relating to electricity transmission and trading, and rules as a judicial authority on disputes relating to network access and tariffs.

The Swiss Federal Inspectorate for Heavy Current Installations (ESTI) is the supervisory and regulatory authority for electrical installations (including high-voltage installations, low-voltage installations and low-current systems) other than those under the supervision of the Federal Office of Transportation. ESTI ensures that these installations are designed, constructed and maintained in a safe manner.

Other authorities are also involved in overseeing compliance with regulation in the electricity market. For instance, the Swiss Federal Office of Energy is responsible for monitoring and enforcing compliance with the Energy Act and certain other federal acts, to the extent that the relevant powers are not delegated to ElCom or another regulatory authority.

1.6 Recent Material Changes in Law or Regulation
The new Federal Act on Energy entered into force on 1 January 2018, along with a number of implementing ordinances and further implementing changes in a number of Federal Acts. The new Energy Act is a first step towards implementing the Federal Councils Energy Strategy 2050, which aims to reduce the overall amount of energy consumption, the phase-out of nuclear power and the increase of renewable energy sources. Since 1 January 2018, it is no longer permitted to grant authorisations for the construction of new nuclear power plants. Furthermore, the new Energy Act introduces targets for the reduction of the overall energy consumption and measures for strengthening renewable energy sources.

1.7 Announcements Regarding New Policies
An important pending policy change is the full liberalisation of the Swiss electricity market. To date, only large customers (with an annual consumption of 100 MWh or more) can freely choose their electricity supplier; other customers have to procure electricity from the local utility. The Swiss parliament decided to fully liberalise the market, in principle, a few years ago, but the Federal Council has so far delayed the implementation because it wanted to co-ordinate it with the ongoing discussions with the EU on a bilateral treaty granting Switzerland access to the EU electricity market.

However, the negotiations with the EU did not progress as expected and, in addition, the Federal Council had a clear mandate in the Electricity Supply Act to fully liberalise the electricity market. The Federal Council has therefore again picked up the matter and it released a proposal for a partial revision of the Electricity Supply Act for public consultation on 17 October 2018. The key goal of the proposed revision is to allow small consumers (with an annual consumption of up to 100MWh) to procure electricity on the free market and to abolish the monopoly of local utilities in supplying electricity to such consumers. Under the revised law, it is proposed that these consumers can either procure electricity from the local utilities, who would continue to be obliged to supply electricity to all consumers within their territory, or from a third-party supplier, and that they can reconsider their choice annually.

A second key goal of the proposed revision is the promotion of renewable, locally produced electricity. In particular, the proposal includes an obligation of electricity suppliers to offer a standard product consisting exclusively of electricity generated in Switzerland from renewable energy sources. Further, the draft of the revised Electricity Supply Act includes a number of additional changes, such as measures to create additional energy reservoirs to safeguard the availability of energy sources in case of extraordinary circumstances, a restructuring of the tariff regime for the use of the distribution network, the implementation of a sunshine regulation to increase transparency on the distribution network operators, and the implementation of measures to incentivise smart grids and flexible use of the available capacities.

The public consultation period ended on 31 January 2019 and the Federal Council is currently considering the feedback received during the consultation. The Swiss Federal Council is expected to potentially make further amendments to the proposal and to then present the bill to the Swiss Parliament.

1.8 Unique Aspects of the Power Industry
Due to its geographic situation and the lack of natural resources, the Swiss electricity market is largely dominated by hydro power and nuclear energy. Almost two thirds of
the Swiss-generated electricity comes from hydro power, and approximately one third from nuclear power. Thus, the local generation of electricity is largely carbon-neutral. The need to increase the share of other renewable energy sources is mainly the result of the decision to phase-out nuclear power. Further, electricity consumption is expected to increase if the carbon-based fuels that are currently used for heating and transport are increasingly replaced by electricity.

2. Market Structure, Supply and Pricing

2.1 Structure of the Wholesale Electricity Market
The wholesale electricity market in Switzerland is liberalised. The price is set by competitive offers among market players and, as such, is determined by supply and demand. Electricity is traded on foreign exchanges, as there is no power exchange in Switzerland. In the spot market, electricity for physical delivery is traded using day-ahead and intraday transactions. In addition, futures and forwards are traded, either for physical delivery or for financial settlement.

2.2 Imports and Exports of Electricity
The import and export of electricity are permitted. In theory only, the export of electricity that is generated through hydro power requires authorisation from the Federal Department of the Environment, Transport, Energy and Communications. However, this requirement has not been enforced in recent years, and it is currently of no practical relevance.

The Swiss transmission network is interconnected with the networks of Austria, France, Germany and Italy. While imports from Austria, France and Germany typically exceed exports to these countries on an annual basis, exports exceed imports for Italy. Therefore, the Swiss transmission network is used for the transit of electricity to Italy. On an annual basis over past years, including in 2018, Switzerland mostly exported more electricity than it imported, although imports exceeded exports during winter.

2.3 Supply Mix for the Entire Market
In 2018, electricity generated in Switzerland was mostly generated by hydro power plants (55.4%), nuclear plants (36.1%), various renewable energy sources (5.7%) and conventional thermal power plants (2.8%).

2.4 Principal Laws Governing Market Concentration Limits
There are no specific concentration limits in the energy market and, due to the largely fragmented market, this is not currently a major concern. Concentrations resulting from mergers and similar transactions may be subject to merger control exercised by the Swiss Competition Commission under the Federal Act on Cartels (see 2.5 Agency Conducting Surveillance to Detect Anti-competitive Behaviour, below).

2.5 Agency Conducting Surveillance to Detect Anti-competitive Behaviour
In general, the Federal Act on Cartels and other Restraints of Competition (the Cartel Act – see www.admin.ch) prohibits anti-competitive behaviour. Public enforcement of the Cartel Act is the responsibility of the Competition Commission (ComCo) and its Secretariat. The Secretariat monitors the markets, conducts investigations and prepares the decisions of the ComCo, while the ComCo acts as the decision-making body. If there is prima facie evidence of anti-competitive conduct, a formal investigation may be opened. The Secretariat has broad investigatory powers within such investigations. It may conduct dawn raids in the premises of companies or at the private residence of company employees, order the production of documents, and interview company employees. Based on the results of the investigation, the Secretariat will provide a draft decision to the ComCo, which then takes a decision, usually after holding a hearing of the company concerned. Fines for anti-competitive behaviour may amount to up to 10% of the turnover achieved in Switzerland by the infringing company’s corporate group in the preceding three financial years.

3. Climate Change Laws and Alternative Energy

3.1 Principal Climate Change Laws and/or Policies
The reduction of carbon dioxide emissions is one of the key goals of the Swiss climate change policy and the Federal Council’s energy strategy 2050 (see www.bfe.admin.ch). To achieve this goal, most importantly, the CO2 Act stipulates that by 2020 CO2 emissions are to be reduced by 20% from the level they were at in 1990. In addition, the Energy Act has introduced measures that aim to reduce the overall energy consumption in Switzerland and increase the use of energy from renewable sources.

Given that the majority of Swiss-generated electricity is CO2-neutral, the focus of the CO2 reduction laws is on reducing CO2 emissions resulting from burning carbon-based fuels for heating buildings and transportation, through various measures to incentivise energy-related refurbishments of buildings, and by lowering goals for average CO2 emissions of imported cars and trucks: by 2020, the average CO2 emissions of imported passenger cars must not exceed 95g/km, and vans and light trucks must not exceed 147g/km. To enforce these goals, average CO2 emission targets will be determined for each car importer. If such targets are not achieved by the car importer, sanctions of up to CHF152 per gram of CO2 emission in excess of the individual target average CO2 emission may be charged for each vehicle put into circulation by the relevant importer. Finally, a CO2 tax of up to CHF120 per ton of CO2 is levied on the creation, extraction and import of carbon-based fuels. To compensate CO2 emissions, an emission certificate trading system
is available to companies that are active in an industry that operates facilities with large CO2 emissions. Insofar as participating companies compensate their CO2 emissions with corresponding certificates, they are reimbursed for the CO2 tax.

3.2 Principal Laws and/or Policies Relating to the Early Retirement of Carbon-based Generation

There are no programmes to encourage or require the retirement of carbon-based generation, because there is no such generation in a relevant quantity in Switzerland.

3.3 Principal Law and/or Policies to Encourage the Development of Alternative Energy Sources

The Energy Act encourages the development of renewable energy sources, including hydro power (which is already the source of almost two thirds of electricity generated in Switzerland), solar, wind, geothermal and biomass power. The target for the average annual production of electricity from renewable sources excluding hydro power is set at 4,400GWh for 2020 and 11,400GWh for 2035; the target for hydro power is set at 37,400GWh for 2035 (compared to a total consumption of electricity in 2018 of approximately 57,600GWh).

To achieve these goals, the Energy Act has introduced a variety of measures, including the following:

- The process for obtaining authorisation to construct renewable energy generation facilities shall be facilitated by the stipulation that a national interest exists in the construction of such facilities, which is to be considered when balancing conflicting interests (such as protecting natural and cultural heritage, fishery, shipping, interests of private land owners, etc.) in the authorisation process, and further by requiring Cantons to implement a quick and efficient authorisation process.
- Distributors and local utilities are obligated to accept and compensate electricity generated from renewable energy that is fed into their network, provided that the generation facility does not exceed a capacity of 3MW or an annual net output of 5000MWh.
- Investment subsidies can be granted to support the construction of renewable energy generation facilities. Depending upon the type and size of the generation facility, either a one-time investment subsidy or a feed-in remuneration is granted. One-time subsidies are intended to be granted to small solar power generation facilities (less than 100kWp). Larger solar power generation facilities, mid-size hydro power generation facilities (1-10MW) and other renewable energy generation facilities may participate in the feed-in remuneration scheme, in which they have to sell the energy at market prices but can profit from certain contributions in addition to the price at which they sell. There is currently a long waiting list of projects applying for a feed-in remuneration.

Applications are processed on a first-in, first-out basis, and there is no guarantee that there will be sufficient funding for all projects on the waiting list. The administration of these investment subsidies is delegated to Pronovo AG, a subsidiary of the Swiss TSO, Swissgrid, to which applications have to be made.

- Large hydro plants with more than 10MW power can be compensated with a market premium for electricity they have to sell for less than the production costs.

To finance these measures, a charge of up to CHF0.023 per kWh is levied by utilities on the electricity they supply to their customers.

4. Generation

4.1 Principal Laws Governing the Construction and Operation of Generation Facilities

The principal laws governing the construction and operation of generation facilities depend upon the type of generation facility, as follows.

For hydro power plants, the Water Power Act and the Water Protection Act are relevant on a federal level and govern, among other things, the use of hydro power and the protection of waters. Concessions to use hydro power for the purpose of generating electricity are granted by the competent authority of the relevant Canton; if a generation facility serves the purpose of supplying electricity to federal transportation services, the Confederation has the power to grant necessary rights to the generator (this is mainly relevant for generation facilities built for the purposes of the Swiss national railway). Details of the authorisation process are regulated in the Water Power Act, which also contains the minimum requirements that need to be observed by cantonal authorities when reviewing and approving projects. In particular, it requires adequate public consultation prior to a concession being granted, and that nature, heritage landscapes, fishery and shipping are adequately protected.

For nuclear power plants, the Nuclear Energy Act governs the construction and operation of the relevant facilities. The operation of a nuclear power plant requires a general licence from the Federal Council and a further authorisation from the Federal Department of the Environment, Transport, Energy and Communications (DETEC). Whether or not a general licence is granted is within the discretion of the Federal Council. The decision is subject to confirmation by the Federal Parliament, and the Parliament’s confirmation is subject to an optional public referendum. Therefore, whether or not a general licence is granted is essentially a political decision. Once the Federal Council has granted the general licence, a DETEC authorisation will have to be obtained in order to proceed with the project. Such authorisation is to be granted if the relevant prerequisites are met, particularly
those regarding safety. The same process would apply to the construction of nuclear power plants as for their operation, but the Nuclear Energy Act prohibits the granting of authorisation for the construction of new nuclear power plants.

There are no specific federal laws that govern the construction and authorisation of other generation facilities. They have to comply with applicable cantonal law, and authorisations are granted by the competent cantonal authority, as defined under applicable cantonal law. Nevertheless, certain federal laws are also relevant for cantonal authorisations. In particular, the Energy Act requires Cantons to implement an efficient authorisation proceeding for the construction, extension and renovation of facilities generating electricity from renewable energy sources. The purpose of this requirement is to support the construction of facilities that generate electricity from renewable energy sources. Additional federal authorisations (eg, under the laws mentioned in the following) may also be required, depending on the specific project. In such cases, the Swiss Federal Office of Energy is mandated to ensure adequate co-ordination among the various federal authorities that are involved, with the aim of also facilitating the authorisation process on the federal level.

The Electricity Act and the ordinances implementing its provisions are relevant for all generation facilities; they particularly govern the safety of electrical installations. Provisions of a number of other federal laws also have to be taken into account by federal and cantonal authorities granting authorisations, including the Federal Act on the Protection of the Environment (Environment Act), the Federal Act on the Protection of Nature and Cultural Heritage (Nature and Cultural Heritage Protection Act or NCHA) and the Federal Act on Forests (Forest Act), each of which provides for a certain minimum level of protection for its respective subject matter (ie, of the environment, nature, cultural heritage and forest) that may be affected by the construction and operation of generation facilities.

4.3 Terms and Conditions Imposed in Approvals to Construct and Operate Generation Facilities

The typical terms differ depending on the type of generation facility and the Canton in which the authorisation is obtained. The authorisation is issued to a certain project owner (ie, the legal entity that obtains the authorisation), and a transfer to a third party usually requires the authorisation of the authority that has granted the authorisation. Furthermore, authorisations will typically include provisions regarding the scope and purpose of the project and the authorisation, safety requirements that need to be adhered to during the construction phase and operation, reporting obligations, and measures that need to be implemented to protect and minimise the impact of the project on nature and the environment. Authorisations will also include provisions regarding expropriation rights granted to the project owner, and the terms on which expropriations are to be compensated. The authorisation may further determine a fee that is payable in consideration for rights to use public land or to use hydro power. Authorisations may be limited in time and have to be renewed from time to time. In particular, concessions to use hydro power are limited and granted for a maximum of 80 years.

To obtain an amendment or relaxation of a term or condition of an authorisation, a request to the authority that granted the authorisation is typically required.

4.4 Proponent’s Eminent Domain, Condemnation or Expropriation Rights

As a matter of principle, the right to expropriation may be granted to a project owner as part of the authorisation to construct the generation facility. According to the Federal Act on Expropriation (Expropriation Act), the right to expropriate land or similar rights can be claimed for facilities that are in the interest of the Confederation or a large part thereof, as well as for other public interests acknowledged by federal law. Given that the supply of electricity is an eminent national interest, in principle it is possible to claim expropriation rights for the construction of generation facilities. This is expressly stipulated in some of the laws governing the construction of generation facilities, such as the Water Power Act. However, such a right may only be claimed if and to the extent that it is proportionate in view of the project at issue. Land owners have to be fully compensated for the expropriated rights.

The process for obtaining expropriation rights is mainly regulated in the Expropriation Act. It is initiated by the filing of the request to obtain the project authorisation. The project plans have to be published, and affected land owners need to be informed so that they can object or file claims for compensation. Objections and compensation claims are reviewed by a valuation committee, which will hold a hearing with the project owner and the land owner and try to negotiate an agreement between the parties. If no agreement...
can be reached, the decision of whether or not to grant the expropriation right is usually within the power of the authority that is competent for granting the project authorisation, and the decision on the amount of the compensation is made by the competent valuation committee. Decisions are subject to court review upon appeal.

4.5 Requirements for Decommissioning
The most detailed regulations on the requirements for decommissioning a generation facility are stipulated in the Nuclear Power Act, and apply to nuclear power plants only. To decommission a nuclear power plant, the owner of the plant must establish a decommissioning plan detailing the timeline, the steps to be undertaken, protection measures to be implemented, how nuclear waste will be disposed of, the cost of the project, and how sufficient funding is guaranteed by the owner. The decommissioning is ordered by the Federal Department of the Environment, Transport, Energy and Communications, which may also determine which steps need prior sign-off by the supervisory authority (in particular, the Swiss Federal Nuclear Safety Inspectorate). The Nuclear Power Act further establishes a decommissioning fund that is to be funded by owners of nuclear facilities and that contributes to the costs of the decommissioning of nuclear power plants.

In principle, the Water Power Act provides for facilities to revert to the community that owns the land where a plant was erected upon the expiry of the concession. In view of this reversion right, the owner is required to maintain the plant in a good working condition until the end of the concession. The concession may also impose specific obligations regarding the decommissioning of the facility.

There are no specific provisions regarding the decommissioning of other generation facilities, but general principles of public law, including those applicable under the Environment Act, require the owner of a generation facility to ensure its safety; they also require that the facility is safely decommissioned at the end of its lifetime.

5. Transmission

5.1 Regulation of Construction and Operation of Transmission Lines and Associated Facilities

5.1.1 Principal Laws Governing the Construction and Operation of Transmission Facilities

The key federal laws that govern the construction and operation of transmission lines and associated facilities are the following:

- The Electricity Act, together with certain implementing ordinances, governs safety and other requirements that electric distribution facilities have to comply with, and the process for obtaining authorisations to construct electric distribution facilities, among other things. It also contains provisions regarding liability and expropriation rights.
- The Electricity Supply Act governs, among other things, the strategic planning of distribution networks and obligations of the network operators, which will be further addressed below.

A federal sectoral plan is required in order to construct transmission lines and associated facilities. The transmission lines sectoral plan is relevant for the transmission of electricity (see www.bfe.admin.ch), and is the overarching federal planning and co-ordination instrument for the further development of the high-voltage transmission lines. The Swiss Federal Office of Energy is responsible for the administration of the sectoral plan.

The construction of transmission lines also requires a federal planning authorisation, which can only be granted once the sectoral plan is established. Planning authorisations are granted by the Swiss Federal Inspectorate for Heavy Current Installations (ESTI – www.esti.admin.ch) or, if objections cannot be resolved or if the federal offices involved have dissenting opinions that cannot be settled, the Federal Office for Energy (FOE – www.bfe.admin.ch). The planning authorisation encompasses all authorisations required on the federal level; no additional cantonal or local authorisations are required.

5.1.2 Regulatory Process for Obtaining Approvals to Construct and Operate Transmission Facilities

A sectoral plan and a planning authorisation is required in order to construct a transmission line and associated facilities. The process to include a project in the sectoral plan is initiated by the project owner (usually Swissgrid) filing a request to the Swiss Federal Office of Energy, including proposals for planning territories. Prior to filing such a request, the project owner usually seeks a co-operation agreement with the affected Cantons to support and co-ordinate the request. Following review by the Swiss Federal Office of Energy and co-ordination with other authorities, a specific planning corridor is defined and included in the sectoral plan. The competent authority for taking decisions on the sectoral plan is the Swiss Federal Council. Its decisions cannot be appealed.

On this basis, the project owner can then prepare a specific project, for which a planning authorisation from ESTI will have to be obtained. This process is initiated by filing a request to ESTI, specifying the details of the project and providing all relevant planning documentation. For the construction of transmission lines, an environmental impact assessment usually has to be conducted prior to the filing of
the request. ESTI will review the request and forward it to the Cantons that are affected by the project (typically, the Cantons where the project will be realised). The affected Cantons have three months to comment; local public consultation is required during that time. Private persons who are specifically affected by the project (eg, because they own land in the perimeter of the project or because they may be affected by expropriation required to complete the project) may file objections or ask for compensation, and local municipalities may file objections to safeguard their rights. At the same time, ESTI will consult with other federal departments and involve the competent valuation committee if expropriations are required. After public consultation, ESTI will attempt to resolve all objections and, if successful in doing so, will issue the authorisation. If objections cannot be resolved or if federal offices involved have dissenting opinions that cannot be aligned, ESTI will forward the matter to the Federal Office for Energy to render a decision. The purpose of this planning authorisation procedure is mainly to verify whether construction projects meet the applicable safety requirements and comply with environmental law, and whether legitimate private interests are duly respected. Planning authorisations are subject to court review upon appeal.

The duration of the entire process to obtain an authorisation to construct a transmission line (including the process to include the project in the sectoral plan) may take more than ten years, and appeals may further extend the duration of the entire process.

5.1.3 Terms and Conditions Imposed in Approvals to Construct and Operate Transmission Facilities

The planning authorisation will typically state that construction work may only be initiated once the authorisation has become legally binding (ie, after the expiry of the deadline to file appeals), that it will expire if construction is not initiated within three years of the authorisation becoming legally binding, and that the facilities have to be constructed in accordance with the approved plans. It will also include conditions to be observed, particularly in relation to the implementation of measures to ensure safety, and the protection of nature and the environment. Where expropriations are needed, the relevant terms and conditions will be detailed in the planning authorisation.

5.1.4 Proponent’s Eminent Domain, Condemnation or Expropriation Rights

The right to expropriation may be granted to the project owner as part of the grant of the planning authorisation to construct the transmission line. However, this right may only be claimed if and to the extent it is proportionate in view of the project at issue. Land owners have to be fully compensated for the expropriated rights.

The process for obtaining expropriation rights is mainly regulated in the Expropriation Act. The process is initiated by the filing of the request to obtain the planning authorisation, and it will be included in the respective process. Compensation claims are reviewed by a valuation committee, which will hold a hearing with the project owner and the land owner and try to negotiate an agreement between the parties. If no agreement can be reached, the competent valuation committee will decide on the amount of the compensation. Decisions are subject to court review upon appeal.

5.1.5 Transmission Service Monopoly Rights

The Swiss TSO, Swissgrid, has the monopoly right to operate the Swiss transmission network and to provide transmission services in Switzerland, established under the Electricity Supply Act. Certain cross-border transmission lines may be exempted from this monopoly (so-called ‘merchant lines’).

5.2 Regulation of Transmission Service, Charges and Terms of Service

5.2.1 Principal Laws Governing the Provision of Transmission Service, Regulation of Transmission Charges and Terms of Service

The general principles regarding the provision of transmission services, charges and terms of service are regulated in the Electricity Supply Act and its implementing ordinances. Swissgrid is entitled to charge a fee for the use of the Swiss transmission network. Exemptions may be granted for the use of certain cross-border transmission lines that are not part of the Swiss transmission network (so-called ‘merchant lines’). The fee is charged to distribution network operators and end-customers that are directly interconnected with the transmission network. In turn, the relevant distribution network operators will charge these fees to their customers, and the cumulative costs are borne by the end-customer.

5.2.2 Establishment of Transmission Charges and Terms of Service

The transmission charge that Swissgrid may impose for the use of the Swiss transmission network has to be cost-based (taking into account the cost of constructing, operating and maintaining the transmission network) and cover the usage of the network and the provision of services. The usage fee is composed of a working tariff per kWh, a power tariff per MW and a fixed basic tariff per output point. A fee for general ancillary services as well as individual ancillary services (covering active power losses and reactive energy) may also be charged.

The transmission charges of Swissgrid are subject to review by ElCom in case of disputes or ex officio. Since transmission charges were introduced in Switzerland in 2009, ElCom has
already made use of its power to review transmission charges ex officio in order to reduce the tariffs originally requested by Swissgrid. The orders have regularly been appealed, including by Swissgrid.

5.2.3 Open-access Transmission Service

As sole national TSO, Swissgrid is required to provide transmission services and network access on a non-discriminatory basis to generators and distribution network operators that are to be interconnected to the national transmission network. Network access can be denied if the safe and stable operation of the transmission network would be impaired. Disputes regarding network access can be reviewed by ElCom.

Exceptions to the open access principle may apply in respect of certain cross-border transmission lines, for which capacity may be granted to third parties based on prioritised long-term capacity agreements.

6. Distribution

6.1 Regulation of Construction and Operation of Electricity Distribution Facilities

6.1.1 Principal Laws Governing the Construction and Operation of Electricity Distribution Facilities

The key federal laws governing the construction and operation of electricity distribution facilities are as follows:

- The Electricity Act, together with certain implementing ordinances, governs safety and other requirements that electric distribution facilities have to comply with, and the process for obtaining authorisations to construct electric distribution facilities, among other things. It also contains provisions regarding liability and expropriation rights.
- The Electricity Supply Act governs, among other things, the strategic planning of distribution networks and obligations of the network operators, which will be further addressed below.

The type of authorisation required to construct an electricity distribution facility depends on the type of facility that is to be constructed. In general, the construction of high-voltage distribution facilities as well as certain low-voltage distribution facilities requires a federal planning authorisation. Planning authorisations are granted by the Swiss Federal Inspectorate for Heavy Current Installations (ESTI) or, if objections cannot be resolved or if federal offices involved have dissenting opinions that cannot be settled, by the Federal Office for Energy. The planning authorisation encompasses all authorisations required on the federal level; no additional cantonal or local authorisations are required.

If no planning authorisation is required, as is the case for certain exempted low-voltage facilities, a local construction authorisation may be needed, which is to be obtained from the local government.

6.1.2 Regulatory Process for Obtaining Approvals to Construct and Operate Distribution Facilities

In order to obtain a planning authorisation, a request has to be submitted to ESTI, specifying the details of the project and providing all relevant planning documentation. If an environmental impact assessment has to be conducted (which may be the case if the project could have a substantial impact on the environment), this has to be done prior to the filing of the request. ESTI will review the request and forward it to the Cantons that are affected by the project (typically, these are the Cantons where the project is to be realised). The affected Cantons have three months to comment, and local public consultation is required during that time. Private persons that are specifically affected by the project (eg, because they own land in the perimeter of the project or because they may be affected by expropriation required to complete the project) may file objections or ask for compensation, and local municipalities may file objections to safeguard their rights. At the same time, ESTI will consult with other involved federal departments, and involve the competent valuation committee if expropriations are required. After public consultation, ESTI will attempt to resolve all objections and, if successful in doing so, will issue the authorisation. If objections cannot be resolved or if federal offices involved have dissenting opinions that cannot be settled, ESTI will forward the matter to the Federal Office for Energy to render a decision. The purpose of this planning authorisation procedure is mainly to verify whether construction projects meet the applicable safety requirements and comply with environmental law, and whether legitimate private interests are duly respected. Planning authorisations are subject to court review upon appeal.

The planning authorisation procedure shall not exceed two years, but the process may take longer if appeals are to be resolved.

6.1.3 Terms and Conditions Imposed in Approvals to Construct and Operate

The planning authorisation will typically state that construction work may only be initiated once the authorisation has become legally binding (ie, after the expiry of the deadline to file appeals), that it will expire if construction is not initiated within three years of the authorisation becoming legally binding, and that the facilities have to be constructed in accordance with the approved plans. It will also include con-
ditions to be observed, particularly in relation to the implementation of measures to ensure safety, and the protection of nature and the environment. Where expropriations are needed, the relevant terms and conditions will be detailed in the planning authorisation.

6.1.4 Proponent’s Eminent Domain, Condemnation or Expropriation Rights

The right to expropriation may be granted to the project owner as part of the grant of the planning authorisation to construct the distribution facility. However, this right may only be claimed if and to the extent that it is proportionate in view of the project at issue. Land owners have to be fully compensated for the expropriated rights.

The process for obtaining expropriation rights is mainly regulated in the Expropriation Act. The process is initiated by the filing of the request to obtain the planning authorisation, and it will be included in the respective process. Compensation claims are reviewed by a valuation committee, which will hold a hearing with the project owner and the land owner and try to negotiate an agreement between the parties. If no agreement can be reached, the competent valuation committee will decide on the amount of the compensation. Decisions are subject to court review upon appeal.

6.1.5 Distribution Service Monopoly Rights

The Energy Supply Act stipulates that Cantons determine – in a non-discriminatory and transparent manner – which distribution network operators are active in their jurisdiction, and which geographic area of the Canton each of these operators covers. The relevant laws implementing this federal requirement are cantonal laws, which may differ from Canton to Canton. Despite there being a trend of local network operators co-operating and merging with others, many municipalities still maintain their own local distribution network operator; these are typically local utilities that own local grids and supply electricity, water and gas. The relevant local network operator is responsible for the construction and operation of the local distribution network. As a result, there is only one distribution network infrastructure in place.

Nevertheless, the market has been partially liberalised, and local distribution network operators only have a limited monopoly right in respect of end-customers consuming less than 100MWh per year. These end-customers can only procure electricity from the local distribution network operator, not from a third party. Thus, local network operators have the monopoly to deliver electricity to the ‘small’ end-customers and, in turn, are obligated to supply the requested quantity of electricity.

The market for end-customers consuming at least 100MWh per year was liberalised a few years ago. Such ‘large’ end-customers may freely choose from whom they procure electricity. To enable competition, local network operators are obligated to transmit electricity supplied by third-party suppliers through their network, and to grant non-discriminatory access to their network for such purpose. Exceptions may apply – for instance, if the distribution network operator can demonstrate that the safe operation of the network is at stake. In consideration for the transmission, the distribution network operator may charge a reasonable, cost-based fee to the end-customer. Disputes concerning these transmission rights and the fee payable in consideration are decided by ElCom.

6.2 Regulation of Distribution Service, Charges and Terms of Service

6.2.1 Principal Laws Governing the Provision of Distribution Service, Regulation of Distribution Charges and Terms of Service

On the federal level, rules governing the provision of electricity distribution service are included in the Energy Act and the Electricity Supply Act. The most important requirements are as follows.

Distribution network operators have to ensure that they supply the requested quantity of electricity at reasonable prices to end-customers located within their area of operation at all times, as well as to end-customers that procure electricity from a third-party supplier.

Distribution network operators have to comply with declaration obligations that require them to declare quantity, place of production and sources of energy of the electricity supplied to customers, so they have to obtain certificates of origin for the electricity they procure and need to validate such certificates as they supply electricity to customers. This requires utilities to account for the origin of the electricity they procure and supply to customers. The relevant provisions are enforced by Pronovo, the subsidiary of Swissgrid to which certain powers under the Energy Act are delegated.

Distribution network operators have to accept and adequately compensate electricity that is fed into their network and generated from renewable energy sources or from wholly or partially fossil fuel-fired combined heat and power plants, provided that the relevant generation facility does not exceed an output of 3MW or an annual production (net of electricity consumed at the generation facility) of 5,000MWh. The compensation and further details are to be agreed in a contract between the generator and the network operator. If an agreement cannot be reached, the default provision of the Federal Act on Energy stipulates that the compensation for electricity from renewable energy sources is to be
determined based on the cost the operator would have had to pay for the procurement of equivalent electricity, and for electricity generated by fuel-fired combined heat and power plants based on the market price at the time when the electricity is fed into the network. Disputes are decided by ElCom.

Distribution network operators may charge a cost-based fee for network use, which covers costs for the construction, operation and maintenance of their own network as well as the fee they have to pay to other network operators through whom they procure electricity. At the very end, the cumulative network usage fees will be charged to and borne by the end-customer.

Further relevant provisions may be included in cantonal law and local regulations governing the operation of local utilities.

6.2.2 Establishment of Distribution Charges and Terms of Service

The distribution system charges are cost-based (taking into account the cost of constructing, operating and maintaining the transmission network) and cover the cost of the usage of the network and the provision of ancillary services. Fees charged to the end-customer need to reflect the actual cost caused by the relevant end-customer. Disputes on distribution charges are subject to review by ElCom.

The terms of service of local utilities are usually determined by local regulation, as the utilities are typically owned by the local government. Terms of service applicable among the various distribution network operators are to be agreed between them, taking into account that each of them is obligated to grant non-discriminatory access to third parties.