

**GENERAL INSTITUTE OF WATER RESOURCES  
AND HYDROPOWER PLANNING AND DESIGN  
MINISTRY OF WATER RESOURCES**

**水利部水利水电规划设计总院**



**GIWP**







上善若水  
水善利万物而不争  
——《老子》

黄河九曲  
The Meandering Yellow River



# 目录



02

## — Contents —

- |       |    |                                      |
|-------|----|--------------------------------------|
| 04/05 | 源远 | 总院简介<br>Introduction to the GIWP     |
| 06/07 | 承载 | 职责范围<br>Responsibilities of the GIWP |
| 08/09 | 务本 | 文化精神<br>Culture of the GIWP          |
| 10/29 | 惠泽 | 主要业绩<br>Major Achievements           |
| 30/31 | 融合 | 国际合作<br>International Cooperation    |
| 32/35 | 厚德 | 资质荣誉<br>Qualifications and Credit    |
| 36/37 | 开物 | 重大技术<br>Key Technologies             |
| 38/39 | 众擎 | 专家队伍<br>Expertise                    |
| 40/43 | 经纬 | 组织机构<br>Organizational Structure     |

03



## ◎ 总院简介 | Introduction to the GIWP

水利部水利水电规划设计总院（以下简称水规总院）成立于1953年，在六十多年的发展历程中，承担着中国水利的发展谋划、规划设计、建设管理等重要职责，是中国水利的重要技术支撑单位和中国水利水电勘测设计行业的主管部门，是中国久负盛名的国际化水利水电战略研究与技术咨询权威机构和智库。

为政府提供有力的技术支撑，是建院之基；始终站在国内外技术前沿，是立院之本；为社会提供技术服务，是强院之路；建设国际一流的专家队伍，是兴院之策。建院以来，组织或参与了新中国成立以来几乎所有的重大水利决策论证过程、重大水利水电工程建设项目和大江大河流域规划的研究、论证和审查。近年来组织编制了一大批全国性水利发展的重大规划，开展了一批事关水利发展全局的重大水利战略和重大技术问题研究，完成了一大批重大水利水电工程项目的技术论证，制定了一大批重大国家水治理方案，完善了水利水电勘测设计技术标准和经济定额体系，积极为社会提供高质量的技术服务，为中国经济社会的持续健康发展提供了重要的技术支撑和保障。

Founded in 1953, the General Institute of Water Resources and Hydropower Planning and Design (GIWP) is an important technical supporting organization under the Ministry of Water Resources (MWR) and an administrative authority in charge of water resources and hydropower planning, projects design and consultancy services. The major responsibilities of the GIWP are strategy and policy formulation, planning and design, construction and management on water resources and hydropower development in China. Now the GIWP is the internationally recognized leading institute and think tank within water resources and hydropower investigation, planning, design and management.

The GIWP provides a strong technical and policy support for the government as its basis for operation, stands at the forefront of technological development at home and abroad as its fundamental for development, offers technical services to the society as its road for capacity building and build a team of high-level experts in the world as its policy for successes.

In the capacity of a participant or an organizer, the GIWP has since its establishment been involved in the process of decision making, national planning and policy formulation and verification of nearly all the major water issues and the studies, verification, and examination for major water resources and hydropower projects and plans for big rivers and lakes basins since founding of the People's Republic of China in 1949.

In recent years, the GIWP has completed a large number of national water resources plans, conducted researches on major technical issues and strategic importance to the overall development and management of water sector, completed technical studies of a number of major water resources and hydropower projects and formulated plenty of national water management programs. In the meantime, the GIWP has improved the technical standards and economic norms used in reconnaissance and design of water resources and hydropower projects. In so doing, the GIWP has offered high quality technical services to the society and provided a significant technical support and guarantee for sustainable and healthy economic and social development in China.

言其所學之正，  
源遠而流長也。  
清·佚名《杜詩言志》



05





## ◎ 职责范围 | Responsibilities of the GIWP

水规总院主要从宏观规划、工程前期、工程建设期到运营期，为政府和社会提供全方位、全过程、高质量的技术支撑与服务。

- 1、承担事关全局的重大水利战略研究，重大关键技术和重大政策研究。
- 2、组织或承担全国、流域及区域水利综合、专业规划和专项规划的编制。
- 3、组织重大水利规划、水治理方案和大中型水利水电工程的技术论证和审查，承担水保、环评、移民、安全评价和水资源论证等专题审查和咨询。
- 4、组织或承担制定全国及重点流域和区域重大水治理行动计划方案；组织开展全国性水利基础调查、分析与评估等重要技术基础工作。
- 5、组织编制水利规划设计技术标准和经济定额，负责水利水电勘测设计市场准入和设计质量管理，并参与市场监管。

The GIWP provides quality technical assistance and services to the government and the society as a whole through the planning and policy formulation, different stages of project development, including project planning, feasibility studies, project construction and operation. The scope of responsibilities of the GIWP includes:

- Undertake strategic studies on the overall development and management of water sector and studies on key technologies and important policies;
- Organize or undertake the formulation of nationwide, basin-wide and regional comprehensive and specific planning of water resources;
- Organize technical studies, and reviews for significant water resources planning, water governance programs, and plans of large-and medium-sized water resources and hydropower projects; undertake review and consultancy services for such studies as water and soil conservation, environmental impact assessment, resettlement, safety evaluation and water resources appraisal;
- Organize or undertake the formulation of water governance action plans covering the entire China or in key basins or regions; organize nationwide water related survey as well as the necessary technical analysis and appraisal;
- Organize the formulation of technical standards and economic norms used in reconnaissance, planning and design of water resources and hydropower projects; be in charge of the access to the market of reconnaissance, planning and design in the water sector, design quality management and participate in monitoring the market.

有能奋庸，  
熙帝之载。  
《书·舜典》

承载





## ◎文化精神 | Culture of the GIWP

水规总院传承中华五千年文脉，继承人类社会文化精髓，树立尊重自然、顺应自然、保护自然的理念，遵循“节水优先、空间均衡、系统治理、两手发力”的治水思路，秉承“科学、严谨、求实、创新”的总院精神，从中国水利实际出发，着眼于世界和未来，致力于成为水利规划战略研究智库和水利重大技术创新基地，谋划中国水利、水利勘测设计行业和水规总院永续发展的未来！

In consistence with the spirit embodied in the 5000 years of Chinese culture and the core of human and society culture, the GWIP establishes the concept of respecting, following and protecting the nature, adheres to the principle of “giving priority to water-saving, striving for balanced spatial distribution of water resources, managing the water resources in a systematic manner and taking effective measures to both reduce water demand and increase water supply”, keeps up its spirit of “Scientificness, Strictness, Realisticness and Innovation-----works in a scientific, rigorous and pragmatic manner”. It will keep proceeding from the actual water conditions of China and at the mean time have a vision of development in the world and in the future. It has also committed itself to becoming a base of innovation and think tank for promoting the development of water sector in China and the area of reconnaissance and design as well as its own development in the future.

君子务本，本立而道生。  
——《论语》

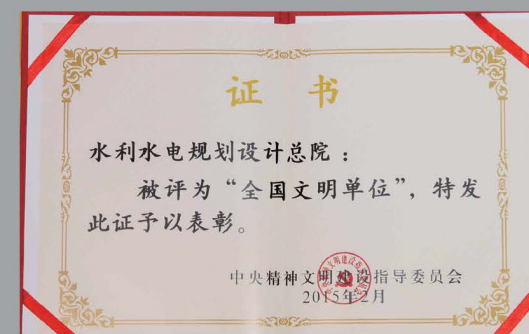


科学 严谨  
Scientificness Strictness

求实 创新  
Realisticness Innovation

08

09



全国文明单位证书  
Certificate of nationwide culturally advanced unit



全国文明单位奖牌  
Medal of nationwide culturally advanced unit



中央国家机关文明单位奖牌  
Medal of culturally advanced unit of central state organizations



首都文明单位奖牌  
Medal of culturally advanced unit of capital organizations



## ◎ 主要业绩 | Major Achievements

### 水利规划与战略研究

近年来，按照水治理体系和治理能力现代化的要求，组织编制了一大批全国性、流域和区域水利综合规划和专业、专项规划，围绕水利发展重大战略、重大政策、重大技术问题等开展了 200 多项研究，为水利发展改革的顶层设计、大规模水利建设和政府公共管理提供了重要的技术支撑。

### Planning and Strategic Study of Water Resources

In recent years, in accordance with the requirement of modernizing water resources management system and capacity building, the GIWP has led the formulation of a large number of nationwide, basin-wide, and regional comprehensive and special planning of water resources. It has conducted more than 200 researches centering on the significant strategies, policies, and technical issues concerning water resources development, thus providing an important support for top-level design of reform in the water sector, as well as for large scale water-related infrastructure development and public administration of the government.

### 作为全国性水利规划技术总负责单位编制的规划

National water resources planning with the GIWP  
as the technically leading organization

- 01、全国水利发展“十五”、“十一五”、“十二五”、“十三五”规划
- 02、全国水资源综合规划
- 03、全国防洪规划
- 04、全国水资源保护规划
- 05、全国水土保持规划
- 06、全国水中长期供求规划
- 07、全国现代灌溉发展规划
- 08、全国抗旱规划
- 09、全国地下水利用与保护规划
- 10、全国城市饮用水安全保障规划
- 11、全国主要江河流域综合规划
- 12、全国河湖水生生态保护修复规划
- 13、全国河道岸线利用与采砂管理规划
- 14、全国大中型水库建设规划

- 01.The 10<sup>th</sup> 11<sup>th</sup> 12<sup>th</sup> & 13<sup>th</sup> Five-year plans of development & reform for water sector;
- 02.National water resources comprehensive planning;
- 03.National flood mitigation planning;
- 04.National water resources protection planning;
- 05.National water and soil conservation planning;
- 06.National medium and long term water supply and demand planning;
- 07.National modern irrigation development planning;
- 08.National drought relief planning;
- 09.National ground water utilization and protection planning;
- 10.National urban drinking water safety planning;
- 11.Comprehensive planning of major river basins in China;
- 12.Protection & restoration planning of water ecosystem of rivers and lakes in China;
- 13.National river shoreline utilization and sand mining management planning;
- 14.National medium- and large-sized reservoir construction planning.



全国灌溉发展总体规划工作会议  
Conference on general planning of national irrigation development



全国水中长期供求规划工作会议  
Conference on national medium and long term water supply and demand planning



## 组织或承担的水利发展战略 与政策研究项目

- 01、国家水资源安全战略研究
- 02、水生态文明建设战略研究
- 03、中国水利现代化战略研究
- 04、产业布局结构及水资源协调研究
- 05、现代水治理体系与制度研究
- 06、应对气候变化影响的适应性对策措施研究
- 07、全国水资源配置格局与江河湖库优化调配研究
- 08、河湖水系连通战略研究
- 09、全国用水总量控制与主要江河水量分配方案
- 10、全国重要河湖生态流量保障方案
- 11、省级空间规划水利相关工作技术要求
- 12、水权制度与水资源资产管理研究
- 13、全国抗旱能力与旱灾风险评估
- 14、现代洪水风险管理制度研究
- 15、全国主要江河入河限制排污总量控制方案
- 16、水生态补偿制度研究
- 17、流域和区域水利发展战略研究
- 18、加快灾后水利薄弱环节建设实施方案
- 19、全国城市应急备用水源建设指导意见
- 20、雄安新区水安全保障战略研究

12



全国水利发展“十三五”规划工作培训  
Training for the 13<sup>th</sup> Five-Year Plan of national water development

## Study programs on water resources development strategies and policies organized or undertaken by the GIWP

- 01.Study on national water resources security strategy;
- 02.Study on water ecological civilization building strategy;
- 03.Study on modernization strategy of water infrastructures in China;
- 04.Study on coordination between industrial layout and water resources;
- 05.Study on modern water governance system and institutions;
- 06.Study on policies for addressing the impact of climatic change in China;
- 07.Study on national macro water resources allocation and optimal regulation of rivers, lakes and reservoirs;
- 08.Strategic study on interconnection of rivers and lakes system;
- 09.Control of total water consumption and water allocation in main rivers in China;
- 10.National important rivers and lakes ecological flow guarantee scheme;
- 11.Technical requirements for water resources related work of provincial space planning;
- 12.Study on water right system and water resources assets management;
- 13.National drought relief capability and drought disaster risk assessment;
- 14.Study on modern flood risk management system;
- 15.Control plan of limiting the total pollutant discharge into major rivers in China;
- 16.Study on water ecological compensation mechanism;
- 17.Strategic study on water infrastructure development in river basins and regions;
- 18.Implementation scheme for speeding up the construction of the weak link of water resources after disaster;
- 19.Guidance for the construction of emergency reserve water source for cities in China;
- 20.Study on the strategy of water safety guarantee in Xiongan New Area.

13



## 组织承担的重大基础技术工作

- 01、中国水资源及其开发利用调查评价
- 02、全国主要江河水生生态状况调查评价
- 03、第一次全国水利普查
- 04、第三次全国水资源调查评价
- 05、全国水资源承载力预警评估
- 06、全国重点地区洪水风险图编制
- 07、中国水资源区划
- 08、中国洪水风险区划
- 09、中国水功能区划
- 10、全国干旱及早灾风险区划
- 11、“一河（湖）一策”方案编制指南与“一河一档”动态监控建设方案
- 12、全国蓄滞洪区基础信息测量及复核项目实施与系统成果集成

## Work on technology studies organized or undertaken by the GIWP

- 01.National water resources development survey and assessment;
- 02.Survey and assessment of water ecological system of major rivers in China;
- 03.The first national water census;
- 04.The third national water resources survey and evaluation;
- 05.Assessment on warning of carrying capacity of water resources in China;
- 06.Flood risk maps of key areas in China;
- 07.Zoning of water resources in China;
- 08.Zoning of flood risk in China;
- 09.Zoning of water function in China;
- 10.Zoning of drought and drought risks in China;
- 11.Compilation guide for "one river (lake) one policy" program and development scheme for "one river one file" dynamic monitoring;
- 12.The basic information measurement, review project implementation and system results integration of national flood storage area.



# 重大水利规划、战略研究与基础技术工作介绍

## ◆ 全国水资源综合规划

2002 年启动，2010 年国务院批复。该规划全面调查和科学评价了我  
国水资源及其开发利用、水生态环境的状况与演变规律，研究制定了全国、  
流域和区域水资源配置总体格局，明确了各流域和区域水资源开发利用  
与节约保护的控制性指标，提出了实行最严格的水资源管理制度的政策  
建议。该规划构建了我国水资源管理的基础技术平台，是我国水资源开发、  
利用、节约、保护与管理工作的的重要依据。全国有 300 多家单位 1.5 万  
余人直接参与了编制工作。

## ◆ 全国防洪规划

1999 年启动，长江、黄河、海河、珠江、松花江、辽河、太湖流域  
等大江大河防洪规划已全部得到国务院批复。规划从全局的角度和战略  
的高度，对江河干流、重要城市河段、重要支流的防洪工程进行了总体  
布局，构建了大江大河和重要支流的防洪保安体系。规划提出了不同时期  
各地区有效防治洪水、减轻洪涝灾害的目标和任务，对维护人民生命  
和财产安全、提高民生福祉和促进经济社会全面、协调、可持续发展提  
供了重要支撑和保障。全国有近 300 家单位约 1.6 万人直接参与了编制  
工作，完成相关报告 500 余件。

## ◆ 全国水土保持规划

2011 年启动，2015 年国务院批复。这是新中国成立以来首部国家层  
面的水土保持综合性规划，指明了全面建成与经济社会发展相适应的水  
土流失综合防治体系的路线图和时间表，是落实国家生态文明总体部署  
的水土保持行动纲领和科学指南，标志着国家水土保持工作进入了规划  
引领、科学防治的阶段。

## ◆ 全国水资源保护规划

2012 年启动，2017 年批复印发。该规划系统分析了我国水资源保护  
现状问题、面临形势与需求，提出了水质、水量及水生态保护目标、重  
点任务和保障措施，是今后一段时期全国水资源保护工作的重要依据，  
对保障我国水安全，促进流域经济社会可持续发展具有重要意义。

# Introduction to major water resources planning, strategic studies and fundamental technical work

## National water resources master planning

The planning was started in 2002 and approved by the State Council in 2010. In the planning, China's  
water resources development and utilization and the status and evolution of water ecological environment  
was investigated and evaluated, an overall water resources allocation framework in watersheds, regions  
and entire China established, the control indexes of water resources utilization and conservation in  
different watersheds and regions identified and the policies for exercising the stringent water management  
system proposed. The planning constitutes the basic technology platform for water resources management  
in China and serves as an important basis for water resources development, utilization, conservation,  
protection and management in China. More than 15,000 people from over 300 units and institutions in  
China participated in the work.

## National flood control planning

The work on national flood control planning was started in 1999 and the plan of the Yangtze River, the  
Yellow River, the Hai River, the Pearl River, the Songhua River, the Liao River and the Taihu Lake has  
been approved by the State Council. From an overall perspective and strategic point of view, the planning  
has made a general layout of the important flood control projects along the main river streams, river  
sections crossing major cities and tributaries, and has established a secured flood prevention system for  
major rivers and tributaries. The planning proposes the objectives and tasks of preventing and controlling  
floods and mitigating flood disaster in different periods and regions, which will enhance security of  
people's lives and property, improve people's livelihood and promote social and economic development  
in a comprehensive, coordinated and sustainable way. More than 16,000 people from over 500 units and  
institutions in China participated in the work and completed more than 500 studies and reports.

## National water and soil conservation planning

The work on national water and soil conservation planning was started in 2011 and had been approved  
by the State Council in 2015. It is the first water and soil conservation comprehensive planning at the  
national level since the P. R. China was established, pointed out the road map and timetable for complete  
completing comprehensive water and soil erosion prevention and control system adapted to economic  
and social development, is the program of water and soil conservation action and the scientific guide  
for the implementation of the overall deployment of the national ecological civilization. It is a sign that  
the national soil and water conservation work has entered the stage of planning guidance and scientific  
prevention.

## National water resources protection planning

The work on national water resources protection planning was started in 2012 and approved and  
publicized in 2017. It analyzes the problems, current situation and demand of water resources protection  
in China, put forward the aim, key tasks and safeguard measures for water quality, quantity and water  
ecological protection. It is an important basis for water resources protection in the whole country for a  
period of time, is of great significance to ensure the water safety of China and promote the sustainable  
development of the economy and society of river basins.



#### ◆ 全国现代灌溉发展规划

2012 年启动，2014 年批复印发。该规划在分析我国灌溉发展现状与面临形势的基础上，研究了未来我国现代灌溉发展的指导思想、基本原则和发展目标，提出了未来我国现代灌溉发展的建设、改革与管理任务，制定了推动规划顺利实施的保障措施，是今后 10 ~ 20 年我国现代灌溉发展的指导纲领和行动策划。

#### ◆ 国家水资源安全战略研究

为系统谋划制定国家水安全战略政策，针对国家水安全突出问题和面临的新形势，水规总院长期坚持对国家水安全战略进行系统研究，先后开展了流域与区域水资源安全战略、节水型社会建设、水利应对气候变化影响的适应性对策、全国抗旱战略等多项课题研究，坚持“节水优先、空间均衡、系统治理、两手发力”的治水思路，在防洪减灾、城乡供水安全保障、应对突发水风险等方面提出了诸多研究成果，为国家的水政策、重大水利建设决策等提供了有力的技术支撑。

#### ◆ 水生态文明建设战略研究

2014 年启动。研究重点是理清生态文明建设总体布局对水生态文明建设的要求，提出水生态文明建设内涵与评价指标体系，科学研判我国水生态文明建设的现状、问题和形势，研究提出我国水生态文明建设的总体思路 and 战略框架，系统谋划我国不同类型地区水生态文明建设和水利相关领域的重点和方向，为全面推动我国水生态文明建设，促进人水和谐，建立“美丽中国”提供重要的技术支撑。

#### National modern irrigation development planning

The planning was started in 2012 and approved and publicized in 2014. It analyzes the status of and the situation confronting irrigation in China, establishes the guiding thoughts, basic principles, and development goals of modern irrigation in the future, identifies the development, reform and management tasks to realize modern irrigation and formulates measures to ensure implementation of this planning. It is a platform and action plan guiding development of modern irrigation in the next 10 to 20 years in China.

#### Study on national water resources security strategy

For the purpose of formulating a national water resources security strategy, the GIWP has been making systematic studies of the strategy, targeting the prominent problems in national water resources security and acknowledging the new situation faced. The GIWP has completed studies of such subjects as water resources security strategy in river basins and regions, building a water-efficient society, responses in the water sector to climate change and national drought relief strategy, etc. It adheres to the principles of “giving priority to water-saving, striving for balanced spatial distribution of water resources, managing the water resources in a systematic manner and taking effective measures to both reduce water demand and increase water supply.” Guided by these principles, the GIWP has also made many studies in the aspect of flood prevention and disaster relief, water supply security in urban and rural areas and dealing with emergent risks against water security. In so doing, the GWIP has provided a reliable technical support for decision-making concerning water-related policies and projects.

#### Study on water ecological civilization building strategy

This study was started in 2014. It aims at making clear the intrinsic requirement imposed by the overall plan of ecological progress on water ecological progress, putting forward the concept and evaluating system of water ecological building, sizing up the current status, existing problems and trend of water ecological building in China, formulating an overall plan for promoting water ecological progress in China and identifying the focus and orientation of water ecological building in different regions as well as in water-related fields so as to provide reliable technical support to promoting water ecological progress in an all-round way and realizing the aim of a “beautiful China”.

#### ◆ 建立和完善与水有关的生态补偿机制研究

该项目总结和评价了我国与水有关的生态补偿现状及存在问题，研究了不同类型与水有关的生态补偿中利益相关者之间的损益关系以及生态补偿的测算方法和补偿模式，提出了建立和完善与水有关的生态补偿制度的各项政策建议，为加强流域上下游之间生态保护与建设、实现流域共建共享和在全国建立生态补偿机制提供了重要科学依据。

#### ◆ 中国水资源开发利用调查评价

2002 年启动，2004 年完成。本次调查评价主要包括：全国及各地区水资源数量评价、水资源质量评价、水资源开发利用调查评价、水污染调查评价以及与水相关的生态环境状况调查评价等内容，涉及气象、水文、水资源、水文地质、水环境、水工程、供用水、社会经济、土地利用、生态等多个领域和专业，是一项庞大的系统工程。该成果极大地丰富了水资源评价的理论与技术方法体系，深刻揭示了水资源及开发利用与生态环境的演变机理和规律，形成了最为系统、完整、全面、实用的国家级权威水资源调查评价成果。该成果已经在全国、流域和区域政策制定、规划编制、科学研究中得到广泛应用，实现了成果完全转化。全国有 270 多家单位 1.2 万余人直接参与了调查评价工作。

#### Study on establishing and improving water ecological compensation mechanism

This program summarizes and evaluates the current situation and existing problems of water ecological compensation in China. It looks into different relationships between losses and gains among the stakeholders and calculation methods and compensation models of water ecological compensation. The program also makes policy recommendations on establishing and improving water ecological compensation system.

#### National water resources development survey and assessment

The investigation and assessment work was started in 2002 and completed in 2004. It is a huge systematic project which mainly involves water resources quantity evaluation, water resources quality evaluation, investigation and evaluation on water resources development and utilization, investigation and assessment on water pollution and the related ecological environment status, covering many fields and disciplines of meteorology, hydrology, water resources, hydrogeology, water environment, water projects, water supply and use, society, economy, land utilization and ecology, etc. It greatly enriches the water resources evaluation theory and technical method system, profoundly reveals the evolution mechanism and law of water resources development and utilization and ecological environment and forms the systematic, integrated and practical national authoritative water resources investigation and evaluation results. The results have been widely applied in the river basins and for the regional policy development, planning and scientific research and successfully and completely converted into practice. There are 12,000 persons from more than 270 units directly participated in the investigation evaluation work.



全国水资源综合规划专家审查会  
Experts review conference on national water resources master planning



#### ◆ 第一次全国水利普查

2010 年启动，2012 年完成。全面查清了我国江河湖泊的基本情况，包括数量、分布和水文等自然特征状况；全面查清了水利工程基本情况，包括种类、数量、分布、规模及能力效益等；查清了经济社会用水情况，包括水利设施供水规模、结构和对象，以及经济社会用水规模、结构、水平和效率等状况；全面查清了江河湖泊开发治理与保护情况，包括取水口、水源地、入河排污口、江河湖泊治理措施和治理达标情况；查清了水土流失的类型、分布和强度以及水土流失治理情况；查清了水利行业能力建设情况，包括各类水利机构的数量及分布、从业人员数量及结构等情况；完善了国家基础水信息标准和调查统计技术体系，建立了国家基础水信息数据库、地理空间管理系统、数字化平台和应用系统。

#### ◆ 全国水资源承载能力预警评估

2014 年启动。针对全国部分地区水资源环境超载问题，以县级行政区为单元，拟重点开展：摸清中国水资源、水环境、水生态的承载能力基线，研究提出科学合理的水资源承载能力评价指标体系和技术方法，客观评估中国县域及河流水系现状水资源承载状况，制定县域与河流水系承载能力调控方案，建立水资源承载能力监测预警机制和预警监控平台，实现水资源水环境水生态承载负荷的社会化动态管理，促进人口、经济与资源环境均衡协调发展。

#### ◆ 第三次全国水资源调查评价

2017 年开始在全国范围内开展第三次全国水资源调查评价工作，主要任务是全面摸清近年来我国水资源数量、质量、开发利用、水生态环境的变化情况，准确把握水资源取用、水资源消耗、水环境损害、水生态退化的情况，系统分析 60 年来我国水资源的演变规律，提出全面、真实、准确、系统的评价成果，为满足新时期水资源管理、健全水安全保障体系、促进经济社会可持续发展和生态文明建设奠定基础。

#### The first national water census

This campaign was launched in 2010 and completed in 2012. The census makes a comprehensive survey of the basic data of rivers and lakes including the quantity, distribution and hydrological characteristics, water projects including the quantity, location, size and benefits, water resources development and utilization including the water supply structures, amount and users as well as water use scale, components, level and efficiency, development, harnessing and protection of rivers and lakes including the population, water sources, pollutants discharge inlets into rivers, measures taken for harnessing and the results, water and soil losses including the category, distribution, degree and the control and the capacity building in water sector including the governmental departments, institutions, enterprises and employees. It also improved the national basic water information standards, technical documents governing water survey; established the national basic water information database, geographical spatial management system, and digitalization application system.

#### Assessment on warning of carrying capacity of water resources in China

This job was launched in 2014. In view that the water environment in some parts of China is overloaded, the campaign plans to determine the base line of carrying capacity of water resources, water environment and water ecology on county basis, put forward an appropriate index system and method for rating the carrying capacity of water resources, give an objective evaluation of the current carrying capacity of water resources in different counties and river systems, formulate the plan for regulating carrying capacity of water resources in different counties and river systems, establish a warning mechanism and platform for monitoring carrying capacity of water resources, realize a real-time management of the carrying capacity of the water environment and finally promote the balanced and coordinated development between population, economy and natural resources.

#### The third national water resources survey and evaluation

The third national water resources survey and evaluation work started nationwide in 2017. The main task is to fully understand the changes in the quantity, quality, exploitation, utilization and the ecological environment of water resources in China in recent years, accurately mastering the water resources use, consumption, water environment damage and water ecological degradation, to systematically analyze the evolution law of water resources in China in the past 60 years, to put forward comprehensive, true, accurate and systematic evaluation results, to lay the foundation for meeting the management of water resources in the new period, improving the system of water safety guarantee, promoting the sustainable economic and social development and the construction of ecological civilization.



## 重大水利规划与项目审查和咨询

水规总院组织与参与了新中国成立以来几乎所有重大水利规划和工程项目的研究、论证、审查和咨询工作，包括全国主要江河流域和重点区域的水利综合规划和专项规划，长江三峡等 2000 多座大中型水利工程，南水北调等一大批水资源配置工程，长江、黄河等大江大河治理工程，以及都江堰等大量灌区工程，为构建中国水安全保障体系和社会经济发展起到了重要的支撑和推动作用。此外，还开展了中央财政水利预算项目评估、工程安全评价、安全鉴定、水利建设项目绩效评价和后评价等工作。近年来，水规总院注重从规划编制、前期工作以及规范制定等方面推动规划设计理念更新，积极推动水利勘测设计行业建立起统筹项目经济、社会和生态效益，保障工程良性运行的规划设计理念和技术体系。

### Review Examination and Consultancy for Key Water Resources Planning and the Projects

The GIWP has organized or participated in the studies, verification, examination and consultancy of practically all the significant water resources planning and the projects the People's Republic of China has witnessed since its foundation in 1949 including the comprehensive and specialized planning in major river basins and key regions, more than 2000 large and medium-sized multi-purpose dams and water works such as the Three gorges dam, a number of water resources diversion projects such as the South-to-north water diversion project, harnessing of major rivers system such as the Yangtze River and the Yellow River and many irrigation projects such as Dujiangyan irrigation system. These works have greatly enhanced China's water safety and promoted its social and economic development. Besides, the GIWP has also conducted appraisals of water projects financed by the central government budge, project safety assessment and appraisal and performance evaluation and post evaluation of water projects.

In recent years, the GIWP pays attention to pushing the evolution of planning and designing concepts and strives to establish a set of new concepts and technical system in the water resources planning and engineering that combines economic, social and ecological benefits of the project so as to ensure that the projects operate in a healthy manner.

### 近年来组织的重大水利规划技术审查

- ◆ 长江、黄河等大江大河流域综合规划
- ◆ 主要江河流域综合规划与专项规划
- ◆ 区域水利发展综合规划与专项规划

### Review and examination of water resources planning organized in recent years

Comprehensive planning of large rivers such as the Yangtze River and the Yellow River;  
Comprehensive and specialized planning of major rivers;  
Comprehensive and specialized planning of regional water resources development.

## 近年来组织的重大水利工程技术审查

- ◆ 长江三峡水利枢纽
- ◆ 黄河小浪底水利枢纽
- ◆ 广西大藤峡水利枢纽
- ◆ 四川亭子口水利枢纽
- ◆ 陕西东庄水利枢纽
- ◆ 河南山店水库
- ◆ 洞庭湖、鄱阳湖治理工程
- ◆ 南水北调东中线一期工程
- ◆ 云南滇中引水工程
- ◆ 引江济淮工程
- ◆ 陕西引汉济渭工程
- ◆ 贵州夹岩水利枢纽及黔西北供水工程
- ◆ 甘肃省引洮供水二期工程
- ◆ 青海湟水北干渠扶贫灌溉工程

### Major technical review and verification for water projects in recent years

Three Gorges dam project on the Yangtze River;  
The South-to-north water diversion project(the 1<sup>st</sup> phase of the east and middle routes);  
Xiaolangdi hydro complex project on the Yellow River;  
Dianzhong water diversion project in Yunnan province;  
Datengxia hydro complex project on the Xijiang River;  
Yangtze River-to-Huai River water diversion project;  
Tingzikou hydro complex project in Sichuan province;  
Han River-to-Wei River water diversion project in Shaanxi province;  
Dongzhuang water control project in Shaanxi province;  
Jiayan water control and water supply project in Northeast Guizhou province;  
Chushandian reservoir in Henan province;  
Taohe river diversion and water supply project in Gansu province;  
Harnessing of Dongting Lake and Poyang Lake;  
Irrigation and poverty relief project on Huangshui River in Qinghai province.

### 近年来组织的其他专项审查与评估

- ◆ 中央财政水利预算项目审查
- ◆ 水利工程安全预评价审查、水库蓄水安全鉴定、水利工程竣工验收技术鉴定
- ◆ 水利建设项目绩效评价
- ◆ 水利建设项目后评价

### Other specialized review and appraisals organized by the GWIP

Appraisals of water projects financed by the central government;  
Pre-evaluation of safety of water projects, appraisal of reservoir impoundment safety and quality appraisal and acceptance of completed water projects;  
Performance evaluation of water projects;  
Post evaluation of water projects.



# 重点工程项目介绍

## ◆ 长江三峡

三峡工程是治理和开发长江的关键性骨干工程，具有防洪、发电、航运等巨大综合效益。坝顶高程 185 米，总库容 393 亿立方米，总装机容量 22500 兆瓦。三峡工程的综合工程规模以及大坝、水电站、船闸、升船机等单项建筑物均创造了世界之最。

## ◆ 南水北调

南水北调工程是缓解中国北方地区水资源严重短缺、优化配置水资源、修复生态环境的重大战略性工程。经过 50 年的勘测、规划和研究，形成了东线、中线、西线三条调水线路，与长江、淮河、黄河、海河相互联接，构成中国水资源“四横三纵、南北调配、东西互济”的总体格局。南水北调东、中线一期工程已分别于 2013 年和 2014 年正式通水。中线一期工程干线全长 1432 公里，年均调水量 95 亿立方米，沿线 20 个大中城市及 100 多个县（市）受益。东线一期工程增供水量 46.5 亿立方米，提水 13 级，调水线路总长约 1660 公里。

## ◆ 黄河小浪底水利枢纽

小浪底水利枢纽工程是黄河防洪、防凌、减淤和水资源配置的重要控制性工程，兼顾供水、灌溉、发电等综合效益。坝顶高程 281 米，库容 126.5 亿立方米，单机容量为 30 万千瓦的机组 6 台，总装机容量 1800 兆瓦。

## ◆ 大藤峡水利枢纽

大藤峡水利枢纽是珠江流域防洪控制性工程、关键性水资源配置工程和水电梯级开发重要工程。工程任务以防洪、航运、发电、水资源配置为主，结合灌溉等综合利用。水库总库容 34.30 亿立方米，电站总装机容量 1600 兆瓦。

# Introduction to the key water projects

## A. Three gorges dam project on the Yangtze River

It is the largest project in China at large for harnessing and developing the Yangtze River. It serves the purposes of flood control, power generation and navigation, etc. The dam crest is at 185m a.s.l. and the total reservoir storage capacity is 39.3 billion m<sup>3</sup>. It is the world's largest power station in terms of installed capacity (22,500 MW). The size of the project as a whole as well as such separate structures as dam, powerhouse, ship lock and ship lift makes a record in the world.

## B. The South-to-north water diversion project

The South-to-north water diversion project is an important strategic project that will mitigate severe water shortage in North China, optimize water resources allocation and restore eco-environment. Through 50 years' investigation, planning and studies, the east, middle and west routes for water diversion have been fixed which are connected to the Yangtze River, the Huai River, the Yellow River and the Hai River forming the general layout of "Four west-east rivers, three south-north waterways; south-to-north water coordination and dispatching and supporting each other between the west and the east" for water resources in China. The 1<sup>st</sup> phase of the east and middle routes are under construction and will be completed in 2013 and 2014 respectively. The water quantity of the 1<sup>st</sup> phase of the middle route with the total length of about 1,400 km is 9.5 billion m<sup>3</sup>. The water quantity of the 1<sup>st</sup> phase of the east route with the total length of about 1,660 km is 4.65 billion m<sup>3</sup> through 13 steps of water lifting.

## C. Xiaolangdi hydro complex project on the Yellow River

Xiaolangdi hydro complex project is the key control project for flood control, ice jam prevention, silt reduction and water resources allocation of the Yellow River. It has comprehensive benefits of water supply, irrigation and power generation. The dam crest level is 281m and the reservoir storage capacity is 12.65 billion m<sup>3</sup>. It has 6 generating units each with a capacity of 300MW. The total installed capacity is 1800MW.

## D. Datengxia hydro complex project on the Pearl River

Datengxia hydro complex project on the Pearl River is a key flood control project in the Pearl River basin, a significant project for water resources allocation and a major cascade in hydropower development of the Pearl River. The project primarily serves the purposes of flood control, navigation, power generation and water resources allocation and it also gives due consideration to irrigation development. The reservoir has a total storage capacity of 3.43 billion m<sup>3</sup> and the station has an installed capacity of 1600MW.







习近平主席调研引洮供水工程  
President Xi Jinping visiting Taohe River diversion and water supply project

#### ◆ 亭子口水利枢纽

亭子口水利枢纽是以防洪、灌溉及城乡供水、发电为主，兼顾航运，并具有拦沙减淤等综合利用效益的大型水利枢纽工程。水库总库容为 40.67 亿立方米，设计灌溉面积 292.14 万亩；电站装机容量 1100 兆瓦；航运过坝设施规模为 500 吨级。

#### ◆ 广西百色水利枢纽

百色水利枢纽是珠江流域综合利用规划中治理和开发郁江的一座大型骨干水利工程，是一座以防洪为主，兼有发电、灌溉、航运、供水等综合效益的水利枢纽，是国家实施西部大开发的重要标志性工程之一。水库总库容 56.6 亿立方米。

#### ◆ 嫩江尼尔基水利枢纽

尼尔基水利枢纽是中国西部大开发标志性工程之一。工程以防洪、供水为主，结合发电，兼顾改善下游航运和水环境，并为松花江流域水资源的优化配置创造条件。水库总库容 86.11 亿立方米，总装机容量 250 兆瓦。

#### ◆ 四川省都江堰灌区续建配套与节水改造工程

四川省都江堰灌区续建配套与节水改造工程以灌溉为主，兼有防洪、发电、城市供水等作用，是四川省国民经济发展不可替代的水利基础设施。都江堰灌区始建于公元前 256 年，是中国最大的灌区，灌溉面积 1150 万亩。经过改造，灌区工程的整体标准得到大幅提高，抗御极端水旱灾害的能力得到大大加强。

#### E. Tingzikou hydro complex project

Tingzikou hydro complex project on the Jialinjing River is a large-sized water project. It primarily serves the purposes of flood control, irrigation, rural and urban water supply and power generation and it also gives adequate consideration to navigation. Besides, the project will also help trap sediment and alleviate silting of the river. The reservoir has a total storage capacity of 4.067 billion  $\text{m}^3$  capable of irrigating an area of 2,921,400 mu ( 15 mu equal 1 hectare ). The power station has an installed capacity of 1100MW. For navigation, it is designed for 500 tons ships.

#### F. The Baise hydro complex project in Guangxi autonomous region

The Baise hydro complex project is mainly for flood control and also operates for hydropower generation, irrigation, navigation and water supply, etc. It is a large-scale key water project to control and develop Yu River for the integrated water management of the Pearl River and is also one of the important benchmark projects in the national Western Development Plan. The total storage capacity of the reservoir is 5.66 billion  $\text{m}^3$ .

#### G. The Ni'erji hydro complex project on the Nenjiang River

The Ni'erji hydro complex project is one of the landmark constructions of the national Western Development Plan. The project mainly serves for flood control and water supply for urban residents, industries and agriculture and also operates for hydropower generation, improving navigation and water environment in the lower reaches. It also optimizes water resources in the Songhua river basin. The total reservoir storage capacity of the reservoir is 8.611 billion  $\text{m}^3$  and the total installed capacity of the power station is 250 MW.

#### H. Rehabilitation and water-saving for Dujiangyan irrigation system in Sichuan province

The major function of the rehabilitation and water-saving project for Dujiangyan irrigation system in Sichuan province is irrigation and it also provides benefits of flood control, power generation and urban water supply. It plays an irreplaceable role of water infrastructure for the economic development in the province. The Dujiangyan irrigation system was built in 256 B.C. and still operates with the largest irrigation areas in China occupying an area of 11,500,000 hectares. Through rehabilitation, the general standard of the structures of the system has been substantially raised and its capability against the disasters from the extreme floods and droughts has been greatly improved.





#### ◆ 云南滇中引水工程

滇中引水工程位于云南省中部，涉及金沙江、澜沧江、红河、南盘江四大水系，是以城镇生活与工业供水为主，兼顾农业和生态的跨流域重大水资源配置工程。工程供水范围涉及大理、丽江、楚雄、昆明、玉溪、红河六个州（市）的 35 个县（市、区），多年年平均引水量 34.03 亿立方米。

#### ◆ 引江济淮工程

引江济淮工程沟通长江、淮河两大流域，穿越皖江城市带承接产业转移示范区、合肥经济圈和中原经济区三大区域发展战略区，地跨皖豫 2 省 15 市，受水区总面积 7.06 万平方公里，是以城乡供水和发展航运为主，兼顾灌溉补水和改善巢湖及淮河水生态环境的跨流域重大水资源配置工程，年平引江水量 48.99 亿立方米。

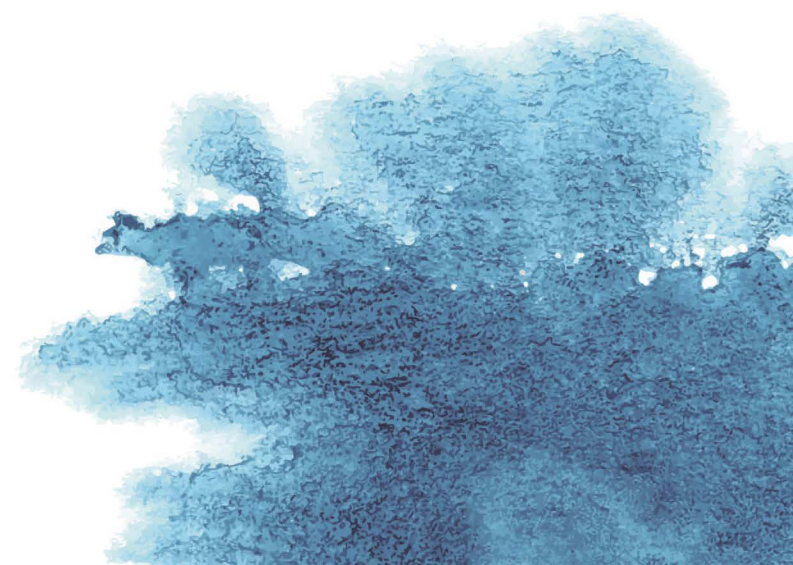


#### I. Dianzhong water diversion project in Yunnan province

Dianzhong water diversion project located in the middle of Yunnan Province, involving the Jinsha River, Lancang River, Red River and Nanpanjiang River four major water systems. It is a cross basin major water resource allocation project giving priority to urban life and industrial water supply, both agriculture and ecology. The scope of water supply involves 35 counties (cities and districts) in six states (cities) of Dali, Lijiang, Chuxiong, Kunming, Yuxi and Honghe. The average volume of water diversion for years is 3,403, 000,000 cubic meters.

#### J. Yangtze River-to-Huai River water diversion project

Yangtze River-to-Huai River water diversion project communicate with the two major basins of the Yangtze River and Huaihe River, traverse the three large regional development strategic zone of Wanjiang urban belt undertaking industrial transfer demonstration area, Hefei economic circle and Central Plains economic region, cross 15 cities in the 2 provinces of Anhui and Henan. The total water area is 70, 600 square kilometers. Giving priority to water supply in urban and rural areas and development of shipping, irrigation and water supplement and improvement of water ecological environment in Chaohu Lake and Huaihe River is also its function. As a cross basin major water resource allocation project, annual water diversion Yangtze River is 4,899,000,000 cubic meters.





技术标准与经济定额

技术标准

负责中国水利水电勘测设计技术标准编制、实施和监督管理。建立并完善了包括 208 项技术标准的《水利水电勘测设计技术标准体系》。主持编制了《工程建设标准强制性条文（水利工程部分）》《水利水电工程等级划分及洪水标准》《水利水电工程设计洪水计算规范》《水资源规划规范》《水利水电工程地质勘察规范》《调水工程设计导则》《混凝土重力坝设计规范》《河道整治设计规范》《堤防工程设计规范》《灌溉与排水工程设计规范》《水利水电工程环境保护设计规范》《水利水电工程建设征地移民安置规划设计规范》《水土保持工程设计规范》《水利水电工程初步设计报告编制规程》等 156 项国家标准和水利行业标准，涵盖水文、水资源、规划、勘测、水工、机电、金属结构、施工、征地移民、环境保护、水土保持和安全设计等各个专业。

经济定额

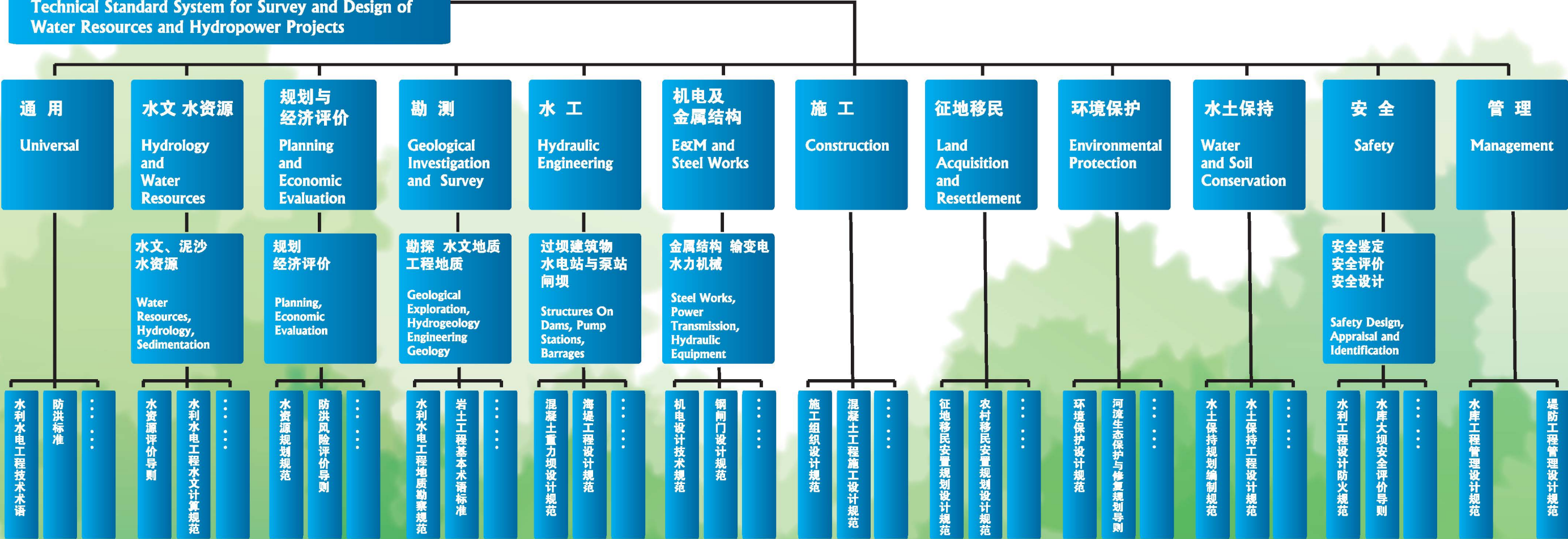
负责中国水利工程建设经济定额的编制、实施和管理工作，编制完成了《水利工程设计概（估）算编制规定》《水利建筑工程预算定额》《水利建筑工程概算定额》《水利水电设备安装工程预算定额》《水利水电设备安装工程概算定额》《水土保持工程概算定额》《水利建筑工程概预算补充定额》（掘进机施工隧洞工程）、《水利工程概算补充定额（水文设施工程专项）》《水利国际招标工程概算编制方法指南》等 10 多种水利工程定额。

手册和指南

- 1. 水工设计手册  
2008 年启动《水工设计手册》（第 2 版）编写工作，全书 11 卷于 2014 年全部付梓。修编工作由水规总院等 3 家单位组织，共有 26 家单位，500 多位专家、学者和技术骨干直接参与了手册编写工作，是目前最为全面、最为系统、最为权威的水利水电规划设计技术手册。
- 2. 指导流域、区域水利综合规划、专业规划、专项规划编制，以及生态治理、防洪减灾、水量调配等工作的系列技术性规定和指南。
- 3. 指导水利工程建设管理的系列规范性技术文件。

水利水电勘测设计标准体系总框架图

Technical Standard System for Survey and Design of Water Resources and Hydropower Projects







## 技术标准

## Technical Standards

## Technical Standards and Economic Norms

## Technical standards

The GIWP is in charge of the drafting, promulgation, publicizing, and implementation supervision of the technical standards in the water sector of China. It compiled and has been constantly updating the Technical Standard System for Survey and Design of Water Resources and Hydropower Projects which now contains 208 technical standards. It has led the promulgation of 156 national standards and standards under the Ministry of Water Resources, including:

- Mandatory articles of project construction standard (for water projects)
- Standard for classification and flood control of water resources and hydropower projects
- Regulation for calculating design flood of water resources and hydropower projects
- Standard for water resources planning
- Code for engineering geological investigation of water resources and hydropower projects
- Design guide for water diversion projects
- Standard for design of concrete gravity dams
- Standard for design of river training
- Code for design of levee project
- Standard for irrigation and drainage projects
- Standard for environmental protection design of water resources and hydropower projects
- Specifications on land requisition and resettlement for water resources and hydropower projects
- Standard for water and soil conservation projects design
- Regulation for drafting preliminary design of water resources and hydropower projects

These technical standards cover the fields of hydrology, water resources, planning, survey, hydraulic engineering, electrical and mechanical engineering, metal structure, construction planning, land acquisition and resettlement, environmental impact assessment, water and soil conservation and safety design.



经济定额  
Economic Norms



水工设计手册  
 Hydraulic Engineering Design Manual

## Economic norms

The GWIP is also responsible for the drafting, promulgation, publicizing, and implementation supervision of the economic norms used in the construction of water projects. The economic norms include:

- Regulations for compiling cost estimation of water projects
- Economic norms for budgeting of water projects construction
- Economic norms for cost estimation of water projects construction
- Economic norms for cost estimation of equipment installation of water projects
- Economic norms for budgeting of equipment installation of water projects
- Economic norms for cost estimation of water and soil conservation projects
- Supplementary economic norms for budgeting of water projects construction (tbrn construction)
- Supplementary economic norms for budgeting of water projects (establishment of hydrological facilities)
- Guide for compiling cost estimation of international bidding for water projects

## Manuals and Guides

Hydraulic engineering design manual

Hydraulic engineering design manual (second edition) has 11 volumes. It was launched in 2008 and completed and sent to publish in 2014. It is the most complete and authoritative set of design manuals in China for design of water projects. The edition of this set of manuals is led by the GWIP and other two institutions. Over 500 experts and scholars from 26 institutions are involved in the editing of this set of manuals.

Technical regulations and guides for drafting comprehensive and specialized planning in river basins and regions and for better performing such works as ecological environment improvement, flood prevention and disaster relief and water resources allocation.

Normative documents for management of water projects construction.



## ◎ 国际合作 | International Cooperation

水规总院积极开展水利国际技术合作与交流，先后与世界银行、亚洲开发银行、联合国教科文组织、联合国开发计划署、联合国亚太经社会、世界自然基金会等多边国际组织开展了多项技术合作，与美国、加拿大、意大利、澳大利亚、瑞士、坦桑尼亚、乌干达等多国开展了双边合作，与国际水资源协会、国际大坝委员会等多个国际学术团体和技术机构保持密切的交流与合作。

- 世行合作项目：中国水行业行动计划（黄淮海流域）研究
- 世行合作项目：中国地下水管理能力建设
- 世行合作项目：中国国别水资源伙伴战略
- 亚行合作项目：中国水资源承载能力研究
- 亚行合作项目：流域水资源分配和管理政策研究
- 亚行合作项目：中国水行业发展战略研究
- 联合国亚太经社会合作项目：水战略规划研究
- 世界自然基金会合作项目：流域综合规划技术研究
- 世界自然基金会合作项目：空间规划与水利规划融合
- 中意合作项目：华北平原地下水管理研究
- 瑞士发展合作署合作项目：应对气候变化条件下地下水含水层超采治理与管理

此外，国际水资源协会（简称 IWRA）中国地区委员会挂靠在水规总院，组织中国专家积极参与了大量的国际水事活动与技术交流。

34

海纳百川，有容乃大  
清·林则徐

融  
合



The GIWP is active in carrying out international technical cooperation and exchanges. It is engaged in multilateral cooperation with such international organizations as World Bank, Asian Development Bank, UNESCO, UNDP, UNESCAP and World Wide Fund for Nature, etc. And it also has bilateral cooperation with such countries as USA, Canada, Italy, Australia, Switzerland, Tanzania, Uganda, etc. In addition, the GIWP is in close contact with many academic and technical institutions and organizations such as International Water Resources Association (IWRA) and International Commission on Large Dams (ICOLD).

The international cooperation and exchanges programs include:

China-World Bank cooperation: China agenda for water sector strategy for North China

China-World Bank cooperation: Establishment of groundwater management center

China-World Bank cooperation: China country water resources partnership strategy

China-Asian Development Bank cooperation: Study of the carrying capacity of water resources

China-Asian Development Bank cooperation: River basin water resources allocation and management policy

China-Asian Development Bank cooperation: Country water assessment

China-United Nations Economic and Social Commission for Asia and the Pacific cooperation: Strategic planning and management in Haihe & Huaihe River Basin of P. R. China

China-World Wide Fund for Nature cooperation: Support to technical guidelines development on river basin master plan in China

China- World Wide Fund for nature cooperation:

Study on comprehensive watershed planning technology

China- World Wide Fund for nature cooperation: Alignment of spatial and basin planning

Sino-Italy cooperation:

North China Plain groundwater management plan

Swiss Agency for Development and Cooperation cooperation:

Rehabilitation and management strategy for over-pumped aquifers under a changing climate

In addition, IWRA China Committee is affiliated to the GIWP which has organized the Chinese experts to participate in many international water events and technical exchange activities.



中外专家组考察苏木拜河  
Site visit of Sumubai River by experts from China and abroad

35



◎ 资质荣誉 | Qualifications and Credit

水规总院拥有水利水电工程规划咨询、勘测设计、评估咨询、造价咨询、管理咨询和勘测设计甲级资质，还取得了水利工程建设监理、水土保持方案编制、水土保持监测、水文水资源调查评价的甲级资质。

证书名称	级别	颁证部门
工程咨询资格证书	甲级	国家发展改革委
工程设计证书	甲级	住建部
工程造价咨询企业甲级资质证书	甲级	住建部
水利工程建设监理单位资质等级证书	甲级	水利部
水土保持方案编制资格证书	甲级	水利部
水土保持监测资格证书	甲级	水利部

Name of Certificates	Rank	Issued by
Engineering consultancy qualification	Class A	NDRC
Engineering designs qualification certificate	Class A	MOHURD
Engineering costestimation qualification certificate	Class A	MOHURD
Project construction supervision qualification certificate	Class A	MWR
Qualification for preparing water and soil conservation programs	Class A	MWR
Qualification for water and soil conservation monitoring	Class A	MWR

Note: NDRC refers to National Development and Reform Commission  
MOHURD refers to Ministry of Housing and Urban-Rural Departament  
MWR refers to Ministry of Water Resources

水规总院高度重视科技创新和成果创优工作，2004 年以来，获得国家和省部级科学技术进步奖数十项，多项成果达到国际和国内领先水平。

国家科学技术进步奖和全国勘测设计奖

- ◆ 水功能区划与水资源保护理论技术及应用
- ◆ 中国水资源及其开发利用调查评价
- ◆ 全国水资源综合规划（2010-2030）

省部级科技进步奖和勘测设计奖

- ◆ 中国水资源与经济社会及生态环境协同发展研究
- ◆ 水利部水利工程系列定额编制关键技术研究
- ◆ 城市饮用水水源地安全保障理论技术及应用
- ◆ 水工程规划设计关键生态指标体系研究与应用
- ◆ 长江中下游河道采砂规划研究与实践
- ◆ 风暴潮灾害防治及海堤工程关键技术研究与实践
- ◆ 水利水电工程边坡关键技术应用和设计标准研究
- ◆ 水利水电工程建设征地移民安置规划设计信息管理系统
- ◆ 干旱灾害风险评估与调控关键技术研究
- ◆ 全国水土保持区划关键技术研究与应用
- ◆ 用水效率驱动因子分析及动态调控关键技术
- ◆ 深厚覆盖层超深防渗墙关键技术研究与应用

天行健，君子以自强不息；  
地势坤，君子以厚德载物。  
——《周易》

厚德





The GIWP holds Class A qualification certificates in planning, investigation, design, appraisal, cost estimation and management of water projects. It also holds Class A qualifications for providing construction supervision, preparing water and soil conservation programs and conducting water and soil conservation monitoring and survey and assessment of hydrology and water resources.

The GIWP attaches great importance to technical innovation. Since 2004, it has made a host of state-of-the-art technical achievements at home and abroad and for this regard won dozens of national and provincial/ministerial awards for science and technology progress.

The national science and technology progress award

& The national survey and design award:

- The theory, technology and application in water functional zoning and water conservation;
- National water resources, development and utilization survey and assessment;
- National water resources comprehensive planning (2010-2030).

The provincial and ministerial level science and technology progress award

& The provincial and ministerial level survey and design award

- Study on synergetic development of water resources, economy, society and ecological environment in China
- Study on key technology of compiling economic norms for water projects
- Theory, technology and the application of urban drinking water source safety
- Research on and application of key ecological index system for planning and design of water projects
- Research on and practice of sand-mining planning in the middle and lower Yangtze River
- Research on key technology in storm tide disaster prevention and sea-dyke project
- Research on key slope technology application and design standards of water resources and hydropower projects
- Information management system for land requisition and resettlement planning and design of water resources and hydropower projects
- Research on key technologies for risk assessment and regulation of drought disaster
- Research and application of key technology of national soil and water conservation zoning
- Analysis of water efficiency driving factor and key technology of dynamic control
- Key technology research and application of ultra-deep cut-off wall with deep overburden



国家科学技术进步奖二等奖证书  
Certificate of the second prize of the national science and technology progress award



国家科学技术进步奖二等奖证书  
Certificate of the second prize of the national science and technology progress award



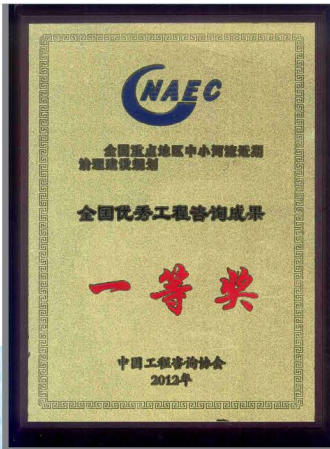
大禹水利科学技术奖一等奖  
The first prize of Dayu water resources science and technology



大禹水利科学技术奖一等奖  
The first prize of Dayu water resources science and technology



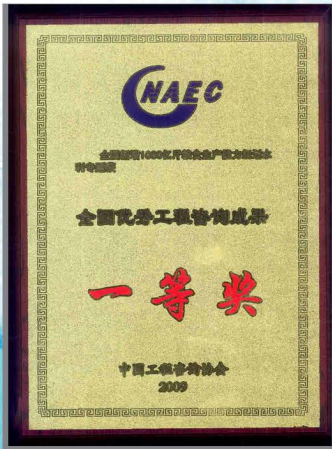
大禹水利科学技术奖一等奖  
The first prize of Dayu water resources science and technology



全国优秀工程咨询成果一等奖  
The first prize of national excellent engineering consulting achievements



全国优秀工程咨询成果一等奖  
The first prize of national excellent engineering consulting achievements



全国优秀工程咨询成果一等奖  
The first prize of national excellent engineering consulting achievements



## ◎ 重大技术 | Key Technologies

经过长期系统的水利水电规划战略研究、水利水电技术研究创新和中國水治理的实践，水规总院形成了全面系统的重大水利关键技术。主要包括：

- ◆ 水资源调查评价技术与水循环机理模拟分析技术
- ◆ 水资源配置与调控技术
- ◆ 重大跨流域调水技术
- ◆ 流域与区域资源环境规划技术
- ◆ 水生态环境修复与保护技术
- ◆ 防洪抗旱减灾与水安全风险评佔调控技术
- ◆ 江河流域水治理综合技术
- ◆ 流域与区域水环境综合治理技术
- ◆ 水土流失治理技术
- ◆ 水资源资产评估技术
- ◆ 水工程综合调度技术

In its long time practice and innovation, the GWIP has formed a series of core technologies, including:

- ◆ Water resources survey and appraisal technology and water cycling mechanism simulation and analysis technology;
- ◆ Water resources allocation, regulation and control technology;
- ◆ Significant inter-basin water diversion technology;
- ◆ River basin and regional water resources environment planning technology;
- ◆ Water ecological environment restoration and protection technology;
- ◆ Flood prevention, drought relief, disaster reduction and water security risk evaluation and control technology;
- ◆ River basin comprehensive water governance technology;
- ◆ River basin and regional water environment comprehensive management technology;
- ◆ Water and soil losses control technology;
- ◆ Water resources assets appraisal technology;
- ◆ Coordinated dispatching technology of water projects.

履端开物，实资元后；  
代终成务，凉惟宰栋。  
——《周书·武帝纪上》

# 开物



40



41





## ◎ 专家队伍 | Expertise

近年来，水规总院组织编制了一大批全国性综合或专业、专项规划，组织了南水北调、大江大河治理、大型水利枢纽工程、大型灌区等国家重点项目的技术论证与审查，为政府有关决策提供了重要的技术支撑。这些工作在很多领域具有开创性，造就了一批专业齐全、素质优良、结构合理的一流专家队伍，涵盖规划、勘测、水文、水工、施工、机电、移民、环境保护、水土保持、工程造价、经济评价、信息化和工程管理等专业。他们善于从全局和战略高度系统地、完整地把握水利重大战略与技术问题，具有丰富的实践工作经验，具备从事水利重大战略与技术咨询研究的能力，具备处理水利工程建设中各类复杂问题和水治理与水管理复杂问题的能力。

42



大藤峡水利枢纽工程初步设计审查  
Review and examination of preliminary design of Datengxia hydro complex project

In recent years, the GIWP has organized the formulation of a large number of nationwide comprehensive and specialized planning, the technical verification, review and examination of plenty of key projects such as the South-to-north water diversion project, large river embankment reinforcement projects, large and comprehensive water control projects and large irrigation system projects and has provided important technical support for the government decision-making. These innovative work and achievements have helped cultivate a large number of experienced specialists

# 众擎

思皇多士，生此王国。  
王克生，维周之桢。  
济济多士，文王以宁。  
《诗经·大雅》



in a range of areas covering planning, reconnaissance, hydrology, hydraulic engineering, construction, electrical and mechanical equipment, personnel resettlement, environmental protection, water and soil conservation, cost estimation and budgeting, economic evaluation, information and project management, etc. These experts are well experienced and capable of solving the complex problems in practice. More importantly, they are good at dealing with the key water issues from a macro and strategic point of views.



引江济淮工程规划审查  
Review and examination of the Yangtze River-to-Huaihe River diversion planning

43





◎组织机构 | Organizational Structure

水利部水利水电规划设计总院

General Institute of Water Resources and  
Hydropower Planning and Design,  
Ministry of Water Resources



经纬



观经纬机杼，则重綵绣段，  
日日当成。  
唐·欧阳行周《送洪孺卿赴乡举序》



#### 中国水利水电勘测设计协会

中国水利水电勘测设计协会成立于 1985 年，是中国水利水电勘测设计咨询行业唯一的全国性社会团体。现有会员单位 469 家，覆盖了中国水利水电勘测设计行业全部甲级设计单位和骨干乙级设计单位。成立 30 多年来，不断宣传贯彻党和国家的各项方针政策和行业法规，调查研究、传递信息、交流经验，开展了单位信用等级评价、水资源论证单位水平评价与从业监督管理、水文水资源调查评价单位水平评价与从业监督管理、团体标准制定和发布、BIM 技术推广等工作，积极为会员单位提供服务，发挥了政府和企业之间的桥梁和纽带作用。

#### China Water Conservancy and Hydropower Investigation and Design Association (CWHIDA)

Founded in 1985, CWHIDA is the only nation-wide society in China's water resources and hydropower projects design and consultancy sector. It has 469 members including all the first-class and leading design and consultancy units in the sector. For more than 30 years, the policies of the party and the state, industry regulations have been continuously publicized and carried out. It also engaged in investigation and research, transmission of information, exchange of experience. CWHIDA has made continuous efforts to render services to its members including credit rating of design and consultancy units, capacity rating and oversight of water resources demonstration units and hydrology and water resources survey and appraising units, formulation and release of association standards, BIM technology popularization, etc. In this course, it has become a bridging link between the government and enterprises.

#### 水利部水利建设经济定额站

水利部水利建设经济定额站成立于 1989 年，主要职责是承担国家和水利部下达的水利工程建设相关经济定额工作，制订、修订水利工程造价管理制度，制订、修订大中型水利工程建设估算指标和概算、预算定额，对地方的水利水电工程定额编制原则、方法进行行业指导，控制定额总水平等。2002 年建立了完善的水利工程定额体系，满足了大中型水利工程建设管理与投资管理的需要。

#### Water Projects Construction Budgeting Quota Center, MWR

Founded in 1989, it works to formulate economic norms for water projects invested by the state, draft and modify regulations governing cost estimation and budgeting for water projects, prepare economic norms for large and medium-sized projects and provide guidance to the local water resources and hydropower projects construction authorities so that the budget of the local projects could be controlled within limit. Since 2002, it established and has been constantly improving the system of economic norms for water projects which renders great assistance to the governmental authorities in charge of the construction, management and investment of the large and medium-sized projects.

#### 江河水利水电咨询中心

江河水利水电咨询中心成立于 1992 年，是隶属于水规总院的咨询机构，业务范围主要包括水利水电规划编制、水利水电工程咨询及勘测设计、项目评估及咨询、工程建设监理、工程代建、工程总承包等。先后承担了黄河小浪底水利枢纽、南水北调中东线一期工程以及深圳东部供水、广西大藤峡、黑龙江尼尔基等 200 多项水利水电规划和工程项目的咨询、设计、监理和建设工作。

#### Jianghe Water Resources and Hydropower Consultancy Center

Jianghe Water Resources and Hydropower Consultancy Center was set up in 1992 as an advisory institution affiliated to the GIWP. Its businesses covers water resources and hydropower planning, water resources and hydropower projects consultancy, survey and design, project evaluation and consultancy, projects construction supervision, projects construction and contracting, etc. It has successfully completed the consultancy, design, supervision and construction of more than 200 projects including Xiaolangdi Hydro Complex Project, the South-to-North Water Diversion Project, Eastern Shenzhen Water Supply Project, Datengxia Project in Guangxi and Nierji project in Heilongjiang.

#### 北京中水源禹国环认证中心

北京中水源禹国环认证中心于 2002 年成立，具备质量、环境和职业健康安全管理体系认证资格，是从事管理体系认证、培训和安全生产标准化咨询、达标评审的专门机构。秉承“运作规范、评定准确、作风严谨、服务诚信”的方针，竭诚为行业各单位提供相关服务。

#### Beijing Zhongshui Yuanyuguohuan Certification Center

Founded in 2002, it works to qualify and certify the related enterprises and institutions regarding the quality, environment and occupational health and safety. Its working manifesto is “to work according to standardized procedure, give accurate qualification and certification, work in a diligent and serious manner and provide trustworthy service”.

#### 中水东北勘测设计研究有限责任公司

公司拥有水利水电勘察、设计、咨询、监理、工程总承包以及建筑、市政、环保、电力、交通、通讯等行业的甲级设计资质，拥有水利水电项目的对外经营权，获得了在世界银行 DACON 系统及亚行、非行咨询机构的注册。

主要承担大江大河及国际界河的流域规划和水利水电建设项目的勘察和设计任务，先后与美国、加拿大、德国、土耳其、缅甸等 30 多个国家和地区开展专业方面的国际交流与合作。共完成国内外水利水电工程勘察、设计、咨询、监理以及工程总承包等大中型项目 200 余项，获国家、省、部级以上奖励 231 项，获国家专利 30 余项。

#### China Water Resources Northeastern Investigation, Design and Research CO., LTD

China Water Resources Northeastern Investigation, Design and Research CO., LTD was established in 1953. It enjoys first-class design credentials involving various industries such as water resources and hydropower survey, design, consultancy, supervision, project contracting, construction, environmental protection, electricity, transportation and telecommunications, etc. In addition, it has obtained the managerial authority for water resources and hydropower projects in other countries and has registered with World Bank DACON system and the consultancy institutions of the Asian Development Bank and African Development Bank.

It is mainly responsible for the survey and design of water resources and hydropower projects and the planning of major rivers and transboundary rivers basins. It has carried out business with more than 30 countries and regions including the former Soviet Union, the United States, Canada, Japan, Germany, Turkey, Burma and Pakistan, etc. Large and medium-sized projects that have been completed add up to more than 200 with the total installed capacity of 55000 MW for power generation, and the company has won 231 national, ministerial or provincial level prizes and more than 30 national invention patent prizes.

#### 中水北方勘测设计研究有限责任公司

公司拥有水利、电力、建筑、水运、公路、市政、农林等七个行业各类资质证书近 20 份，首批取得国家计量认证合格证书，具有独立开展对外经济技术合作业务的资格。

公司以水利水电勘测、设计、科研为主，跨地区跨行业多种经营，先后承担完成国内、外各类工程数百项，并与世界几十多个国家和地区进行技术交流和考察，数次代表我国政府对援外工程组织竣工验收工作。累计荣获部级以上科技奖励百余项，其中国家级奖励 37 项，国家级金奖、一等奖 11 项，多项成果达到国际先进水平。

#### China Water Resources Beifang Investigation, Design and Research CO., LTD

It owns nearly 20 qualification certificates for 7 sectors from water resources, electricity, construction, highways to agriculture and forestry. It also has the legal authority to carry out international economic and technical cooperation. The company's main business is water resources and hydropower projects survey, design and research and also with businesses in other industries. It has completed hundreds of projects both at home and abroad and carried out technical exchanges and study tours with foreign countries. So far, it has won over one hundred scientific and technological prizes above the ministerial level including 37 of the country-level and 11 national gold or the first class medals. Many of the achievements have reached the advanced international level.





大鹏一日同风起，  
扶摇直上九万里。  
——唐·李白《上李邕》

长江  
The Yangtze River





GENERAL INSTITUTE OF WATER RESOURCES  
AND HYDROPOWER PLANNING AND DESIGN  
MINISTRY OF WATER RESOURCES

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