

Environmental and Social Safeguard Standards

Of Foreign Environmental Cooperation Center

Resource Efficiency and Pollution Prevention

Chapter I Policy

1. Projects shall explore technically and financially feasible measures for the efficient use of energy, water, and other resources and material inputs. Such measures will integrate the principles of cleaner production¹ into product design and production processes with the objective of conserving raw materials, energy, and water. Where benchmarking data are available for resource intensive projects, a comparison to establish the relative level of efficiency will be undertaken.

2. Projects shall implement technically and financially feasible options to reduce project-related GHG emissions, including alternative locations, the use of renewable or low-carbon energy sources, sustainable agriculture, forestry and livestock management practices.

3. If a project is expected to produce significant quantities of GHG², the emission shall be tracked and reported in accordance with internationally recognized methodologies and good practice³.

4. When the project is a potentially significant consumer of water, measures shall be taken to ensure that it does not have significantly adverse impacts. The project should consider alternative water supplies or water consumption offsets to reduce the total demand for water resources within the available supply.

5. Projects shall avoid or minimize the release of pollutants including wastes, hazardous materials and pesticides. This applies to the release of pollutants to air, water, and land due to routine, non-routine, and accidental circumstances. Pollution prevention and control technologies and practices consistent with international good practice⁴ shall be applied during the entire project cycle.

¹ Cleaner production means “the continuous application of measures for design improvement, utilization of clean energy and raw materials, the implementation of advanced processes, technologies and equipment, improvement of management and comprehensive utilization of resources to reduce pollution at source, enhance the rates of resource utilization efficiency, reduce or avoid pollution generation and discharge in the course of production, provision of services and product use, so as to decrease harm to the health of human beings and the environment.” (Cleaner Production Promotion Law of the People's Republic of China, Chapter 1 Article 2)

² The significant threshold to be considered for these requirements is generally more than 25,000 tonnes of CO₂-equivalent per year for the aggregate emissions of direct and indirect sources. The quantification of emissions should consider all significant sources of GHG emissions, including non-energy related sources such as methane and nitrous oxide, among others.

³ Estimation methodologies are provided by the Intergovernmental Panel on Climate Change, various international organizations, and relevant national agencies.

⁴ As reflected in internationally recognized standards such as the World Bank Group’s

6. To address adverse risks and impacts on existing ambient conditions (such as air, surface water, groundwater, and soils), a number of factors will be considered, including the finite assimilative capacity of the environment, existing and planned land use, existing ambient conditions, the project's proximity to ecologically sensitive or protected areas, the potential for cumulative impacts with uncertain and irreversible consequences, and strategies for avoiding and minimizing the release of pollutants.

7. Projects shall avoid the generation of hazardous and nonhazardous waste materials. Where waste generation cannot be avoided, projects shall reduce the generation of waste, and recover and reuse waste in a manner that is safe for human health and the environment. Where waste cannot be recovered or reused, it will be treated, destroyed, or disposed of in an environmentally sound manner that includes the appropriate control of emissions and residues resulting from the handling and processing of the waste material. If the generated waste is considered hazardous, reasonable alternatives for its environmentally sound disposal will be adopted while adhering to the limitations applicable to its transboundary movement. When hazardous waste disposal is conducted by third parties, the project will use contractors that are reputable and legitimate enterprises licensed by the relevant government regulatory agencies and, with respect to transportation and disposal, obtain chain of custody documentation to the final destination.

8. Projects shall consider the use of less hazardous substitutes for such chemicals and materials and will avoid the manufacture, trade, and use of any substances listed under the Stockholm Convention on Persistent Organic Pollutants, or other chemicals and hazardous materials subject to international bans or phase-outs due to their high toxicity to living organisms, environmental persistence, potential for bioaccumulation, or potential for depletion of the ozone layer.

9. Projects shall avoid or, when avoidance is not feasible, minimize and control release of hazardous materials resulting from their production, transportation, handling, storage and use. Where avoidance is not possible, the health risks, including potential differentiated effects on men, women and children, of the potential use of hazardous materials will be addressed in the social and environmental assessment.

Chapter II Institutional Structures

Environmental, Health and Safety Guidelines. These standards contain performance levels and measures that will normally be acceptable and applicable to projects.

FECO has designated a staff person as the institutional focal point for resource efficiency and pollution prevention. This staff will be responsible for the coordination, implementation and oversight of FECO's standard on resource efficiency and pollution prevention.

FECO maintains a pool of external specialists in the area of resource efficiency and pollution prevention, taken from the field of cleaner production, environmental management, chemistry and related disciplines, which will perform specialized functions in the implementation of FECO's standard on resource efficiency and pollution prevention.

Chapter III Guidelines

Section I Resource Efficiency

1. Energy Use

When the project is a potentially significant user of energy⁵, in addition to applying the resource efficiency requirements of this standard, the proponent should comply with relevant provisions of "Cleaner Production Promotion Law of the People's Republic of China" (see Annex I for Excerpts of Law of the People's Republic of China on Promoting Cleaner Production) and "Energy Conservation Law of the People's Republic of China" (see Annex II for Excerpts of Energy Conservation Law of the People's Republic of China), and will adopt measures specified in the EHSGs⁶ to optimize energy usage, to the extent technically and financially feasible.

Technical feasibility is based on whether the proposed measures and actions can be implemented with commercially available skills, equipment, and materials, taking into consideration prevailing local factors such as climate, geography, demography, infrastructure, security, governance, capacity, and operational reliability. Financial feasibility is based on relevant financial considerations, including relative magnitude of the incremental cost of adopting such measures and actions compared to the

⁵ Sectors that typically make significant use of energy include, for example, industrial production, resource extraction, water pumping, or transport. However, projects in other sectors may also be significant users of energy; these include waste management, agriculture, education, and health.

⁶ https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/ehs-guidelines

project's investment, operating, and maintenance costs, and on whether this incremental cost could make the project nonviable for the proponent.

2. Water Use

When the project is a potentially significant user of water or will have potentially significant impacts on water quality, in addition to applying the requirements of this standard, the proponent should comply with relevant provisions of "Water Law of the People's Republic of China" (see Annex III for Excerpts of Water Law of the People's Republic of China), and will adopt measures, to the extent technically and financially feasible, that avoid or minimize water usage so that the project's water use does not have significant adverse impacts on communities, other users, and the environment.

Examples of projects that could involve significant use of water include agriculture, water-cooled thermal power plants, mining, urban water supply, water distribution, and groundwater abstraction projects. Water "use" generally refers to withdrawals or applications; water "consumption" refers to water no longer available in the system due to evaporative or transpiration "losses" from use in agriculture, cooling or manufacturing processes, landscaping, or net consumption by people and livestock.

When a project is a significant user of water, or contributes to depletion of water resources to the extent that third parties' ability to access water is adversely affected, efforts should be made to reduce water use to a level at which these adverse impacts are avoided or at least mitigated. It is also important to consider impacts on water quality. Water quality can be affected by contaminated wastewater and refuse associated with projects involving construction, agriculture, and industry, among others. Suggested measures to minimize impacts on water quality include reducing or eliminating on-site and post-project runoff of polluted water, controlling sources of pollutants, and treating contaminated water before discharge into drainage systems or receiving waters, in a manner consistent with GIIP or other compatible good practices. Mitigation measures to reduce adverse impacts on water quality and availability (quantity and timing) for other uses include avoiding the impacts by re-siting the project, applying technical and policy resource efficiency measures to reduce system impacts such as reverse osmosis-based water recovery, dry cooling, minimizing evaporation/evapotranspiration, improving irrigation systems as well as irrigation scheduling, including use of recycled urban water, promoting soil-water conservation measures (such as conservation tillage and incorporation of crop residue where

appropriate), and in terms of water quality, promoting rational use of fertilizers and better management of animal wastes.

3. Raw Material Use

When the project is a potentially significant user of raw materials, in addition to applying the requirements of this standard, the proponent should comply with relevant provisions of “Circular Economy Promotion Law of the People's Republic of China” and will adopt measures specified in the EHSs and other GIIP to support efficient use of raw materials, to the extent technically and financially feasible.

Efficiency in use of raw materials and, thereby, efficiency in costs and labor, can be achieved by eliminating and/or minimizing the quantity used in the project, selecting the most appropriate raw materials possible, and reducing and recycling wastes. Projects that usually make significant use of raw materials include road construction, housing and urban development, logging, mining, and chemical manufacture and processing. Measures to eliminate, substitute, or reduce raw material use in various phases of project development may be found in the General EHSs, and in the Industry Sector Guidelines⁷.

Section II Pollution Prevention

The project will avoid the release of pollutants or, when avoidance is not feasible, minimize and control the concentration and mass flow of their release using the performance levels and measures specified in national or local environmental standards, technical guidelines or specifications or the EHSs, whichever is most stringent. This applies to the release of pollutants to air, water, and land due to routine, nonroutine, and accidental circumstances, and with the potential for local, regional, and transboundary impacts. The project should comply with relevant provisions of “Measures for Pollutant Discharge Permitting Administration” promulgated by Order No. 48 of the Former Ministry of Environmental Protection of China.

When developing a project that is expected to produce potentially significant emissions of pollutants, the existing background ambient levels are evaluated in the environmental and social assessment (ESA) to determine if they comply with the relevant ambient quality guidelines and/or standards. Using the mitigation hierarchy, it is important to develop measures to avoid or minimize emissions of pollutants into

⁷https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/ehs-guidelines

sensitive or already degraded water, air, or soil environments. Proximity to communities/residential areas should also be considered; the impacts of pollutants on local communities should be addressed in the project's ESA.

Where a project involving the modernization or retrofit of an existing facility is expected to produce potentially significant emissions of pollutants, the current ambient conditions are evaluated to determine if they meet the relevant ambient quality standards. If they exceed the standards, and the existing facility is a major source of emissions, the feasibility of reducing emissions is considered with the aim of developing and implementing measures that improve current ambient conditions. This is undertaken as part of the project's ESA.

1. Management of air pollution

The project should comply with relevant provisions of “Atmospheric Pollution Prevention and Control Law of the People's Republic of China (2018 Amendment)”, and the ESA shall refer to “Technical guidelines for environmental impact assessment—Atmospheric environment”.

The ESA will include an estimate of the annual gross GHG emissions over the life of the project, where technically and financially feasible. To avoid double counting, gross GHG emissions are calculated only for direct GHG emissions (scope 1) from the project and further prorated according to the share of the total costs that the project finances. Examples of sectors that have potentially significant emissions include energy, transport, heavy industry, building materials, agriculture, forest products, and waste management. Certain projects are designed to produce GHG savings, and their emissions are not considered significant, or calculating their gross GHG emissions is not considered technically feasible. These include reduction and control options such as: (a) enhancement of demand-side energy efficiency and reduction of system losses in transmission and distribution; (b) protection and enhancement of sinks and reservoirs of GHGs; (c) promotion of sustainable forms of agriculture and forestry; (d) promotion, development, and increased use of solar and wind energy; and (e) reduction of fugitive methane emissions or recovery of methane emissions for use in waste management. Product changes can also bring about significant reductions in GHG emissions, with potential cost and energy savings as well.

2. Management of water pollution

The project should comply with relevant provisions of “Water Pollution

Prevention and Control Law of the People's Republic of China (2017 Revision)”, and the ESA shall refer to “Technical guidelines for environmental impact assessment—groundwater environment” and “Technical guidelines for environmental impact assessment surface water environment”.

3. Management of hazardous and nonhazardous wastes

The project should comply with relevant provisions of “Law of the People's Republic of China on the Prevention and Control of Environment Pollution Caused by Solid Wastes (2020 Revision)”, and the ESA shall refer to “Guidelines for environmental impact assessment of hazardous wastes for construction projects”.

It is important to apply the mitigation hierarchy to the management of wastes during all phases of a project, including design, construction, operation, closure, and decommissioning. The ESA determines the source, type, quantity, and risks associated with the waste likely to be generated by the project and, if such waste cannot be avoided, proposes appropriate measures to minimize, reduce and, where not possible, mitigate, the risks associated with the waste. Environmentally sound and safe management of wastes and the obligations to manage such waste are included in relevant contractual arrangements of the project, particularly the technical design and construction contracts. For further information on the management of hazardous and nonhazardous wastes, consult the EHSs.

Actions that avoid or minimize the creation of nonhazardous wastes and ensure the recycling, reuse, or safe disposal of such wastes generated by the project should also be included in the ESA.

4. Management of chemicals and hazardous materials

Chemicals and hazardous materials to be avoided are identified in relevant international conventions, such as: the Stockholm Convention on Persistent Organic Pollutants; the Rotterdam Convention on the Prior Informed Consent for Certain Hazardous Chemicals and Pesticides in International Trade; the Montreal Protocol on Substances that Deplete the Ozone Layer, including the Kigali Amendment to the Montreal Protocol, the Minamata Convention on Mercury; and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. The relevant international conventions will be considered in the ESA as they relate to the project. The requirements of these conventions, and their protocols, and agreements are addressed, as relevant, in any proposed mitigation measures.

Opportunities to use nonhazardous substitutes are considered throughout the life

of the project, especially when the hazards of the exposure or release of the materials cannot be easily prevented under normal use or disposal. The effectiveness, compatibility, and cost of the substitute, and existing measures to adequately control its use and disposal, are considered when determining its suitability for use under the project. Examples of means to minimize and control the use of hazardous materials are found in the EHSGs.

Nutrient pollution is a challenging environmental, health, and economic problem. Nitrogen and phosphorus occur naturally and play a major role in the health of aquatic and other ecosystems. However, when these elements enter the environment (air and water bodies) in excessive amounts through runoff or various other human activities, they have the potential to pollute the air, groundwater, and waterways, causing serious environmental, health, and economic problems. The primary sources of nutrient pollution are agriculture (fertilizer and animal manure), runoff from storm- and wastewater, use of disinfectants and home cleaning products, and use of fossil fuels. Good agricultural and effluent management practices help reduce potential nutrient pollution and promote efficient use of plant nutrients (for example, nutrient management, conservation tillage, cover crops, buffers, water treatment, drainage management, watershed management, and reuse and recycling of nutrient loaded wastewater).

Chapter IV Procedures

I. Stage of Eligibility Assessment

Project proponents need to explain if the proposed project involves resource efficiency and pollution prevention issues. This information will be used by the institutional focal point to determine whether or not the standard on resource efficiency and pollution prevention is triggered in the proposed project.

II. Stage of the Project Document Assessment

If the standard on resource efficiency and pollution prevention is triggered, the project will identify risks and impacts and propose mitigation measures in accordance with the mitigation hierarchy. The above mentioned assessment can be conducted as part of the ESA. Consultation and disclosure will be part of the ESA document preparation process, and affected parties and stakeholders will be notified of the decision to develop an ESMP and will be appropriately consulted in its formulation.

Annex I

Excerpts of Law of the People's Republic of China on Promoting Cleaner Production

Chapter III Implementation of Cleaner Production

Article 18 As for newly built, reconstructed and expanded projects, environmental impact assessments should be made; the use of raw materials, resource consumption, comprehensive utilization of resources, the generation and disposal of pollutants, etc. should be analyzed and demonstrated; and priority should be given to adopting the cleaner production technologies, processes and equipment that have high resource utilization rate and generate less pollutants.

Article 19 Enterprises should, in the process of technological transformation, adopt the following cleaner production measures:

- (1) Using non-toxic and harmless raw materials or low-toxicity and low-harm raw materials to replace the raw materials that have great toxicity and serious harm;
- (2) Using the processes and equipment that have high resource utilization rate and generate less pollutants to replace the processes and equipment that have low resource utilization rate and generate a lot of pollutants;
- (3) Making comprehensive utilization or recycling of wastes, waste water and waste heat generated during the production;
- (4) Adopting the pollution prevention and control technologies that can meet the national or local standards for discharge of pollutants and the indicators for controlling the total amount of pollutants discharged.

Article 20 As for the design of products and packaging materials, the effects thereof upon human health and the environment throughout their lifecycles should be taken into account, and priority should be given to selecting the ones that are non-toxic, harmless, easy to be degraded or easy to be recycled.

Enterprises should package their products in a reasonable manner; the materials, structure and cost of the packaging should be commensurate with the quality, specifications and cost of the inner products, so as to reduce the generation of packaging wastes; and no excessive packaging is allowed.

Article 21 The enterprises that manufacture large electromechanical equipment, motorized vehicles and other products designated by the industry department under the State Council should, place a mark of standard of the material composition on the main components of their products in accordance with the technical specifications formulated by the standardization department under the State Council or its authorized agencies.

Article 22 Agricultural producers should use chemical fertilizers, pesticides, agricultural films and feed additives in a scientific manner, and improve planting and breeding technologies, so as to produce high-quality and harmless agricultural products, recycle the wastes generated from agricultural production and prevent agricultural environmental pollution.

It is prohibited to use toxic or hazardous wastes as fertilizers or to creating farmlands.

Article 23 Service enterprises such as catering, entertainment and hotel businesses should adopt technologies and equipment that are conducive to energy and water conservation and other environmental protection purposes, and reduce or stop the use of consumer goods that waste resources and pollute the environment.

Article 24 As for construction projects, the architectural design schemes, construction and decoration materials, construction structures, fittings and equipment used should be conducive to the environmental and resource protection purposes, such as energy and water conservation.

The construction and decoration materials must conform to the national standards. The production, sales and use of construction and decoration materials with toxic or harmful substances that exceed the national standards should be prohibited.

Article 25 In the prospecting and mining of mineral resources, the methods and technologies that are conducive to making rational use of resources, protecting environment and preventing pollution should be adopted, so as to improve the level of resource utilization.

Article 26 Enterprise should recover and utilize the wastes, waste heat, etc. generated in the processes of production and providing services by themselves or transfer them to other enterprises and individuals that have the conditions for utilization, as far as it is economically and technically feasible to do so.

Article 27 Enterprises should monitor the consumption of resources and the generation of wastes in the process of production and providing services, and carry out the cleaner production audits of production and services as needed.

A compulsory cleaner production audit should be carried out in an enterprise under any of the following circumstances:

(1) The enterprise whose discharge of pollutants has exceeded the national or local discharge standards, or has exceeded the indicators for controlling the total amount of key pollutants discharged, though not exceeding the national or local discharge standards;

(2) The enterprise whose energy consumption has exceeded the standard for energy consumption limits per unit product and has constituted high energy consumption;

(3) The enterprise that uses toxic or harmful raw materials for production or discharges toxic or harmful substances in the process of production.

The enterprises whose discharge of pollutants has exceeded the national or local discharge standards should treat the pollutants in accordance with the provisions of the relevant laws on environmental protection.

The enterprises that carry out compulsory cleaner production audits should report the audit results to the departments in charge of comprehensive coordination of cleaner production and the environmental protection departments of the local people's governments at or above the county level, and release the audit results through major local media for supervision by the public, with the exception of those involving business secrets.

The relevant departments of the local people's governments at or above the county level should supervise the implementation of compulsory cleaner production audits of enterprises and, if necessary, organize the assessment and acceptance of the performance of the enterprises' cleaner production, and the expense needed should be incorporated into the government budget at the corresponding level. The departments or institutions that undertake the assessment and acceptance work should not collect fees from the enterprises subject to the assessment and acceptance.

The specific measures for the implementation of cleaner production audits should be formulated by the department in charge of comprehensive coordination of cleaner production and the environmental protection department under the State Council in cooperation with other relevant departments under the State Council.

Article 28 Enterprises other than those specified in Article 27 (2) of this Law may, on a voluntary basis, enter into agreements for further saving resources and reducing pollutants discharged with the departments in charge of comprehensive coordination

of cleaner production and the environmental protection departments. The departments in charge of comprehensive coordination of cleaner production and the environmental protection departments should make public the names of the enterprises and their achievements in conserving resources and preventing and controlling pollution through major local media.

Article 29 Enterprises may, on a voluntary basis and in accordance with the relevant national provisions on environmental management system and other certifications, entrust a certification authority approved by the department in charge of supervision and administration of certification and accreditation under the State Council to perform the certification, so as to improve the level of cleaner production.

Annex II

Excerpts of Energy Conservation Law of the People's Republic of China (2018 Amendment)

(Adopted at the 28th Session of the Standing Committee of the Eighth National People's Congress on November 1, 1997, revised at the 30th Session of the Standing Committee of the Tenth National People's Congress of the People's Republic of China on October 28, 2007, and amended for the first time in accordance with the Decision of the Standing Committee of the National People's Congress on Amending Six Laws including the Energy Conservation Law of the People's Republic of China at the 21st Session of the Standing Committee of the Twelfth National People's Congress on July 2, 2016, and amended for the second time in accordance with the Decision of the Standing Committee of the National People's Congress to Amend Fifteen Laws Including the Law of the People's Republic of China on the Protection of Wild Animals adopted at the 6th Session of the Standing Committee of the Thirteenth National People's Congress of the People's Republic of China on October 26, 2018)

Chapter III Rational Utilization of Energy and Energy Conservation

Section 1 General Rules

Article 24 Energy consumption units shall strengthen energy conservation management, formulate and implement energy conservation plans and technical measures of energy conservation to reduce energy consumption in line with the principle of rational utilization of energy.

Article 25 Energy consumption units shall establish an energy conservation target responsibility system, and shall reward those individuals and entities who have made achievements in energy conservation.

Article 26 Energy consumption units shall regularly conduct energy conservation education and on-the-job training.

Article 27 Energy consumption units shall strengthen energy measuring management by installing and utilizing, in accordance with relevant regulations, energy measuring instruments that are standardized in accordance to law. Energy consumption units shall establish a system of energy consumption statistics and energy utilization

analysis to carry out categorized measurement and statistics for consumption of energy of all kinds, and ensure the statistical data of energy consumption is accurate and complete.

Article 28 Energy production and operation units shall not provide their own employees with energy resources free of charge. No units shall practice any contractual lump-sum fee system for energy consumption.

Section 2 Industrial Energy Conservation

Article 29 The State Council and the people's governments of provinces, autonomous regions and municipalities directly under the central government shall promote optimal exploitation and utilization as well as rational deployment of energy resources, press forward with adjustment of the industrial structure in favor of energy conservation, and optimize the structure of energy consumption and the distribution of enterprises.

Article 30 The department in charge of energy conservation, in conjunction with other relevant departments under the State Council, shall formulate energy conservation technology policies for major energy-consuming industries such as electric power, steel, nonferrous metal, building materials, petroleum processing, chemical engineering and coal industries, and push forward energy-conservation technological upgrading of enterprises.

Article 31 The state encourages industrial enterprises to use such equipment as highly efficient energy-saving electric motors, boilers, furnaces, turbines and pumps, and to adopt such technologies as combined generation of heat and power, utilization of afterheat and excess pressure, clean coal, and advanced monitoring and control of energy consumption.

Article 32 Power grid enterprises shall practice, in accordance with provisions on energy-saving generation and dispatching control established by the relevant department under the State Council, parallel operation of power grids together with clean and highly efficient combined generation of heat and power, generation units powered by afterheat or residual pressure or generation units based on comprehensive utilization of other resources in compliance with the regulations. Relevant regulations of the state shall apply to the pricing of grid electricity.

Article 33 Construction of new coal-fired generating units, oil-fired generating units or coal-based thermal generating units failing to meet the relevant requirements of the state shall be banned.

Section 3 Construction Energy Conservation

Article 34 The competent in charge of construction under the State Council is responsible for supervision and administration of building energy conservation nationwide. The competent authorities in charge of construction under the people's governments above the county level are responsible for supervision and administration of building energy conservation in regions under their respective jurisdictions. The competent authorities in charge of construction shall work together with the departments in charge of energy conservation under the people's governments above the county level to formulate plans for building energy conservation in regions under their respective jurisdictions. Building energy conservation planning shall include plans for energy conservation transformation of existing buildings.

Article 35 The construction, designing, engineering and supervisory entities of construction engineering projects shall observe the standards of building energy conservation. For construction engineering projects that fail to meet the requirements of building energy conservation, the competent construction authorities shall not approve the start of their new construction; those under construction shall be suspended and ordered to make correction within a prescribed deadline; and those completed shall not be sold or put into use. The construction authorities in charge shall strengthen supervision and check-ups of the implementation of energy conservation standards by construction engineering projects under construction.

Article 36 In house sales, housing development companies shall expressly show to possible buyers such information as energy conservation measures of the houses or warranty period for thermal insulation, record such information in the property purchase contracts, quality guarantees and instruction manuals, and shall be responsible for the truthfulness and accuracy of the information.

Article 37 Indoor temperature control shall be applied to public buildings that use air-conditioning for heating and cooling. The specific measures shall be formulated by the competent authorities in charge of construction under the State Council.

Article 38 The state shall take measures to apply the system of household-based heat metering and heat-usage-based fee collection to buildings with centralized heat supplies in several steps. In buildings newly constructed or existing buildings to be transformed, heat metering appliances, indoor temperature controls and heat supply control devices shall be installed in accordance with established regulations. The

specific measures shall be formulated by the competent authorities in charge of construction together with other departments concerned under the State Council.

Article 39 Departments concerned of the people's governments above the county level shall strengthen electricity conservation management in urban areas, and strictly control energy consumption by public facilities and decorative skyline lighting of large buildings.

Article 40 The state encourages the adoption of energy-saving building materials, like new walling materials, and energy-saving equipment in the construction of new buildings and the transformation of existing buildings, and the installation and utilization of systems of renewable energy, such as solar energy.

Section 4 Transport Energy Conservation

Article 41 The departments in charge of communication and transport under the State Council are, in accordance with their respective functions and duties, responsible for energy conservation supervision and administration in their respective sectors nationwide. The relevant departments in charge of communication and transport shall join efforts with the department in charge of energy conservation under the State Council in formulating energy conservation plans for their respective sectors.

Article 42 The State Council and its relevant departments shall direct and promote the coordinated development and efficient connectivity of all transport modes, optimize the transport structure, and build an energy-saving integrated transport system.

Article 43 The people's governments above the county level shall give priority to the development of public transport, increasing investment in public transport, improving public transport services and encouraging the utilization of public transport; and encourage the use of non-motorized vehicles.

Article 44 The relevant transport departments under the State Council shall strengthen organization and management of the transport and communication sector, and guide road, water and air transport enterprises to enhance their organizational structure and intensive level to improve energy utilization efficiency.

Article 45 The state encourages the development, production and use of energy-saving and environment-friendly automobiles, motorcycles, railway locomotives, boats and ships and other transport vehicles, and implements a system of scrapping and upgrading old and obsolete transport vehicles. The state encourages to develop and promote the use of clean fuels and alternative fuels of oil.

Article 46 The relevant departments under the State Council shall formulate limits for

fuel consumption by commercial transport vehicles and vessels; those that fail to meet the requirements shall not be put into operation. The relevant departments in charge of transport and communication under the State Council shall strengthen supervision and administration over fuel consumption monitoring of commercial transport vehicles and vessels.

Section 5 Public Institution Energy Conservation

Article 47 Public institutions shall practice strict economy, curb waste, and take lead in using energy-saving products and equipment, so as to improve energy utilization efficiency. For the purposes of the Law, the term “public institutions” refers to state organs, institutions and social organizations that are wholly or partially funded by fiscal revenues.

Article 48 The State Council and the departments in charge of general affairs of the people’s governments above the county level shall, in cooperation with other relevant departments at corresponding levels, formulate and organize the implementation of energy conservation plans for the public institutions at corresponding levels. Energy conservation planning for public institutions shall include plans for energy conservation transformation of their buildings.

Article 49 Public institutions shall develop annual energy conservation targets and implementation plans, strengthen energy consumption measurement and monitoring, and report to the departments in charge of general affairs of the people’s governments at corresponding levels on energy consumption of the prior year. The State Council and the departments in charge of general affairs of the people’s governments above the county level shall, together with other relevant departments at corresponding levels, establish energy consumption quotas for public institutions at corresponding levels in accordance with their limits of authority. The financial departments shall establish the standards of expenses on energy consumption based on these quotas.

Article 50 Public institutions shall strengthen management of their own systems of energy consumption, and ensure that the operation of their systems of energy consumption comply with relevant state standards. Public institutions shall undergo energy auditing in accordance with established regulations, and take measures to improve energy utilization efficiency in view of the energy auditing results.

Article 51 In procuring energy-consuming products and equipment, public institutions shall give priority to those products and equipment listed in the catalogues of energy-saving products and equipment for government procurement. The

procurement of products and equipment that are to be eliminated as clearly ordered by the state shall be banned. The government procurement catalogues of energy-saving products and equipment shall be formulated and published by the departments in charge of government procurement of the people's governments at/ above the provincial level together with other relevant departments at corresponding levels.

Section 6 Energy Conservation of Key Energy Consumption Units

Article 52 The State shall strengthen energy conservation management of key energy consumption units. The following are key energy consumption units:

1. Energy consumption units whose aggregate annual energy consumption exceeds over 10,000 tons of standard coal; and
2. Units whose annual energy consumption as designated by the relevant departments under the State Council or the departments in charge of energy conservation under the people's governments of the provinces, autonomous regions and municipalities directly under the central government exceeds 5,000 tons but below 10,000 tons of standard coal. The measures of energy conservation management for key energy consumption units shall be formulated by the department in charge of energy conservation together with other departments concerned under the State Council.

Article 53 Key energy consumption units shall report annually to the departments in charge of energy conservation on their energy utilization in the prior year. The report on energy utilization shall cover such issues as energy consumption, efficiency of energy utilization, progress made in fulfilling the established energy conservation targets, analysis of the benefits of energy conservation and energy-saving measures.

Article 54 The departments in charge of energy conservation shall review the reports submitted by the key energy consumption units on their energy utilization. For those key energy consumption units whose energy conservation management systems are not well established, or whose energy conservation measures are not effectively implemented, or whose energy utilization efficiency is low, the departments in charge of energy conservation shall make on-site investigations, organize and carry out tests of the energy efficiency of their energy-consuming equipment, and order them to undergo energy audit and come out with a written request for rectification and improvement within a prescribed deadline.

Article 55 Key energy consumption units shall establish posts for energy management, employ persons responsible for energy management from staff members who have professional knowledge and practical experience in energy conservation,

and technical titles above the intermediate level, and file their information with the departments in charge of energy conservation and other relevant departments for the record. Those at the helm in energy management shall be responsible for analyzing and evaluating the energy utilization in the units, organize the drafting of the units' reports on energy utilization, and come up with and implement the measures of improvement for energy conservation thereof. The persons responsible for energy management shall receive training in energy conservation.

Annex III

Excerpts of Water Law of the People's Republic of China (Revision)

(Adopted at the 24th Meeting of the Standing Committee of the Sixth National People's Congress on January 21, 1988; revised at the 29th Meeting of the Standing Committee of the Ninth National People's Congress on August 29, 2002 and promulgated by Order No.74 of the President of the People's Republic of China on August 29, 2002. Amended on August 27, 2009)

Chapter III Water Resources Development and Utilization

Article 20 In developing and utilizing water resources, the principles of combining promotion of what is beneficial with elimination of what is harmful, taking into account the interests of the regions in both the upper and lower reaches and on both the right and left banks of a river and the interests among the relevant regions, giving full play to the overall benefits of water resources, and subordinating to the overall arrangements for flood control shall be adhered to.

Article 21 In developing and utilizing water resources, attention shall first be paid to satisfying the urban inhabitants' need of water in their daily lives, while taking into consideration the need of water in agriculture, industry and ecological environment, and the need of navigation, etc. In developing and utilizing water resources in arid and semi-arid areas, full consideration shall be given to the need of water in ecological environment.

Article 22 For diversion of water across river basins, all-round planning and scientific demonstration shall be needed, overall consideration shall be given to the need of water by both the river basins where water is diverted from and the river basins where water is diverted to, and damages to ecological environment shall be prevented.

Article 23 Local people's governments at all levels shall make rational arrangements for development and multipurpose use of water resources in light of the actual conditions of the local water resources on the principle of unified control over development of surface water and groundwater, combination of the tapping of new resources with water conservation, giving priority to water conservation, and recycling sewage water. Plans for national economic and social development and general urban plans shall be formulated and major construction projects shall geographically be distributed in such a way as to suit the local conditions of water resources and the need of flood control, and scientific demonstration shall be needed. In areas with insufficient water resources, limitations shall be set on the scale of cities and on construction of industrial, agricultural and service projects that consume large amounts of water.

Article 24 In respect of areas that are short of water resources, the State encourages the collection, development and utilization of rainwater and slightly salty water, as well as the exploitation and desalination of seawater.

Article 25 Local people's governments at various levels shall provide better guidance

in respect of irrigation, draining of waterlogged fields, and water and soil conservation, in order to promote the development of agricultural production. In areas that are prone to salinization and floodwater hazards, measures shall be taken to control or lower the groundwater level. Where rural economic collectives or their members, in accordance with law, invest in construction of waterworks on land owned by the collectives or on land contracted, they shall, on the principle of “those who invest in construction shall manage and receive the benefits”, manage and make rational use of the waterworks and the water stored. Construction of reservoirs by rural economic collectives shall be subject to approval by the administrative departments for water resources under the people’s governments at or above the county level.

Article 26 The State encourages the development and utilization of hydroenergy resources. On rivers rich in hydroenergy, multi-purpose and -cascade development shall be promoted in a planned manner. In construction of hydropower stations, attention shall be paid to protection of the ecological environment, and consideration shall, at the same time, be given to the needs of flood control, water supply, irrigation, navigation, bamboo and log rafting, fishery, etc.

Article 27 The State encourages the development and utilization of water transport resources. When having permanent dams or sluice gates built across the migration routes of aquatic life or across rivers for navigation or bamboo and log rafting, the units that launch such projects shall have facilities for the passage of fish and ships or for bamboo and log rafting built simultaneously, or take other remedial measures upon approval by the departments authorized by the State Council and, in addition, they shall make proper arrangements for protection of aquatic life, for navigation, and for bamboo and log rafting during the period of construction and water-storing and bear all the expenses incurred thereby. Where a non-navigable river or man-made waterway becomes navigable after a dam or sluice-gate is built across it, the unit that launches the project shall simultaneously have facilities built for the passage of ships or sites reserved for such facilities.

Article 28 No unit or individual may divert, intercept (store) or drain off water at the expense of public interests or another person’s legitimate rights and interests.

Article 29 The State applies a development-oriented policy with regard to construction of waterworks that involves relocation of people and, on the principle of combining compensation or subsidies given in the early stage with assistance given in the later stage, makes proper arrangements for production and daily lives of the relocated people and protects their legitimate rights and interests. Arrangements for relocated people shall be made simultaneously with the construction of the projects. The unit launching the construction project shall, on the basis of the ambient capacity of the places where people are to be located and the principle of sustainable development, work out a plan for arrangements to be made for such people in light of the local conditions, which, upon approval in accordance with law, shall be implemented through arrangement by the local people’s government concerned. Funds needed for relocation of people shall be included in the investment plan for construction of the project.

Chapter IV Protection of Water Resources, Water Areas and Waterworks

Article 30 When working out plans for development and utilization of water resources and for distribution of water resources, the administrative departments for water resources under the people's governments at or above the county level, the river basin authorities and the other departments concerned shall pay attention to maintaining a proper flow of rivers and keeping the lakes, reservoirs and groundwater at a proper water level in order to maintain the natural purification capability of the water body.

Article 31 Any unit or individual engaged in activities concerning water, such as development, utilization, conservation and protection of water resources and prevention and control of water disasters, shall follow the approved plans. Where a unit or individual that acts against the plans and thus causes the lowering of the use functions of the rivers or lakes, overexploitation of groundwater, sinking of land surface or pollution of water bodies shall bear the responsibility of bringing such phenomenon under control. Where dredging or draining of water, necessitated by mining construction of underground project, results in the lowering of groundwater level, drying up of water sources or subsidence of ground, the unit that launches the mining or the construction project shall take remedial measures, and where losses are caused to other people's lives and production, it shall compensate for the losses in accordance with law.

Article 32 The administrative department for water resources under the State Council shall, in conjunction with the administrative department for environmental protection and the relevant department under the State Council and the relevant people's governments of provinces, autonomous regions or municipalities directly under the Central Government and in line with the comprehensive river basin plans, water resources protection plans and the need of economic and social development, divide water function zones along key rivers and lakes defined as such by the State, which shall be submitted to the State Council for approval. Such zones along other rivers and lakes across provinces, autonomous regions or municipalities directly under the Central Government shall be divided by the relevant river basin authorities, in conjunction with the administrative departments for water resources, for environmental protection and other departments concerned under the people's governments of the provinces, autonomous regions or municipalities directly under the Central Government where rivers and lakes are located, which shall be examined by, and on which comments shall be solicited respectively from, the relevant people's governments of provinces, autonomous regions or municipalities directly under the Central Government, before they are further examined by the administrative department for water resources under the State Council in conjunction with the administrative department for environmental protection under the State Council, and then they shall be submitted to the State Council or the department authorized by it for approval. Water function zones along rivers and lakes other than the ones specified in the preceding paragraph shall be divided by the administrative departments for water resources under the local people's governments at or above the county level, in conjunction with the administrative departments for environmental protection and the departments concerned under the people's governments at the same

level, and shall be submitted to the people's governments at the same level or the departments they authorized for approval, and to the administrative departments for water resources and for environmental protection under the people's governments at the next higher level for the record. The administrative department for water resources under the people's government at or above the county level or the river basin authority shall, on the basis of the water quality required by a water function zone and the natural purification capacity of the water bodies of the zone, check and define the pollution-receiving capacity of the water areas there and make proposals to the administrative department for environmental protection on limitation of the total amount of pollution discharged to the said areas. The administrative departments for water resources under the local people's governments at or above the county level or river basin authorities shall monitor the quality of water in water function zones and, when discovering that the total amount of major pollutants discharged exceeds the control norm or water quality in water function zones falls short of the standard required by the use function of the water areas, promptly report the matter to the people's government concerned for taking control measures and report to the administrative departments for environmental protection in a circular.

Article 33 The State establishes a protection system for zones of drinking water sources. The people's governments of provinces, autonomous regions or municipalities directly under the Central Government shall define the drying-up of the water sources and pollution of the water bodies, for the purpose of ensuring town and county residents' safety in respect of drinking water.

Article 34 Construction of any outlet for sewage discharge in the protection zones of drinking water sources is prohibited. Construction, reconstruction or expansion of a sewage discharge outlet along rivers or lakes shall be subject to permission by the administrative department for water resources or the river basin authority that has jurisdiction over the matter, and the administrative department for environmental protection shall be responsible for examination of the written report on the impact of the construction project on the environment before giving approval.

Article 35 Where a construction project occupies water sources for agricultural irrigation or irrigation and drainage facilities, or has an adverse effect on the original water for irrigation and sources for water supply, the unit that launches the project shall take the necessary remedial measures. Where losses are caused, it shall compensate for the losses in accordance with law.

Article 36 In areas where groundwater is overexploited, the local people's governments at or above the county level shall take measures to keep exploitation of groundwater under strict control. In areas where groundwater was overexploited to a serious extent, certain areas may, upon approval by the people's governments of provinces, autonomous regions or municipalities directly under the Central Government, be defined as areas where exploitation of groundwater is prohibited or restricted. Exploitation of groundwater in coastal areas shall undergo scientific demonstration, and measures shall be taken to prevent sinking of land surface and encroachment by seawater.

Article 37 No one may throw away or pile up objects or plant forest trees or high stalk

crops in rivers, lakes, reservoirs, canals or channels, which block the passage of flood water. No one may, in areas under river course control, put up buildings or structures that block the passage of flood water, or engage in activities that adversely affect the stability of the river condition or endanger the safety of the river embankment or other activities that block the passage of flood water through the river course.

Article 38 In an area under river course control, construction of a bridge, wharf or other building or structure that blocks, spans or borders on a river, or laying of pipes or cables across a river, shall meet the flood control standard and other relevant technical requirements specified by the State, and the plans made for construction of the project shall, in accordance with the relevant provisions in the Flood Control Law, be submitted to administrative department for water resources for examination and approval. Where for the construction of a project mentioned in the preceding paragraph it is necessary to expand, rebuild, dismantle or damage the existing waterworks, the unit launching the construction project shall bear the expenses incurred by the expansion and rebuilding or compensate for the losses incurred, except where the existing works are unauthorized.

Article 39 The State applies a licensing system for sand quarrying in river courses. Measures for implementing the licensing system for sand quarrying in river courses shall be formulated by the State Council. Where sand quarrying in areas under river course control that may adversely affect the stability of the river condition or endanger safety of the dykes, the administrative departments for water resources under the relevant people's governments at or above the county level shall delimit no-quarry areas or fix no-quarry periods, which they shall make known to the general public.

Article 40 Reclaiming parts of a lake for use as farmland is prohibited. The parts already reclaimed shall be restored as parts of the lake in a planned way according to the flood control standard formulated by the State. Reclaiming parts of a river course for use as farmland is prohibited. Where it is really necessary to do that, the matter shall be subject to scientific demonstration and to permission by the administrative department for water resources under the people's government of a province, autonomous region or municipality directly under the Central Government or by the administrative department for water resources under the State Council, before it is submitted to the people's government at the corresponding level for approval.

Article 41 All units and individuals have the obligation of protecting waterworks, none of them may occupy or damage dykes, bank revetments, flood control facilities or equipment for hydrological monitoring or hydro-geological monitoring.

Article 42 Local people's governments at or above the county level shall take measures for safeguarding the waterworks within their administrative areas, especially the safety of dams and dykes, and eliminate dangers within a given time limit. The administrative departments for water resources shall strengthen supervision over the safety of waterworks.

Article 43 The State protects waterworks. The scope of management and protection of the waterworks owned by the State shall be defined according to the regulations of the State Council. The scope of management and protection of the waterworks under the

control of the administrative department for water resources under the State Council or the river basin authority shall be defined by the said department or authority, through consultation with the people's government of the relevant province, autonomous region or municipality directly under the Central Government. The scope and duty of protection for waterworks other than the ones mentioned in the preceding paragraph shall be defined in accordance with the regulations of the people's governments of provinces, autonomous regions or municipalities directly under the Central Government. Within the scope of protection for waterworks, activities such as blasting, well digging, quarrying and earth digging that may adversely affect the operation or endanger the safety of waterworks are prohibited.

Chapter V Allocation and Economical Use of Water Resources

Article 44 The administrative department for development and planning and the administrative department for water resources under the State Council are responsible for macro-allocation of the water resources nationwide. The medium and long-term plans of water supply and demand for the whole country or such plans that cover more than one province, autonomous region or municipality directly under the Central Government shall be drawn up by the administrative department for water resources under the State Council, in conjunction with the departments concerned, and shall be implemented after examination and approval by the administrative department for development and planning under the State Council. The local medium and long-term plans for water supply and demand shall, on the basis of the medium and long term plans for water supply and demand at the next higher level and in light of the actual local conditions, be drawn up by the administrative departments for water resources under the local people's governments at or above the county level, in conjunction with the departments concerned at the same level, and the plans shall be implemented after examination and approval by the administrative departments for development and planning under the people's governments at the same level. The medium and long-term plans for supply and demand of water shall be drawn up on the basis of the current supply and demand of water, plans for national economic and social development, river basin plans and regional plans and on the principle of coordinated supply and demand of water resources, comprehensive balancing of all interests, protection of ecology, strictly practicing of economy and rational development of water resources.

Article 45 For regulating runoff and storing water, and for allocating the volume of water, a river basin shall be made a unit in formulating water allocation plans in accordance with the river basin plans and the medium and long-term plans of water supply and demand. Water allocation plans and preliminary plans for water distribution under drought and emergency conditions that cover more than one province, autonomous region or municipality directly under the Central Government shall be worked out by the river basin authorities through consultation with the relevant people's governments of provinces, autonomous regions or municipalities directly under the Central Government, which shall be implemented upon approval by the State Council or the department authorized by the State Council. Other water allocation plans and preliminary plans for water distribution under drought and

emergency conditions that cover more than one administrative region shall be worked out by the same administrative department for water resources under the people's government at the next higher level through consultation with the relevant local people's governments, which shall be implemented upon approval by the people's governments which the administrative regions belong to respectively. Water allocation plans and the preliminary plans for water distribution under drought and emergency conditions shall be executed by the local people's governments concerned. Projects for development and utilization of water resources to be constructed across rivers bordering on different administrative regions shall conform to the approved water allocation plans for the river basins in question and shall be submitted by the relevant local people's governments at or above the county level to the same administrative department for water resources under the people's government at the next higher level or the relevant river basin authority for approval.

Article 46 The administrative departments for water resources under the local people's governments at or above the county level or the river basin authorities shall, on the basis of the approved water allocation plans and the predicted annual volume of in-coming water, work out annual water allocation plans and distribution plans for unified distribution of the volume of water, and the local people's governments concerned shall follow them. Annual water allocation plans for the key rivers and lakes defined as such by the State shall be incorporated into the annual plans for national economic and social development.

Article 47 The State applies a system for the use of water under which control over the total volume is combined with control over the quotas. The administrative departments for the relevant trades under the people's governments of provinces, autonomous regions and municipalities directly under the Central Government shall set quotas for water use by different trades in their administrative regions, which shall be submitted to the administrative departments for water resources and the administrative departments for quality supervision and inspection at the same level for examination and permission, before the quotas are made known to the public by the people's governments of the provinces, autonomous regions and municipalities directly under the Central Government, and are submitted to the administrative department for water resources under the State Council and the administrative department for quality supervision and inspection under the State Council for the record. The administrative departments for development and planning under the local people's governments at or above the county level shall, in conjunction with the administrative departments for water resources at the same level and on the basis of the quotas for water use, the economic and technical conditions and the volume of water available for use in their administrative regions as is determined in the water allocation plans, work out their annual plans for water use, in order to exercise control over the total volume of water to be used in their administrative regions annually.

Article 48 Any unit or individual that takes water and uses water resources directly from a river or lake or from the underground shall, in accordance with the regulations of the licensing system of the State for water-taking and the system for compensated use of water resources, apply to the administrative department for water resources or

the river basin authority for a water-taking license and pay water resources fees, in order to acquire the right to take water, except where only a small amount of water is taken for domestic use or for drinking by poultry and livestock reared outdoors or in pens.

Specific measures for implementing the licensing system for water taking and for collecting fees for management of water resources shall be formulated by the State Council.

Article 49 The use of water shall be measured and water shall be used in accordance with the approved plan for water use. For the use of water, the system shall be applied under which a fee shall be charged on the basis of the amount of water used and a progressive higher price shall be charged for the amount that exceeds the quota.

Article 50 People's governments at all levels shall promote water conserving irrigation methods and water-conserving technologies, and shall take necessary measures to prevent seepage in agricultural projects for storing and transmitting water, in order to increase the efficiency of water use in agriculture.

Article 51 For use of water in industry, advanced technology, techniques and equipment shall be applied to increase the frequency of the use of circulated water and the ratio of the use of recycled water. The State gradually eliminates the techniques, equipment and products that are outdated and are of high water-consumption. The specific list for them shall be compiled and published by the department for comprehensive administration of the economy under the State Council, in conjunction with the administrative department for water resources and the relevant departments under the State Council. Manufacturers, sellers and users in the process of production and operation shall, within a specified time limit, desist from manufacturing, selling or using the techniques, equipment and products included in the list.

Article 52 Urban people's governments shall take effective measures, as are suited to local conditions, to promote the use of water-conserving household utensils, lower the leakage rate of the urban water supply network and increase the efficiency of domestic water use; they shall pay attention to centralized treatment of sewage water in cities and encourage the use of recycled water, in order to increase the utilization ratio of recycled sewage water.

Article 53 For construction, expansion or reconstruction of a project, plans for water-conserving measures shall be worked out to build water conserving facilities in support of the project. The water-conserving facilities shall be designed, constructed and put into operation simultaneously with the principal part of the project. Water-supply enterprises and units that build their own water-supply facilities shall pay special attention to maintenance of the facilities to reduce water loss.

Article 54 People's governments at all levels shall take effective measures to improve the conditions of drinking water for town and country residents.

Article 55 Where water is supplied by waterworks, the user shall, in accordance with the regulations of the State, pay charges to the water supply unit. The price of water supply shall be fixed in accordance with the principle of compensating for the cost, gaining reasonable benefits, paying good money for good quality and fair sharing of the cost. The specific measures shall be formulated by the administrative departments

for pricing under the people's governments at or above the provincial level, in conjunction with the administrative departments for water resources or administrative departments for water supply at the same level, within the limits of their powers.