Ministry of Industry and Information Technology Published "Directory of Process, Technology and Equipment for Industrial Water Saving Encouraged by the State (First Edition)" (Draft)

On December 25th, 2013, the Ministry of Industry and Information Technology published "Directory of Process, Technology and Equipment for Industrial Water Saving Encouraged by the State (First Edition)" (Draft) on its website.

The Ministry of Industry and Information Technology said that in order to speed up the promotion of advanced and applicable industry water saving process, technology and equipment and improve the water use efficiency in key industries, through recommendations by local industry and information authorities and related industry associations and evaluation by experts, the Ministry of Industry and Information Technology published "Directory of Process, Technology and Equipment for Industrial Water Saving Encouraged by the State (First Edition)" (Draft). The directory lists 91 technologies in 12 large categories, covering industries including steel, thermal power, petrochemical, chemical, textile, pulp & paper, food, and fermentation, etc., as well as commonly applicable technologies. There are three technologies that are related to the pulp & paper industry, as shown in table 1.

Table 1 Technologies Related to the Paper Industry and Published in "Directory of Process, Technology and Equipment for Industry Water Saving Encouraged by the State (First Edition)" (Draft)

Name of the technology	Content of the technology	Application prospect	Source & current user	Application example
Multi-disc filtering water saving technology	The multi-disc white water filter uses paper fibers as the filtration material. When white water passes through, the fibers in it are retained and form a fine filtering layer. The quality of the filtered water is divided into three levels according to its turbidity: white water, clear white water and super clear white water. The clear and super clear white water can be directly used as production water for paper machines. This technology allows water to be used in a closed cycle, which effectively reduces water consumption and waste water pollution and saves water resource. The recovered fibers can be used for papermaking on paper machines.	Suitable for the recycling of white water from paper machines. At present, the application rate of this technology is only about 10%, which is expected to increase to 20% by 2015, resulting in an annual water saving of about 40 million m^3.	Wenrui Machinery (Shandong) Co., Ltd.	Ji'an Group Co., Ltd. adopts this technology. The equipment was put into operation in March 2012 and the total investment was RMB 24.83 million. The water reuse rate of the production line is more than 95%, and the amount of water recovered annually is over 27 million m^3. The water usage per ton of paper is only 5~9 m^3 for the papermaking process.
The mixing addition technology for papermaking wet-end chemicals	The technology uses advanced stock delivery system and addition equipment for wet-end chemicals, enabling the water consumption per ton of paper to be reduced by 50%. The clean water usage in the wet end per ton of paper is reduced by 2~3 m^3. Suitable for installation in the wet-end of paper machines, stock feeding system, or inlet or outlet of pressure screens. Wet end chemicals were injected into the stock stream through Trump Jet Mixer that very closes to the head box, achieving perfect mixing with pulp instantaneously. The equipment makes good use of stock jet stream instead of additional clean water for chemical addition and mixing, hence eliminates the use of fresh water for the same purpose.	Suitable for the addition and mixing systems for chemicals in papermaking wet-end. At present, the application rate is about 5%, which is expected to increase to 10% by 2015, resulting in an annual water saving of about 20 million m^3.	Finland Wetend Technologies Ltd.	Shandong Sun Paper Industry Co., Ltd. adopts the technology in its three paper production lines of 200,000 t/a, 300,000 t/a, and 400,000 t/a, respectively. The total investment is RMB 20 million and the annual water saving achieved is about 2.4 million m^3.

Name of the technology	Content of the technology	Application prospect	Source & current user	Application example
Closed washing & screening technology for brown pulp	Washing water is injected in from the last stage of the multi-stage washing process and moves forward stage by stage, allowing weak washing water to be in contact with stock containing low concentration of waste liquor, and concentrated washing water to be in contact with stock containing high concentration of waste liquor, resulting in the washing efficiency improved. The technology uses the lowest dilution factor and highly effective diffusion to displace the solids in the brown stock in a closed washing system, resulting in zero waste water discharge, significantly improved black liquor extraction yield and hence increased alkali recovery rate, reduced waste water load in the middle stages, and sharply reduced water consumption.	Suitable for chemical pulping processes. At present, the adoption rate of the technology is about 50%, which is expected to increase to 70% by 2015, resulting in an annual water saving of about 100 million m^3.	ANDRITZ Group (China), Yantai Huari Paper Machinery Co., Ltd.	Adopted by Qianwei Fengsheng Paper Industry Co., Ltd. of Sichuan province in its relocation and upgrading project. The technology was put into operation in March 2013 with the total investment of about RMB 35 million for the closed washing & screening system. The annual water saving achieved is about 5 RMB million m^3.