

1. MAINLAND CHINA

1.1 WRM Policies and Actions

In 1988, the Water Law (中華人民共和國水法) is promulgated and implemented as the first fundamental law for the management of marine activities. After the revision of the Water Law passed by the Ninth National People's Congress, it came into force on 1 October 2002. The Water Law is the fundamental law to standardise all the marine activities. It has stipulated that water resources is owned by the country, and it also sets out the policy, principle, basic control system and the management system of the development and utilisation of water resources.¹

The basic principles of WRM in Mainland China include the following eight aspects:²

- **Water resources investigation and assessment:**
Water resources investigation and assessment shall be undertaken by both the Ministry of Water Resources (MWR) and other Water Resources Departments.
- **Integrated plan for water resources:**
This is based on the unified river basin or regional basin plans. The regional plans must obey the basin plans while the special plans must obey the unified plans. The national guidelines for integrated water resources plans are still drafting.
- **Water-drawing permits:**
Drawing surface water or groundwater shall refer to the legal proceedings by applying permits, and be charged for acquiring the right to use water resources.
- **Water allocation and regulation:**
MWR takes the basin as a unit to formulate water allocation plans, the standard of total water uptake and the water volume dispatch plans. It is authorised by the State Council or any other departments authorised by the Council. With reference to this plan, Water Resources Departments and River Basin Authorities are responsible for the establishment of the annual operation plans and the water-drawing plans.
- **Water Use Plan and Water Saving:**
According to the authorised water resources disposition and dispatching plans, all levels of Water Resources Departments shall issue water-drawing plans estimating the total quantity that users needs. Users shall then follow the plans. For any overuse in the quantity, users shall bear the extra fee. Besides, different units and individual users shall follow the stipulated standards to discharge sewage effluent or to reduce sewage disposal.
- **Water resources protection:**
The Water Resources Departments and River Basin Authorities, working with Environmental Protection Departments, are responsible for delimiting the water function regionalisation of rivers and streams. According to this authorised regionalisation, the water administrative department above county level shall check and ratify the pollutants bearing capacity of the certain water zone, and shall provide comments on the limit of pollution discharge to the environment

¹ Extracted from <http://www.mwr.gov.cn/ldxw/wsc/zyjh/20020905000000000967.aspx>

² Reference is made to a presentation by the Ministry of Water Resources of the People's Republic of China, <http://www.chinacitywater.org/bands/books/zgd.pdf>, Page 13-32

department. The water administration department carries out the monitoring of the related water function zone. Establishment and expansion of the pollution outlet must be approved by the water administration department or the watershed management organisation.

- **Water resources fee and the water tariff:**

The exploration and utilisation of water resources must pay the water resources fee to the MWR. Consumers of water must pay to Water Supplies Unit.

- **Dispute resolution for water issues:**

Water Dispute is consulted through administrative proceeding, or may be directly instituted in the court.

The Water Law assigns that the State shall implement river basin management system in coordination with administrative region management.^{3,4} Below shows the responsible departments and their duties on water management resources under the Water Law:

- The MWR is in charge of the unified administration and supervision of water resources.
- River Basin Authorities, in accordance with the duties assigned to them, be in charged of the management and supervision of water resources within administrative division at corresponding level. At present, seven river basins have been set up throughout China. The authorities in charge of these river basins shall, not only manage and audit completely for the water resources in the local areas, but also audit for the relevant water resources management within the river basins. The scope of the river basin management basically covers the whole river.
- Water Resources Departments at and above the county level shall, in accordance with the duties assigned to them, be in charged of the related undertakings of management and supervision of water resources within administrative division at corresponding level.

In 1993, Mainland China has promulgated a document to strengthen the Water Law on how to manage water resources, named “取水許可制度實施辦法”⁵, and has issued “取水許可與水資源管理條例” (below called as “Regulation”) on 21st February 2006, to carry on the comprehensive revision of “取水許可制度實施辦法”. “Regulation” has superseded the “取水許可制度實施辦法” and has clarified the following:⁶

- definition on classifications in different management levels on water-drawing permits
- further clarification on the details of water-drawing and the coverage on water-drawing permits
- simplify the procedures on application of water-drawing permits
- the monitoring system to strengthen the policies
- emphasis on the protection of public asset, for example, the ecology, the environment and so on, which can improve the water-drawing permits’ system

³ Reference is made to a presentation by the Ministry of Water Resources of the People’s Republic of China, <http://www.chinacitywater.org/bands/books/zgd.pdf>, page 6-12

⁴ Reference is made to the website of Water Resources Act, http://www.gov.cn/ziliao/flfg/2005-09/27/content_70625.htm, No. 12

⁵ Full document can be found at <http://www.chinawater.net.cn/law/W03.htm>

⁶ Extracted from the website of “Official Notice of 《取水許可與水資源管理條例》”, <http://www.mwr.gov.cn/index/20060412/70159.asp>

- the new requirements on water resources fee, defining the scope and main contents of the water resources fee, explaining its formulation principles.

1.2 Environmental Evaluation/SEA in Mainland China

In China, it is a statutory requirement under the National Environmental Impact Assessment Law (People's Republic of China) (《中華人民共和國環境影響評價法》), which came into force since 1 September 2003, that environmental impact assessment should be implemented for plans, programmes and construction projects. The Environmental Impact Assessment (EIA) Law (People's Republic of China) incorporates the concept of SEA for development plans and programmes.⁷ It is therefore considered as a SEA-type statutory instrument for environmental appraisal of plan and programme, but excluding policy.^{8, 9} As there is little experience on assessment of policies in Mainland China, it is considered to exclude environmental assessment for policies from the context of the EIA Law.¹⁰

The EIA Law stipulates the SEA-type assessment for plans and programmes that should be carried out for:

- (i) the land use planning, or development plans of regions, river basins or sea areas;
- (ii) the plan or programme is drawn up for purposes of industry, agriculture, livestock breeding, forestry, energy, water management, transport, regional development, tourism or nature conservation.

After the assessment, the responsible authorities shall prepare an environmental report, which shall:

- (i) analyse, estimate and assess any potential environmental impacts that would appear with the execution of the proposed plan or programme.
- (ii) suggest any prevention methods or mitigation measures to relief the environmental issues that may occur.
- (iii) make conclusion of the environmental impact assessment.¹¹

In order to specify which areas require environmental assessment as stated in Article 2 of No.7 and No.8 in the EIA Law, the State Environmental Protection Administration of China (SEPA) issued notices called 《編制環境影響報告書的規劃的具體範圍（試行）》 and 《編制環境影響篇章或說明的規劃的具體範圍（試行）》¹² in 2004.

⁷ Reference to "Environmental Impact Assessment Regulations and Strategic Environmental Assessment Requirements - Practices and Lessons Learned in East and Southeast Asia" by the Environment and Social Development Department, East Asia and Pacific Region, The World Bank
<http://siteresources.worldbank.org/INTEAPREGTOPENVIRONMENT/Resources/EIA&SEA-regional-review.pdf>, Annex 2 - China

⁸ References made to a speech by Pan Yue, the Vice Minister of the State Environmental Protection Administration of China, http://www.sepa.gov.cn/zxbd/lsglt/200508/t20050829_11834.htm

⁹ References made to a presentation material called "Theory and Practice of Development of SEA in China" by Dr. Chui Hok - University of Nam Hoi (Research Center of SEA),
<http://info.worldbank.org/etools/docs/library/211097/Shaanxicn1.pdf>, page 17, 34 & 41

¹⁰ Extracted from a speech by Qu Geping, a member of Environmental Protection and Resource Conservation Committee of National People's Congress in 2003,
http://www.cyol.net/cydgnet/content/2003-02/13/content_610177.htm

¹¹ The National Environmental Impact Assessment Law (People's Republic of China), Article 2 No.7 - 10,
http://www.sepa.gov.cn/law/law/200210/t20021028_84000.htm

¹² Originated from the web site of China Environment Impact Assessment,
<http://www.china-eia.com/indexcontent/zjwj/0100002.doc>

With the stipulation of the new EIA law, the procedural steps to undertake SEA-type assessment for any general and special plans and programmes are described below:

- The plan and programme can be implemented only after the approval of the relevant assessment report.
- The department to draft the proposal of the plan/programme should also prepare the assessment report and submit to the supervised administration or local government for the approval.
- Prior to the proposal approval by the supervised administration or local government, the assigned environmental protection administration or other administration associated with the deputation of relevant department and experts should implement the auditing of the report and draw the conclusion.
- The supervised administration or local government should put the conclusion and suggestion for the assessment report as an important reference for decision making. If the conclusion and suggestion are not adopted, necessary explanation must be done and recorded for further checking.
- For those plans having great impact to environment, the department responsible for drafting the proposal should also track the practical impact during the execution of the plan.¹³

The procedural steps to undertake SEA-type assessment for general plans and programmes (e.g. related to land use planning, or development plans of regions, river basins or sea areas) and that for special programmes for different sectors (like industry, agriculture, livestock breeding, forestry, energy, water management, transport, regional development, tourism or nature conservation) are presented in **Exhibit CN-1** and **Exhibit CN-2** respectively.¹⁴

¹³ References made to a presentation material called "Theory and Practice of Development of SEA in China" by Dr. Chui Hok - University of Nam Hoi (Research Center of SEA),
<http://info.worldbank.org/etools/docs/library/211097/Shaanxicn1.pdf>

¹⁴ References made to a presentation material called "Theory and Practice of Development of SEA in China" by Dr. Chui Hok - University of Nam Hoi (Research Center of SEA),
<http://info.worldbank.org/etools/docs/library/211097/Shaanxicn1.pdf>, pages 43, 44

Exhibit CN-1 Procedural steps to undertake general SEA-type assessment

综合性规划 环评程序

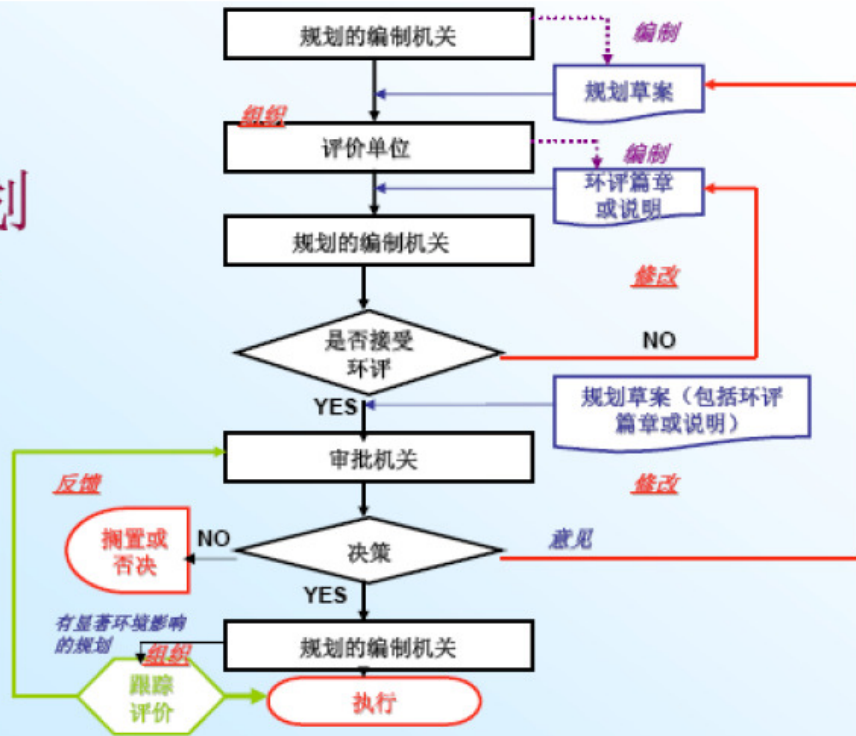
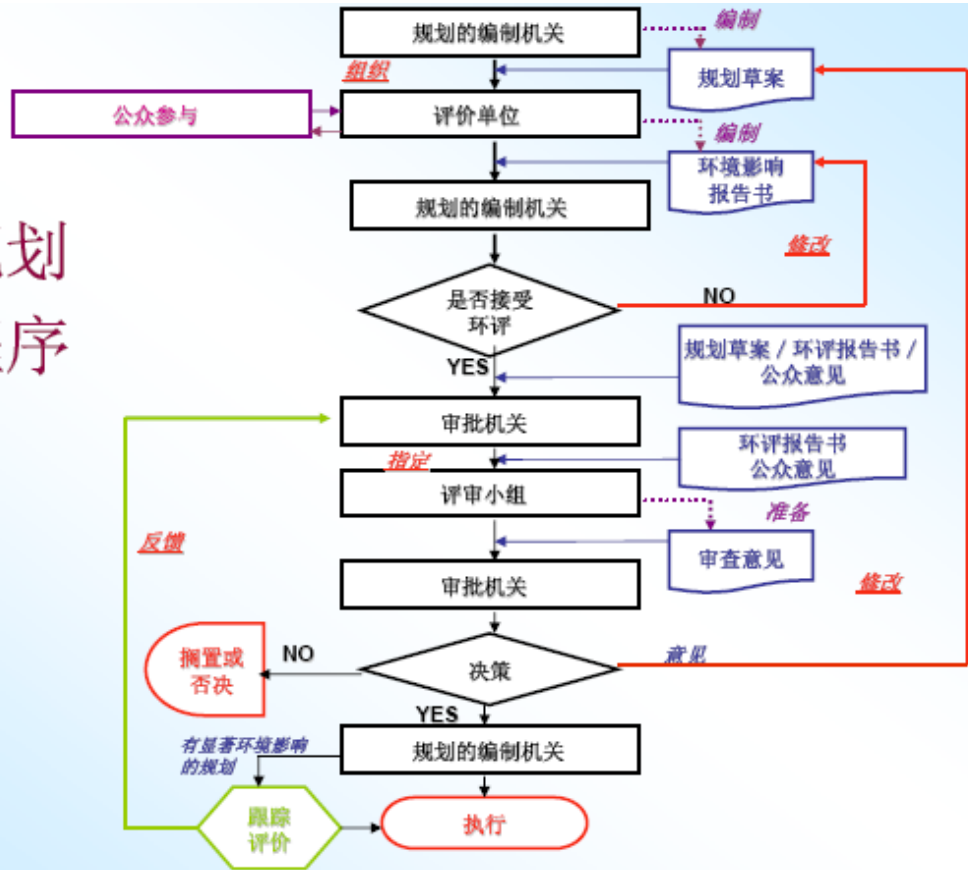


Exhibit CN-2 Procedural steps to undertake special programme of SEA-type assessment

专项规划 环评程序



1.3 Environmental Evaluation/SEA on Water Resources Management in China

According to the EIA Law mentioned in section 1.2, it stipulates the SEA-type assessment for plans and programmes that should be carried out for:

- the land use planning, or development plans of regions, river basins or sea areas;
- the plan or programme is drawn up for purposes of industry, agriculture, livestock breeding, forestry, energy, water management, transport, regional development, tourism or nature conservation

According to 《編制環境影響報告書規劃的具體範圍（試行）》 and 《編制環境影響篇章或說明規劃的具體範圍（試行）》¹⁵ issued in 2004, it is specified that plans and programmes related to water resources management should carry out SEA. They include:

- the general plans for development and utilisation of water resources in river basins and regions involving in the usage of rivers and lakes, as well as the special plan for water supply and hydropower
- water transfer plans among river basins at municipality with districts or above
- plans for development and utilisation of underground water resources at municipality with districts or above
- national strategic plans of water resources
- national plans flood control
- plans of flood control, waterlogging control and irrigation at municipality with districts or above

It is noticed that the development, utilisation, saving, protection of water resources as well as the prevention and control of water disasters shall be planned in a unified way on the basis of river basins and regions. The regional plans for river basins shall be subordinated to plans for river basins. The special plans shall be subordinated to comprehensive plans.

The unified plans that mentioned above refer to the needs of economic and social development with the water resources development using the present establishment to develop, utilise, save, protect the water resources and to prevent any water disasters. The special plans mentioned above refers to flood prevention, control of waterlogging, irrigation, shipping, water supply, hydro electricity generation, bamboo exile, fishery, water resources protection, conservation of water and soil, control against sand, plans and so on to economise on water.¹⁶

For the process and requirements on “EIA for Plans”, information can be referred to Section 1.2.

A summary table for both the water resources management policies and actions and SEA status in Mainland China is presented in **Exhibit CN-3**:

¹⁵ The full document can be obtained at <http://www.china-eia.com/indexcontent/zjwj/0100002.doc>

¹⁶ Extracted from http://www.gov.cn/ziliao/flfg/2005-09/27/content_70625.htm, No. 14

Exhibit CN-3 Summary of Water Resources Management (WRM) Policies and Actions and SEA status in Mainland China	
(a) WRM Policies and Actions	
WRM Policies and Actions	Policies: <ul style="list-style-type: none"> 取水許可制度實施辦法 Actions: <ul style="list-style-type: none"> N/A
Guidance/Legislations in WRM	Water Law (中華人民共和國水法)
(b) Environmental Evaluations / SEA Status in WRM Policies and Actions	
Type of Assessment	EIA for plans
Requirement Mechanisms	Statutory
Legislation for Environmental Evaluation / SEA	National Environmental Impact Assessment Law (2003) (EIA Law)
Applications	Plans and Programmes



Water Plant¹⁷



Source: "Tianjin"¹⁸

¹⁷ Extracted from the website of The Administrative Committee of Zhangjiagang Free Trade Zone, http://js.efair.gov.cn/wangbo_hy/wb050001/ebsq_h30.htm

¹⁸ Extracted from "Brief introduction of the planning for South-to-North Water Transfer", http://www.mwr.gov.cn/english2/project_introduction/nsbd/23.htm

1.4 Analysis and Conclusions

WRM Policies

In Mainland China, water resources are declared national properties, and managed and regulated by the Ministry of Water Resources through the Water Law which governs the allocation, protection and tariffs of the water resources. In order to strengthen the concept of water-drawing permits, a document “取水許可制度實施辦法” has been issued.

Regarding water resources in Hong Kong, there is a close relationship with Mainland China. Hong Kong's two main sources of water are from rainfall from natural catchment and supply from Guangdong. It is Water Supplies Department's (WSD) scope of work to cover the whole process from the collection of natural yield from rainfall, the reception of raw water from Guangdong to the provision of a supply with a quality of accepted international standards to the users' taps. WSD also supplies sea water for flushing purposes to over 80% of the population. For protection against flooding, sewage collection, treatment and disposal, it is under Drainage Services Department's (DSD) jurisdiction.

For the sustainable development of Hong Kong, WSD has initiated a *Total Water Management programme* comprising key elements of new water resources, water reclamation, water conservation and water resources protection and management was initiated for better utilization of the different water resources.

Also, Hong Kong, while is part of Guangdong province, has a neighbour city, Shenzhen, to the north. Effective transboundary cooperation is considered to be essential for the protection of inland water bodies.

EE/SEA

With regard to the requirements of environmental evaluation in China, the requirements on SEA-type assessment is stipulated in the EIA Law. The Law stipulates that SEA-type assessment is required for plans and programmes for:

- land use planning, or development plans of regions, river basins or sea areas;
- plan or programme is drawn up for purposes of industry, agriculture, livestock breeding, forestry, energy, water management, transport, regional development, tourism or nature conservation.

Hong Kong's SEA/EE is under Environmental Protection Department's (EPD) jurisdiction. At present, there are both statutory and administrative systems for PPP projects. While the statutory requirements govern primarily large scale development projects (i.e. over 20 ha of area or population over 100,000), the administrative counterpart has been applied to land use planning, transportation and sectoral PPP.

In Mainland China, only a statutory system is put in operation. As a Special Administrative Region of the Mainland China, Hong Kong may adopt a similar approach by expanding the scope of the current statutory system to cover other sectors, such as WRM, and phasing out the administrative counterpart gradually.

1.5 Examples of Water Resources Management Policies / Actions or their Environmental Evaluation/SEA

Example CN-1 Plan report for Water resources protection in Zhenyuan County, Guizhou Province (貴州省鎮遠縣水資源保護規劃報告)¹⁹	
Description of Study	Based on the water function regionalisation and the combination with the Zhenyuan County socio-economic development conditions, the goals of water resources protection for Wuyang river basins for the coming years are identified. They include: <ul style="list-style-type: none"> ● Propose and enforce the standards of pollutants' concentrations in every basins and outlets in every cities ● Use all kinds of management and supervision measures to keep the water cycle in a right way, to protect the continual use of water resources and to enhance the sustainable development of the social and economic of Zhenyuan County
Scope of Assessment/ Study	The evaluation parameters considered in the study include: <ul style="list-style-type: none"> ● Using congruously of the chemical oxygen demand (COD) and the ammonia nitrogen (NH₃-N) as the indicator of pollutant control. ● Adding the total amount of Nitrogen and Phosphorus in the water as the indicators of pollutant control for the obvious eutrophication at the East Valley power plant reservoir; ● Adding the other figure as the indicator of pollution control which can reflect the water body polluting property in specially polluted river system.
Environmental Measures	Environmental measures considered in this study include: <ul style="list-style-type: none"> ● Engineering measures for water resources protection: <ul style="list-style-type: none"> ➢ Decentralise processing of the industrial pollution, implement the clean production, reduce the pollutant output, and build the sewage treatment facility to achieve the standards of emissions. ➢ For agricultural pollution: change the agriculture structure, encourage green agriculture, reduce the utilisation of virulent agricultural chemicals and the chemical fertilisers, use biological fertilisers and biology agricultural chemicals ➢ For domestic sewage: Establish centralised and decentralised sewage treatment works ● Non-engineering measures for water resources protection: <ul style="list-style-type: none"> ➢ To establish and finalise the water resources protection management system and the operational mechanism ➢ To suggest water resources protection policy laws and regulations
Outcome of Study	<ul style="list-style-type: none"> ● It is found that the current river basin has been heavily polluted and has an increasing trend. Since 2000, the Wuyang River received 58.82 tonnes of industrial and residential sewage. The contents of Lead, Zinc, Phosphorus, Suspended Matters and Demand Oxygen have been increased. Besides, fertilisers and other solid waste have entered the river without any treatment, this pollute the surface water seriously. In order to improve the situation: Water quality levels has been categorised for different water use purposes. Temporarily, there are two levels: Level 1 and Level 2. Level 1 includes one protection area, two reservation areas, one development and utilisation area, while for Level 2, it defines as the categorisation in the utilisation area in

¹⁹ Full document can be obtained at <http://www.shuigong.com/forum/attachment.php?aid=4465>.

Example CN-1 Plan report for Water resources protection in Zhenyuan County, Guizhou Province (貴州省鎮遠縣水資源保護規劃報告)¹⁹

	<p>Level 1, which includes one recreation area and one sewage control area.</p> <ul style="list-style-type: none">● Pollution control for the content of COD and phosphor: the main pollution sources are industrial and residential sewage, thus, a sewage control area has been set up between Dacaiyuan hydrological station to East Valley Power Station.
--	---

Example CN-2 General water resource plan in Ningbo Municipality (寧波市水資源綜合規劃)²⁰	
Description of the Study	The Ningbo water resources integrated plan was carried out: <ul style="list-style-type: none"> ● To develop water resources properly and utilise them scientifically ● To strengthen the scientific management of water resources ● To enhance water use efficiently ● To promote the sustainable use of water resources ● To safeguard the economic society sustainable development
Scope of Assessment/ Study	The evaluation parameters considered in the study include: <ul style="list-style-type: none"> ● Chemical Oxygen Demand (COD) ● Ammonia Nitrogen
Environmental Measures	Several actions shall be taken to achieve the goals: <ul style="list-style-type: none"> ● To plant trees and grasses, return farmlands to forests, and build and protect forests; ● To prohibit any kinds of activities that may cause pollution of drinking water sources ● To establish and consummate water resources monitoring network gradually, complete the construction of water surveillance network of large and middle scale reservoirs; ● To control strictly the total quantities of effluent discharge to the rivers according to the distribution and water quality on the water usage ● To enlarge dynamics to regulate the water quality of reservoirs; ● To speed up the construction of sewage treatment facilities and the effluent discharge piping networks.
Outcome of Study	This study has the following outcomes: <ul style="list-style-type: none"> ● Based on the data analysis result, the total water demand would reach to 25.67 billion m³, 30.61 billion m³ and 31.15 m³ in the year 2010, 2020 and 2030 respectively. ● Targets of water saving have been set to the year 2010 and 2020 on industrial, agricultural and residential areas. For industrial areas, the application of reused water will increase to 65% and 75% up to 2010 and 2020 respectively. For agricultural areas, the efficiency of using water will improve to 55% and 65% up to 2010 and 2020 respectively. For residential areas, the daily consumption rate for a person will be controlled to less than 270 Litre and 300 Litre for people living in cities, while the rate will be controlled to be less than 130 Litre and 150 Litre for people living in rural areas, for 2010 and 2020 respectively. ● Targets of pollution reduction in the total amount of both COD and Ammonia Nitrogen have been set for the year 2010 and 2020. Up to the year of 2020, their total emission amount would have been reduced 55,609 tonnes per year and 3,684 tonnes per year.

²⁰ Full document of “寧波市水資源綜合規劃” can be found at www.nbdpc.gov.cn/webmagic/eWebEditor/UploadFile/20070516095418574.doc.