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**Code of practice for planning the development and utilization of
unconventional water sources**

非常规水开发利用规划编制规程

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4 General Principles

4.1 Planning and Positioning Unconventional water development and utilization planning, as a specialized water conservancy plan, aims to connect economic and social development planning with water conservancy strategic planning and comprehensive planning. In accordance with the overall planning, unconventional water resources will be incorporated into the unified allocation of water resources, and scientific guidance will be provided for the development, utilization and engineering planning of unconventional water resources during the planning period.

4.2 Compilation Principles

4.2.1 System planning and unified configuration Unconventional water sources should be treated as exploitable resources and incorporated into the unified allocation of water resources, taking into account the water demand for economic and social development and water resources. We should comprehensively plan the development and utilization of

various unconventional water resources, including water supply capacity and unconventional water development and utilization potential.

4.2.2 People-oriented and safe utilization Adhering to the bottom line of safety for life and ecology, and rationally determining unconventional water sources based on the requirements of water users for the quantity and quality of unconventional water. Type, usage method, and water volume configuration, etc.

4.2.3 Adapt to local conditions and make scientific plans Focusing on regions with water scarcity, sensitive water environments, and fragile aquatic ecosystems, this study leverages regional (watershed) water resource endowments and unconventional water development strategies. We should leverage our potential, adhere to the principle of economic and technological feasibility, and scientifically formulate goals and tasks for the development and utilization of unconventional water resources.

4.2.4 Overall coordination and thorough argumentation During the planning process, it is essential to collaborate with relevant departments and coordinate the implementation of the plan, strengthen argumentation and evaluation, and fully solicit opinions from relevant departments. Opinions from government departments, experts, enterprises, and institutions should be sought, and public opinions should be solicited when necessary.

4.3 Basis for Compilation The planning was based on relevant laws, regulations, policy documents, standards, specifications, and statistical bulletins concerning the development and utilization of unconventional water resources, as well as national economic data. Economic development, water resource development and utilization, and other higher-level or equivalent plans.

4.4 Program Development The planning process should include preliminary preparation, planning drafting, planning demonstration, and deliverables. (Technical aspects of unconventional water development and utilization planning) The surgical route is shown in Appendix A.

5 Preliminary Preparations

5.1 Organizational Preparation It is advisable to formulate a work plan, clearly defining work objectives, technical routes, division of labor, timelines, expected results, and organizational arrangements, and to establish a team. A technical support team and expert advisory team covering multiple fields and industries including water conservancy, economic and social development, natural resources, and ecological environment; strengthening inter-departmental cooperation. We will coordinate the efforts of all parties to jointly advance the planning process.

5.2 Technical Preparation

5.2.1 Data Collection and Analysis The focus should be on the development and utilization

of unconventional water resources, collecting basic data on hydrology and water resources, natural geography, economic and social development, ecological environment, water supply and drainage, etc. The process involves collecting basic data, information, and relevant planning outcomes, and then organizing and analyzing the collected data to verify its accuracy, reliability, and rationality. The collected data mainly includes.

- a) Relevant laws, regulations, policies, documents, standards, and specifications concerning the development and utilization of unconventional water resources;
- b) Current data on unconventional water development and utilization facilities within the planning area, including their water supply and consumption, water quality standards, and water prices;
- c) Urban water supply and drainage, reclaimed water utilization, seawater desalination, sponge city construction, and mine (well) water utilization, etc., during the planning period, involving non- Relevant planning outcomes or implementation plans for conventional water development and utilization;
- d) Surveys and statistics such as water resources surveys and assessments, water resources bulletins, water conservation reports, urban and rural construction statistical yearbooks, and environmental statistical yearbooks. data;
- e) Comprehensive water resources planning, comprehensive river basin planning, water conservation planning, water network construction planning, and water ecological environment protection planning for key river basins, etc. Resource-related planning outcomes;
- f) National economic and social development plans, territorial spatial plans, urban master plans, farmland irrigation plans, industrial development plans, and urban planning. New area planning and other economic and social planning outcomes;
- g) Other relevant data such as hydrogeological data, water quantity and quality monitoring data, and water resource development and utilization data.

5.2.2 Investigation and Research In accordance with the needs of planning, necessary field surveys, assessments, and supplementary monitoring should be conducted. This can be tailored to unconventional water use demands. We will conduct special studies on challenging issues such as development potential, the necessity and feasibility of key projects.

6.1 Current Situation and Trends

6.1.1 Regional Overview A brief description should be provided of the natural geography, hydrology and meteorology, economic and social development, industrial structure, and major planning layout within the planning area.

6.1.2 Water Resources Status A brief description of the water resources, water ecology,

and water environment within the planning area should be provided, along with an explanation of water resource supply and demand, and allocation, in conjunction with relevant water resource plans. Location and water shortage conditions.

6.1.3 Analysis and Evaluation of the Current Status of Unconventional Water

Unconventional water should be categorized according to its type, and its development (engineering construction), utilization, and management should be addressed. The situation will be analyzed and evaluated. This mainly includes the following.

a) This can be assessed based on the number and spatial distribution of unconventional water development and utilization projects, their production capacity and utilization rate, treatment processes and water quality, as well as the transmission and distribution network. The analysis explains the status of unconventional water development (engineering construction) in terms of deployment scope and length.

b) It can be categorized based on aspects such as the distribution of unconventional water resources, actual utilization volume (rate) and its changing trends, main utilization areas, and compliance with institutional policies. The analysis should explain the status of unconventional water use. The amount of direct seawater use should be described separately.

c) The status of unconventional water management can be analyzed and explained from aspects such as strategic planning, institutional policies, market mechanisms, measurement and monitoring, and risk prevention and control.

d) Based on the above analysis, summarize the main problems and causes of unconventional water development and utilization.

6.1.4 Situation Analysis The explanation should take into account regional (basin) ecological protection and high-quality economic and social development, water resource conditions, and water conservation requirements, and explain the non-conventional aspects. The necessity and urgency of water development and utilization are discussed, and the situation facing unconventional water development and utilization is analyzed.

6.2 General Requirements

6.2.1 Overall Approach The plan should be clearly defined based on the current status and challenges of unconventional water development and utilization in the region (basin), in conjunction with relevant national, industry, and local requirements. The guiding principles and basic principles of the compilation.

6.2.2 Planning Scope and Horizontal Year

6.2.2.1 The planning scope needs to comprehensively consider the areas (basins) involved in unconventional water supply and demand, as well as the areas (rivers) that may be