

Water Utility: Vientiane City Water Supply Enterprise (Nam Papa Nakhoneluang)

Vientiane Municipality, Vientiane Capital City, Lao PDR

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Services Provided: Piped water, , , ,**Utility Type:** , , , State Owned Enterprise, , ,**Private Sector Involvement:** None, , , , ,**Source of Raw Water:** , , Direct river abstraction, Groundwater,**Treatment Method:** , Disinfection, Filtration, Flocculation and sedimentation, , ,**Water Supply System description:**

Production capacity = 101,100 m3/day		Distribution network = 569 km		Storage capacity = 17,460 m3	
Area of Responsibility		Present Service Area			
Area (sq km)	3,920	2,652			
Population	651,850	347,235			
No. of Towns = 7		Population served = 251,549			
<u>No. of connections:</u>		Domestic (Households) = 40,936		Non Domestic = 5,378	
Typical service connection length = m		Total Connections = 46,314		Connections with operating meter = 46,314	
System input volumes:	Produced by W.U. = 43.8 million m3/year		Bulk water imported = zero		
Water consumption:	Metered cons. = 31.5 million m3/year		% Unmetered cons. = N/A		Ave. meter inaccuracy = 5% of metered cons.
Water Sales:	Domestic = 24.6 million m3/year		Non Domestic = 7.0 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	
Chlorine Residuals:		Tests required = 1,825 / year		Tests carried out = 1,825 / year	
		Tests passed = 1,825 / year			

Human Resources (Staff)

<u>Type of employment:</u> Permanent staff: salaried Government employees, , Casual/part-time: contract staff, , ,					
<u>No. of staff (FTE):</u> Corporate Services = zero		Water Supply = zero		Other = zero	
<u>Staff Training:</u> No. Trained = N/A		Training days = 412 / year		Training costs = 0.51% of total operating budget	
		Total = 347			

Customer information

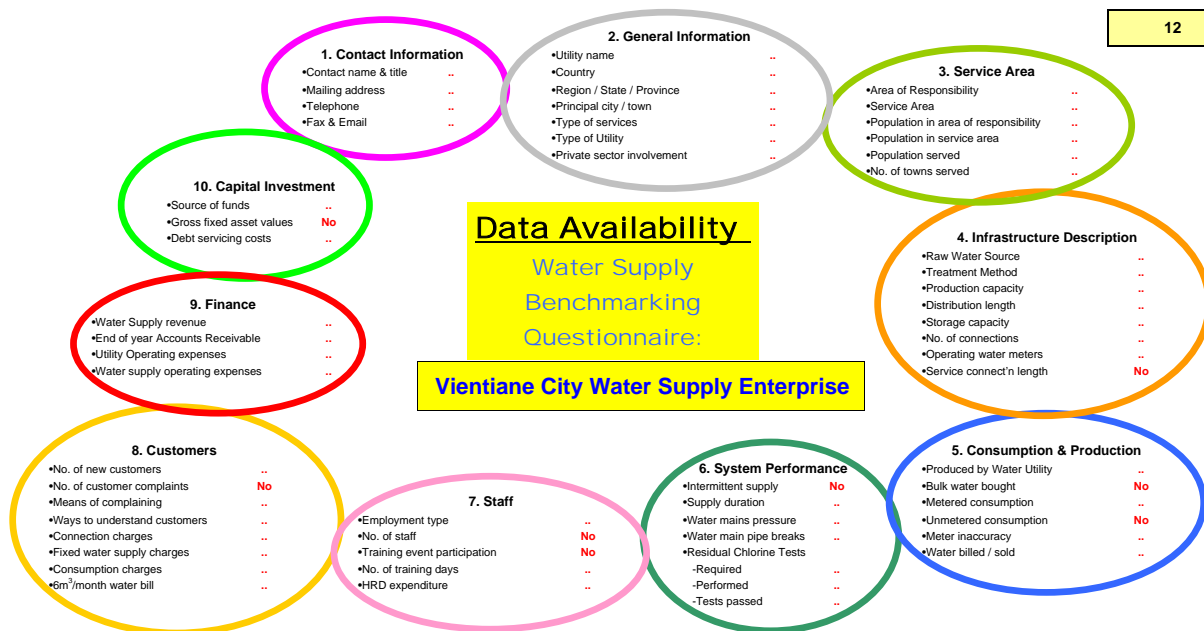
Customer interaction:	New connections = 1,668 / year	Customer complaints = N/A
Complaint method: In person, By telephone, , ,		
Understanding customers by: Customer interactions, , ,		

Charges & Fees

<u>Typical connection charge:</u>		Domestic = 1,100,000LAK / conn. (104 US\$ / conn.)		Non Domestic = 1,500,000LAK / conn. (142 US\$ / conn.)	
<u>Fixed water charge:</u> c = 1,860LAK / month (0 US\$ / conn.)		Non Domestic = 2,460LAK / month (0 US\$ / conn.)		Bulk water sales = 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 ³)	0 - 5	5 - 30	30	
	Price (LAK / m ³)	350	526	706	
	(US\$ / m ³)	\$0.03	\$0.05	\$0.07	
Non Domestic	From - To (m ³)	0 - 10	10 - 50	50	
	Price (LAK / m ³)	1,210	1,720	2,364	
	(US\$ / m ³)	\$0.11	\$0.16	\$0.22	
Bulk Water	From - To (m ³)				
	Price (LAK / m ³)				
	(US\$ / m ³)				
		Water bill for household consuming 6 m ³ /month =		2,276 LAK / month (0.22 US\$ / month)	

Finances

<u>Revenue:</u>					Year end Accounts
	Water Sales	Other water related	Subsidies & grants	Total	Receivable
LAK / year	17,408,520,000	3,724,220,000	zero	21,132,740,000	6,225,964,000
US\$ / year	\$1,646,974	\$352,339	zero	\$1,999,313	\$589,022
<u>Operating Expenses:</u>					
	Water supply	Other services	Company Overhead	Total	
LAK / year	13,912,312,197	zero	3,930,164,936	17,842,477,133	
US\$ / year	\$1,316,207	zero	\$371,823	\$1,688,030	
<u>Water Supply Operating breakup:</u>					
	Labor	Electricity	Chemicals & materials	Contracted out	Other expenses
LAK / year	3,787,315,000	1,801,723,000	6,704,238,000	zero	2,449,546,000
US\$ / year	\$358,308	\$170,456	\$634,270	zero	\$231,745
<u>Investment funds source:</u> , Grant from Government or ODA project, Loan from Government Bank, , , ,					
<u>Fixed Assets value:</u>					Debt Servicing Costs
	Water supply	Other services	Company Overhead	Total	
LAK	226,378,030,000	zero	zero	226,378,030,000	2,903,686,000
US\$	\$21,417,032	zero	zero	\$21,417,032	\$274,710



Calculation of Overall Performance Indicator (OPI)

Customer Indicators	Value	Rank
Service Coverage in existing service area (%)	72.4%	(24 / 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 (%)	100.0%	(1 / 34)
Total Unmetered Consumption (% of metered cons.)		
Infrastructure Leakage Index [ILI]	#N/A	

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Overall Performance Indicator (OPI) = 0.43
 Number of Standardized Indicators available = 8
 Overall Ranking = (4 / 47)

Human Resource Indicators	Value	Rank
Total water related staff / 1000 connections	#N/A	
Investment in staff training (days / staff)	1.2	(13 / 33)
Ave. cost of employment / staff (% of per capita GNI)	#N/A	

Financial Indicators	Value	Rank
Operating Cost Coverage (water sales only)	0.98	(32 / 43)
Unit water cost (US\$ / m ³ of system input)	\$0.04	(1 / 43)
Water system asset value / Prod'n capacity (US\$ / m ³ /day)	\$212	(26 / 35)
Debt servicing ratio (% of total operating revenue)		

Financial Indicators: Annual expenses & revenue			
Operating Cost Coverage		Expenses	
Operating Cost Coverage (water sales only)	0.98	Overhead expenses / Total Operating expenses ratio	0.22
Operating Cost Coverage (total revenue)	1.18	Labour costs / Water operating expenses	0.27
		Electricity costs / Water operating expenses	0.13
		Chemical & other materials costs / Water operating expenses	0.48
		Contracted out services costs / Water operating expenses	#N/A
Revenue			
Water sales revenue / Total revenue ratio	0.82	Unit water cost (US\$ / m ³ of metered cons.)	0.05
Subsidies & Grants / Total revenue ratio	0.00	Unit water cost (US\$ / m ³ of system input)	0.04
Revenue Collection period (months)	4.29	Debt servicing ratio (% of total operating revenue)	13.7%
Unit water price - ave. (US\$ / m ³ of metered cons.)	0.05		

Fixed Assets	
Corporate Fixed Assets / Total Fixed Assets	#N/A
Water system asset values	
Asset value / Total water related assets	#N/A
Asset value / Prod'n capacity (US\$ / m ³ /day)	212
Asset value / pipe length (US\$ / m. pipe)	38
Asset value / Customer (US\$ / conn.)	462

System Input	
Production capacity utilization (%)	119%
Bulk water imported (% of total system input)	0%
System Input Rate (litres/person/day)	477
(m ³ /connection/month)	79.0
System Input / Distribution ratio (m ³ /day per km pipe)	211.0
System Input / Storage ratio (m ³ /day per m ³ storage)	6.9
Supply Continuity (% customers with continuous supply)	#N/A
Supply Continuity (% of time water available)	100%

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OPI Ranking = 4 / 47

Human Resource Indicators			
Human Resource Utilisation		Human Resource Development	
Overhead staff ratio (% of total FTE staff)	#N/A	Staff Training participation rate (% staff)	#N/A
Water supply staff ratio (% of total FTE staff)	#N/A	Staff Training duration rate (days / staff)	1.2
		Investment in staff training (% of direct labour costs)	1.87%
		Investment in staff training (% of total operating costs)	0.51%
Total water related staff / 1000 connections	#N/A	Human Resources Costs	
Direct water supply staff		Ave. cost of employment / staff (% of per capita GNI)	#N/A
Staff / 1000 connections	#N/A	Contracting out services / in-house Labour costs ratio	#N/A
Staff / 1000 m ³ /day system input	#N/A		
Staff / 100 km of pipework	#N/A		

Distribution	
Distribution / customer (m. pipe per connection)	12.3
Storage / customer (m ³ per connection)	0.40
Residual Chlorine	
Sampling compliance (%)	100%
Tests passed (%)	100%
Non Revenue Water (UFW)	
% of System Input	28%
m ³ / km / day	59.0
m ³ / connection / day	0.72
NRW adjusted for continuous supply (% of System Input)	#N/A
Unbilled Authorized & Unauthorized Cons. (% of metered cons.)	#N/A
Unmetered cons. due to meter inaccuracies (% of metered cons.)	5%
Total Unmetered Consumption (% of metered cons.)	#N/A
Infrastructure Leakage Index [ILI]	#N/A
Mains failures ratio (breaks / km pipe / year)	5.20

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)	267	
	- Total Cons. (litres/person/day)	344	
	(m ³ /conn/month)	57	
Total consumption - metered & unmetered	(litres/person/day)	#N/A	
	(m ³ /conn/month)	#N/A	
Domestic share of total metered consumption (%)			78%
Non Domestic share of total metered consumption (%)			22%

Demography	
Average town / city size (persons / town)	93,121
Population density in area of responsibility (persons/sq.km)	166
Population density in existing service area (persons/sq.km)	131
Average Household size (persons / domestic connection)	6
Customer Interactions	
Customer complaints / 1000 connections	#N/A

Connections	
Service Coverage in area of responsibility (%)	39%
Service Coverage in existing service area (%)	72%
Domestic / Non-Domestic connections ratio	7.6
Domestic / Non-Domestic consumption rate ratio	3.5
New connection growth rate (% / year)	4%
New domestic connection cost (US\$ / connection)	104
New domestic connections (% of per capita GNI)	5%
Meter coverage (% with operating water meter)	100%
Billed unmetered consumption (% of metered cons.)	0%

Water Sales & Production Information

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Water Production
43,790,000 m3/year
100% of Water Input

Bulk Water Import
0 m3/year
0% of Water Input

Total Water Input
43,790,000 m3/year
3,649,167 m3/mth

Unaccounted for Water (UFW)
28% of Water Input

Adjusted UFW for 24/7 supply
#N/A

Metered Water Consumption
2,628,333 m3/mth

Domestic
2,046,667 m3/mth

Non Domestic
581,667 m3/mth

Bulk Water Sales
0 m3/mth

Water Connections = 40,936
X
50.0 m3/mth/conn

Water Connections = 5,378
X
108.2 m3/mth/conn

Unmetered Consumption
#N/A
#N/A

Unbilled Authorised & Unauthorized Consumption
#N/A

Meter inaccuracy
5% of metered consumption

Total Unmetered =
#N/A

Distribution System water losses (Current Annual Real Losses (CARL))
#N/A
#N/A
#N/A

Hours / month offline
0.0 hours/month
(Adjusted by)

CARL for 24/7 (continuous) supply
#N/A

Unavoidable Annual Real Losses (UARL)
#N/A
X

Infrastructure Leakage Index (ILI)
#N/A

Length of distribution mains
569 km

Water Connections
#N/A
#N/A

Average Pressure
50 m