

**Water Utility: Can Tho Water Supply & Drainage Company (CTWSC)**

Can Tho, Can Tho, Vietnam

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**Services Provided:** Piped water, Wastewater, Storm water, , Other: Water Material Sales & Production; Production of Purified dring water**Utility Type:** , , , State Owned Enterprise, , ,**Private Sector Involvement:** None, , , , , ,**Source of Raw Water:** , , Direct river abstraction, , ,**Treatment Method:** , Disinfection, Filtration, , Aeration, ,**Water Supply System description:**

Production capacity = 100,000 m3/day		Distribution network = 220 km		Storage capacity = 50,000 m3	
Area of Responsibility		Present Service Area			
Area (sq km)	240	240			
Population	454,268	687,738			
No. of Towns = 3		Population served = 222,028			
<u>No. of connections:</u>		Domestic (Households) = 51,515		Non Domestic = 3,992	
Typical service connection length = 30 m		Connections with operating meter = 55,507			
System input volumes:	Produced by W.U. = 28.5 million m3/year		Bulk water imported = zero		
Water consumption:	Metered cons. = 18.6 million m3/year		% Unmetered cons. = 35% of metered cons.		Ave. meter inaccuracy = 1% of metered cons.
Water Sales:	Domestic = 12.0 million m3/year		Non Domestic = 6.5 million m3/year		Bulk Water sales = zero
<u>System Performance:</u>	No. of connections with intermittent supply = N/A		Typical duration of supply = 24.0 hours / day		
	No. of pipe breaks in distribution system = 332 / year		Typical water pressure in mains = 10 m.		
Chlorine Residuals:	Tests required = 2,555 / year		Tests carried out = 2,555 / year		Tests passed = 2,530 / year

**Human Resources (Staff)**

<u>Type of employment:</u>	Permanent staff: salaried Government employees, , , , ,				
<u>No. of staff (FTE):</u>	Corporate Services = 43	Water Supply = 225	Other = 5	Total = 273	
<u>Staff Training:</u>	No. Trained = 57 / year	Training days = 120 / year	Training costs = 0.50% of total operating budget		

**Customer information**

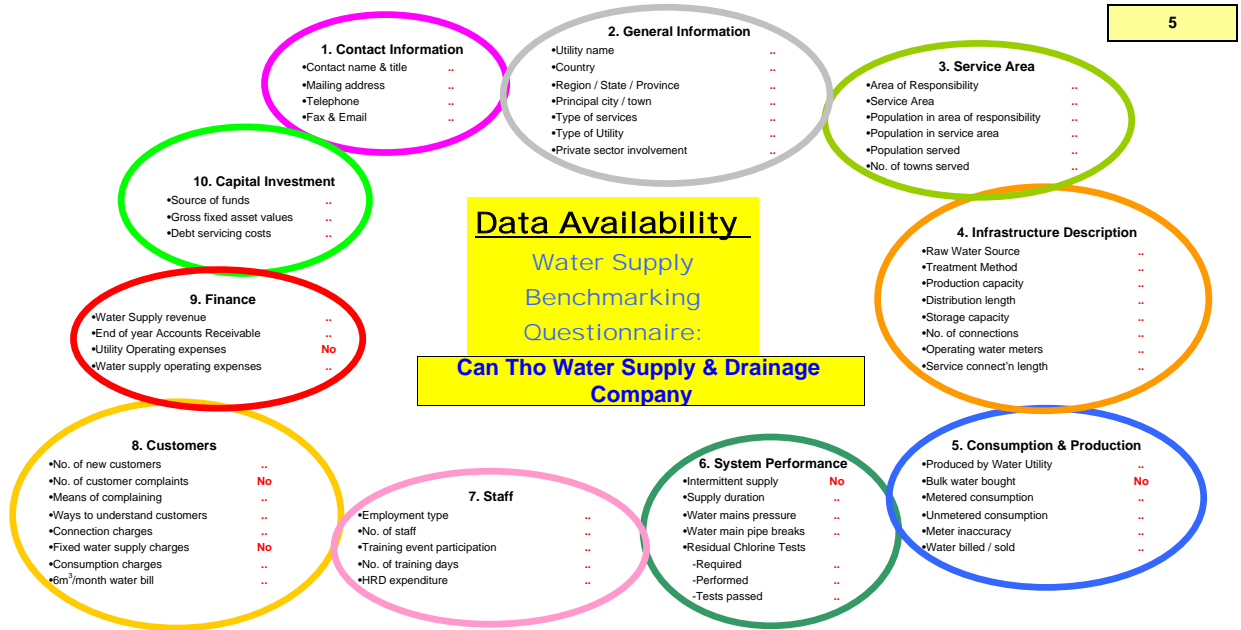
Customer interaction:	New connections = 5,863 / year		Customer complaints = N/A		
Complaint method:	In person, By telephone, , ,				
Understanding customers by:	Customer interactions, Responding to complaints, , ,				

**Charges & Fees**

<u>Typical connection charge:</u>		Domestic = 500,000VND / conn. (32 US\$ / conn.)		Non Domestic = 3,000,000VND / conn. (190 US\$ / conn.)	
<u>Fixed water charge:</u>		Domestic = N/A		Non Domestic = N/A	
		N/A		N/A	
<u>Water consumption tariff</u> (typical of all towns and in each category):		Tariff Block 1	Tariff Block 2	Tariff Block 3	Tariff Block 4
Domestic	From - To (m <sup>3</sup> )				
	Price (VND / m3)	2,500			
	(US\$ / m <sup>3</sup> )	\$0.16			
Non Domestic	From - To (m <sup>3</sup> )				
	Price (VND / m3)	3,500			
	(US\$ / m <sup>3</sup> )	\$0.22			
Bulk Water	From - To (m <sup>3</sup> )				
	Price (VND / m3)				
	(US\$ / m <sup>3</sup> )				
		Water bill for household consuming 6 m <sup>3</sup> /month =		15,000 VND / month (0.95 US\$ / month)	

**Finances**

<u>Revenue:</u>	Water Sales	Other water related	Subsidies & grants	Total	Year end Accounts Receivable	
	VND / year	40,123,000,000	4,413,000,000	zero	44,536,000,000	
	US\$ / year	\$2,544,423	\$279,853	zero	\$2,824,275	\$1,078,952
<u>Operating Expenses:</u>	Water supply	Other services	Company Overhead	Total		
	VND / year	zero	zero	zero	32,539,000,000	
	US\$ / year	zero	zero	zero	\$2,063,479	
<u>Water Supply Operating breakup:</u>	Labor	Electricity	Chemicals & materials	Contracted out	Other expenses	
	VND / year	6,657,000,000	5,637,000,000	4,191,000,000	zero	16,054,000,000
	US\$ / year	\$422,157	\$357,474	\$265,775	zero	\$1,018,073
<u>Investment funds source:</u> Own internal funds, Grant from Government or ODA project, Loan from Government Bank, , , ,						
<u>Fixed Assets value:</u>	Water supply	Other services	Company Overhead	Total	Debt Servicing Costs	
	VND	150,265,000,000	zero	39,000,000,000	189,265,000,000	82,628,000,000
	US\$	\$9,529,139	zero	\$2,473,207	\$12,002,346	\$5,239,901

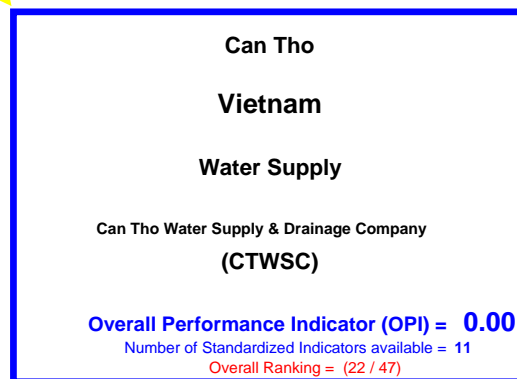


## Calculation of Overall Performance Indicator (OPI)

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Customer Indicators	Value	Rank
Service Coverage in existing service area (%)	32.3%	(44 / 45)
Meter coverage (% with operating water meter)	100.0%	(1 / 46)
Customer complaints / 1000 connections	#N/A	

Water Supply Systems O&M	Value	Rank
Supply Continuity (% of time water available)	100.0%	(1 / 47)
Residual Chlorine tests passed (%)	99.0%	(15 / 34)
Total Unmetered Consumption (% of metered cons.)		
Infrastructure Leakage Index [ILI]	10.5	(13 / 26)



Human Resource Indicators	Value	Rank
Total water related staff / 1000 connections	4.8	(10 / 38)
Investment in staff training (days / staff)	0.4	(20 / 33)
Ave. cost of employment / staff (% of per capita GNI)	329%	(10 / 37)

Financial Indicators	Value	Rank
Operating Cost Coverage (water sales only)	1.23	(20 / 43)
Unit water cost (US\$ / m <sup>3</sup> of system input)	\$0.07	(6 / 43)
Water system asset value / Prod'n capacity (US\$ / m <sup>3</sup> /day)	\$95	(15 / 35)
Debt servicing ratio (% of total operating revenue)		

**Financial Indicators: Annual expenses & revenue**

Operating Cost Coverage		Expenses	
Operating Cost Coverage (water sales only)	1.23	Overhead expenses / Total Operating expenses ratio	#N/A
Operating Cost Coverage (total revenue)	1.37	Labour costs / Water operating expenses	#N/A
		Electricity costs / Water operating expenses	#N/A
		Chemical & other materials costs / Water operating expenses	#N/A
		Contracted out services costs / Water operating expenses	#N/A
Revenue			
Water sales revenue / Total revenue ratio	0.90	Unit water cost	(US\$ / m <sup>3</sup> of metered cons.) 0.11
Subsidies & Grants / Total revenue ratio	0.00		(US\$ / m <sup>3</sup> of system input) 0.07
Revenue Collection period (months)	5.09		
Unit water price - ave. (US\$ / m <sup>3</sup> of metered cons.)	0.14	Debt servicing ratio (% of total operating revenue)	185.5%

**Fixed Assets**

Corporate Fixed Assets / Total Fixed Assets	0.21
Water system asset values	
Asset value / Total water related assets	0.80
Asset value / Prod'n capacity (US\$ / m <sup>3</sup> /day)	95
Asset value / pipe length (US\$ / m. pipe)	43
Asset value / Customer (US\$ / conn.)	172

**System Input**

Production capacity utilization (%)	78%
Bulk water imported (% of total system input)	0%
System Input Rate	
(litres/person/day)	352
(m <sup>3</sup> /connection/month)	43.0
System Input / Distribution ratio (m <sup>3</sup> /day per km pipe)	355.0
System Input / Storage ratio (m <sup>3</sup> /day per m <sup>3</sup> storage)	1.6
Supply Continuity (% customers with continuous supply)	100%
Supply Continuity (% of time water available)	100%

## Can Tho Vietnam Water Supply

### Can Tho Water Supply & Drainage Company (CTWSC)

OPI Ranking = 22 / 47

**Human Resource Indicators**

Human Resource Utilisation		Human Resource Development	
Overhead staff ratio (% of total FTE staff)	16%	Staff Training participation rate (% staff)	21%
Water supply staff ratio (% of total FTE staff)	82%	Staff Training duration rate (days / staff)	0.4
Total water related staff / 1000 connections	4.80	Investment in staff training (% of direct labour costs)	#N/A
Direct water supply staff		Investment in staff training (% of total operating costs)	0.50%
Staff / 1000 connections	4.10		
Staff / 1000 m <sup>3</sup> /day system input	2.90	Human Resources Costs	
Staff / 100 km of pipework	102.30	Ave. cost of employment / staff (% of per capita GNI)	3.29
		Contracting out services / in-house Labour costs ratio	#N/A

**Distribution**

Distribution / customer (m. pipe per connection)	4.0
Storage / customer (m <sup>3</sup> per connection)	0.90
Residual Chlorine	
Sampling compliance (%)	100%
Tests passed (%)	99%
Non Revenue Water (UFW)	
% of System Input	35%
m <sup>3</sup> / km / day	123.3
m <sup>3</sup> / connection / day	0.49
NRW adjusted for continuous supply (% of System Input)	35%
Unbilled Authorized & Unauthorized Cons. (% of metered cons.)	34%
Unmetered cons. due to meter inaccuracies (% of metered cons.)	1%
Total Unmetered Consumption (% of metered cons.)	35%
Infrastructure Leakage Index [ILI]	10.50
Mains failures ratio (breaks / km pipe / year)	1.50

**Water consumption**

Bulk water exported (% of total metered cons.)	0%
Average domestic water charges (% of per capita GNI)	2%
Metered consumption rate	
- Domestic (litres/person/day)	148
- Total Cons. (litres/person/day)	228
	28 (m <sup>3</sup> /conn/month)
Total consumption - metered & unmetered	(litres/person/day) 307.00
	(m <sup>3</sup> /conn/month) 37.00
Domestic share of total metered consumption (%)	65%
Non Domestic share of total metered consumption (%)	35%

**Demography**

Average town / city size (persons / town)	151,423
Population density in area of responsibility (persons/sq.km)	1,893
Population density in existing service area (persons/sq.km)	2,866
Average Household size (persons / domestic connection)	4
<b>Customer Interactions</b>	
Customer complaints / 1000 connections	#N/A

**Connections**

Service Coverage in area of responsibility (%)	49%
Service Coverage in existing service area (%)	32%
Domestic / Non-Domestic connections ratio	12.9
Domestic / Non-Domestic consumption rate ratio	1.8
New connection growth rate (% / year)	11%
New domestic connection cost (US\$ / connection)	32
New domestic connections (% of per capita GNI)	2%
Meter coverage (% with operating water meter)	100%
Billed unmetered consumption (% of metered cons.)	0%

# Water Sales & Production Information

## Can Tho Water Supply & Drainage Company

