

## Rating Methodology for Water Utilities Industry

### Summary

This rating methodology adopted by China Chengxin (Asia Pacific) Credit Ratings Company Limited (“CCXAP”) applies to Water Utilities industry globally whose principal line of business is the provision of water and/or wastewater services, except for the pure water or sewage treatment technology or construction firms. This rating methodology provides general guidance that helps companies, investors, and other interested parties understand the key determinants but not exhaustively that affect the rating result for water utilities companies. CCXAP assigns credit ratings to them using its rating scale.

### Introduction of Rating Methodology

Given the public importance of water supply related to its service provision, most water services are provided by government entities that are not wholly subject to independent regulation for setting a marketable service charge. Even where the services is privatized, the industry still have strong links to national, regional or local government bodies in order to ensure the company to comply with the regime environmental and safety standard. The companies being rated by this methodology may provide wholly or partial services along the entire value chain of the service process from water resources/collection, processing distribution network to the end customer, sewage services or purely asset providers. Most of the revenue or cash flow generated is under a regulated licensing, concession or similar arrangement with the local government or individual customers and the asset may be owned or operated by a company under the terms of concession or license.

The key rating determinants for the assessment on water utility companies are divided into qualitative and quantitative determinants. The rating methodology provides a summarized guidance for the important factors used in assigning ratings, but it does not include all aspects of rating consideration. As a result, the mapped rating may not match the final rating of each company.

In this rating methodology, there are four rating factors comprising 11 sub-factors, as follows:

Rating Factors	Sub-factors
Operational Environment	Stability and Predictability of Regulatory Environment Development of Economic and Industrial Environment
Business Profile	Operating Capacity Operating Efficiency Operational Volatility Risk

	Business Sustainability
Financial Profile	EBIT Margin
	Total Debt/Capitalization
	FFO Interest Coverage
	FFO/Total Debt
	RCF/Capex

## Key Rating Determinants

Rating factors and sub-factors are discussed in details in this section, including their rationale, measurement and how they will affect the rating.

### 1. Operational Environment

In the evaluation of operational environment, CCXAP reviews the broader water utility markets as a combination of the stability and predictability of regulatory environment as well as the development of economic and industrial environment. Water Utilities sector in general typically provides monopoly-type and price inelastic services. Therefore, the water tariff is closely monitored by the government or regulators for public consideration. When setting the water tariff, the regulators may account for the financial willingness and capability of the public end-users. If the overall economic and industrial environment is great, the water price has a reasonable room of increase. Moreover, the increase in transparency and the stability of the regulatory framework will help improve the overall operational environment in the sector and prompt the water price upward in long run.

#### (1) Stability and Predictability of Regulatory Environment

CCXAP believes that the better stability and predictability of regulatory environment, the better the operational environment for the sector companies. If the regulatory regimes have a long track record of well-established regulations as well as clearly defined risk and rewards, which have been consistently applied and disclosed to the public with sufficient transparency, this sub-factor will obtain a higher score. We also take into account of the legal right in the regime like how the law enforcement in practice. If a company is located in a very weak legal protection region, it may result in a lower score as expected.

#### (2) Development of Economic and Industrial Environment

The regional economic size, economic structure and population density as well as the level of water services demand growth provide a fundamental support to the sector. CCXAP considers those factors will give a room of tariff increase. In a mature and well developed economic region, the financial capability of customers generally is higher than those undeveloped one. In addition, well-established water infrastructure and high water supply coverage create a business-friendly operation environment to the companies in the regime. We also aware that in an economically mature region water services demand growth is relatively low in relation to higher coverage ratio. As such, we will evaluate the development stage in different water services and the extent of service diversification in the specific regime that give a substantial support of tariff increase.

## 2. Business Profile

In the assessment of business profile, CCXAP reviews the broader water utility market in company's operating capacity, operating efficiency, operational volatility risk, and business sustainability. The business profile factor reflects the non-financial aspects of the company.

### (1) Operating Capacity

CCXAP believes that the company's operating capacity is representative of overall business profile of the company. We consider the operating capacity and total revenue of the company's key water assets to assess its operating scale. Moreover, other competitive strength of the company will be considered in the rating of this sub-factor. An advanced technology, well-known reputation across industry, high level of regional monopoly, large scale of operating assets, diversified geographical business operation and experience in leading water projects can be viewed additional operating strength to the Company that is deserved to be score higher.

### (2) Operating Efficiency

Operating efficiency can be representative of the company's business performance to comply with the regulatory requirement and concession agreement. CCXAP may consider this factor by the company's key asset performance metrics. Deteriorated performance metrics like high leakage ratio, poor supplied water quality, and weak water pressure rate, in the company's key water or sewage assets may reflect a poor asset condition or asset monitor. With a stable performance in its water assets, it could also help reduce the impact of unexpected expenditure on emergency asset repair. Some companies may be required by the regulators to launch sizable asset upgrade/maintenance program for material asset failure or under-performed assets, which not only affect its financial stability but also the probability of renewal of contract in the future. CCXAP may consider that if a company historically exhibited a serious asset failure, the more likely to obtain a very low score.

### (3) Operational Volatility Risk

Even the water utilities sector immune from economic cycle, the company may expose to some volume volatility in connection with seasonal water demand from year to year. Some companies may be affected by change of usage pattern from its customers or unexpected change of water supply by regional scarcity. Others may have high concentration risk in which rely on individual customers that generate a large proportion of revenue. If this particular customer under influence from economic change or shift its business operation to other regions, it may cause a significant portion of revenue lost, making a negative impact on the company's business profile. Thus, diversification of regional operation and customer structure can reduce such risks as a result of higher score in this sub-factor.

### (4) Business Sustainability

This sub-factor is evaluating a company's business sustainability as a combination of asset ownership model and cost and investment recovery. If all water assets are held outright in perpetuity by the Company and the cost of investment with a sufficient profit margin recovery on a timely basis, it will be more likely to obtain the highest score in this sub-factor. In most cases, however, companies hold the water assets under a concession contract or license with a certain period of time. CCXAP will consider

the average concession life, the track record of license renewal, investment recovery mechanism and the consistency of obligation of the compensation arrangement.

### **3. Financial Capability**

In the evaluation of financial strength, CCXAP measures EBIT Margin, Total Debt/Capitalization, FFO Interest Coverage, FFO/Total Debt and RCF/Capex. The main purposes of this rating factor are to assess the issuer's profitability, financial leverage and coverage as well as the capability of generating internal funding to meet its capital expenditure.

#### **(1) EBIT Margin**

This indicator is calculated by EBIT dividing by revenue, which measures the company's competitive position and the cost efficiency in operation. EBIT is selected for ease of peer comparison. Depreciation is a material operation cost and is considered when the company setting its tariff level. The higher the EBIT Margin, the better the company profitability and cost control.

#### **(2) Total Debt/Capitalization**

To assess the financial leverage of a water utility company, CCXAP uses the capitalization ratio, which is calculated by dividing total debt by total capital. Total debt refers to interesting bearing debt including bonds, notes, short-term and long-term borrowings. A higher leverage exerts pressure on the company's ability to raise funds and the probability of repay debts in a certain period of time.

#### **(3) FFO Interest Coverage**

CCXAP considers the FFO interest coverage as a material indicator of the company's ability to meet interest payments with internal cash generation. FFO is CFO minus working capital of which measurement ignores the contingent effect of operating capital needed to maintain the company's asset base, allowing a wider comparison across various operators globally.

#### **(4) FFO/Total Debt**

Company is required to maintain sufficient free cash for fulfilling mature debt and capital expenditure. The ratio of FFO/net debt may be a more reflective indicator to assessing the ability of debt repayment. However, it is not statistically easy to find out because some company's usage of cash may be limited or the cash is being pledged. Thus, CCXAP applies FFO/Total debt for comparison across the sector.

#### **(5) RCF/Capex**

This sub-factor reflects the ability of the company generating retained cash to meet its capital expenditure. RCF is calculated by FFO minus cash dividend paid. In some regions, dividend may be substantial as a proportion of its profit, resulting a permanent cash outflow to a company, thus RCF is a more representative indicator for measurement. In general, water utility companies are required capital expenditure for maintenance and asset improvement in order to sustain a good condition in its water supply asset. If the capex needed exceeds RCF, it will exert a capital pressure on a company. Thus, the higher the ratio of RCF/Capex, the higher score in this sub-factor.

## **Other Rating Considerations**

Other than the factors and sub-factors discussed as above, ratings may consider a number of additional factors that are included but not limited to: government or parental support, corporate governance, non-core business risk, event risk.

### **Corporate Governance**

In this aspect, we generally evaluate the audit committee financial expertise, incentives structure of executive compensation packages, related party transactions, reliability of financial information, executive dynamics and expertise, and the ownership structure.

### **Non-core Business Risk**

Other than its primary activity of providing water services, an operator may seek to diversify its business to other business types, such as electricity, gas, environmental services and other utilities, which may post credit risk to the company. Thus, we will consider the impact of such diversification on the company's credit quality.

### **Event Risk**

CCXAP will consider the possibility of unexpected events that could cause a sudden and sharp decline in the issuer's overall credit profile, including asset sales, spin-off, capital restructuring program, change of major shareholders, mergers and acquisition and significant restructuring program.

### **Government or Parental Support**

Given high business relation with regional government in the water utilities sector, CCXAP gives consideration to the company background and external support when assessing a company's overall credit strength. CCXAP believes that a company with government background may benefit from government support in the economic downturn. CCXAP also views that a company with strong shareholders may receive parental support in terms of capital and asset injection.

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#### **China Chengxin (Asia Pacific) Credit Ratings Company Limited**

Address: Suites 805-808, 8/F, Jardine House,  
1 Connaught Place, Central, Hong Kong

Website: [www.ccxap.com](http://www.ccxap.com)

Email: [info@ccxap.com](mailto:info@ccxap.com)

Tel: +852-2860 7111

Fax: +852-2868 0656