

Water Utility: PDAM Kota Pangkal Pinang (PDAM PK Pinang)

Pangkal Pinang , Bangka Belitung , Indonesia

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Services Provided: Piped water, , , ,
Utility Type: , Government with separate reporting for WS&S, , , , ,

Private Sector Involvement: None, , , , ,

Source of Raw Water: , Storage reservoir/impoundment, Direct river abstraction, ,

Treatment Method: , Disinfection, Filtration, Flocculation and sedimentation, Aeration, ,

Water Supply System description:

Production capacity = 10,300 m3/day		Distribution network = 214 km		Storage capacity = 1,200 m3
Area of Responsibility		Present Service Area		
Area (sq km)	89	18		
Population	137,582	22,735		
No. of Towns = 1		Population served = 14,547		
<u>No. of connections:</u>	Domestic (Households) = 4,425	Non Domestic = 122	Total Connections = 4,547	
Typical service connection length = 4 m		Connections with operating meter = 4,547		
System input volumes:	Produced by W.U. = 1.9 million m3/year	Bulk water imported = zero		
Water consumption:	Metered cons. = 0.9 million m3/year	% Unmetered cons. = 53% of metered cons.	Ave. meter inaccuracy = 10% of metered cons.	
Water Sales:	Domestic = 0.8 million m3/year	Non Domestic = 0.1 million m3/year	Bulk Water sales = zero	
<u>System Performance:</u>	No. of connections with intermittent supply = 1,136		Typical duration of supply = 20.0 hours / day	
	No. of pipe breaks in distribution system = 6 / year		Typical water pressure in mains = 40 m.	
Chlorine Residuals:	Tests required = 124 / year	Tests carried out = N/A	Tests passed = N/A	

Human Resources (Staff)

<u>Type of employment:</u>	, , Casual/part-time: contract staff, , ,			
<u>No. of staff (FTE):</u>	Corporate Services = 51	Water Supply = 8	Other = zero	Total = 59
<u>Staff Training:</u>	No. Trained = 3 / year	Training days = 12 / year	Training costs = 0.17% of total operating budget	

Customer information

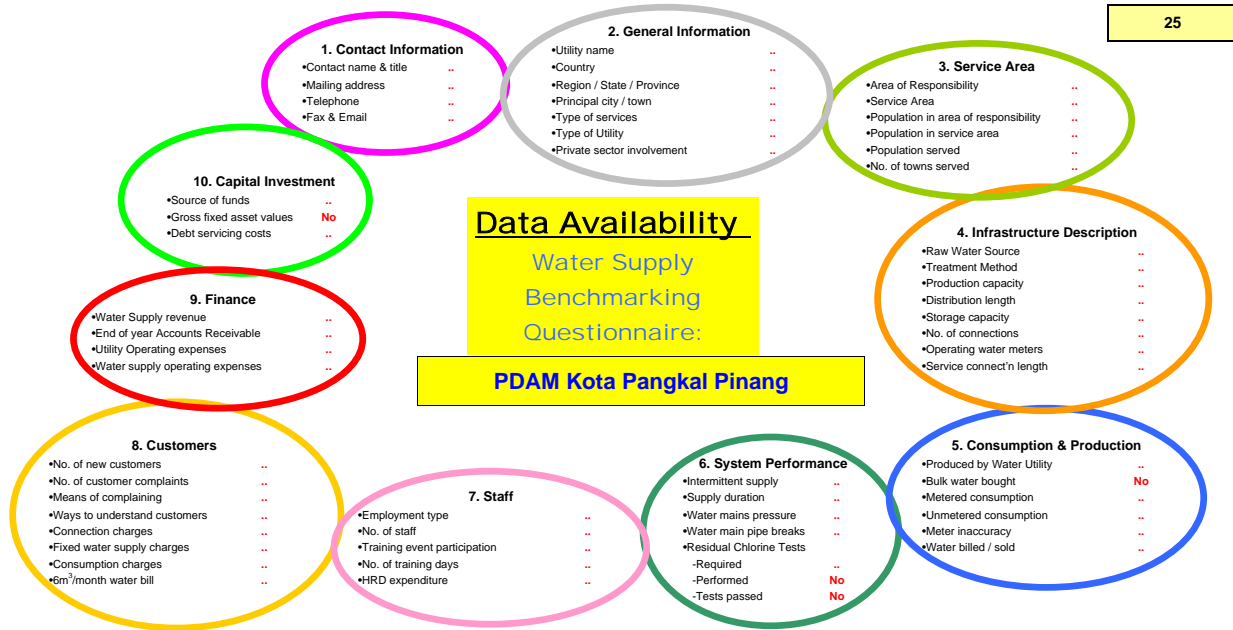
Customer interaction:	New connections = 148 / year	Customer complaints = 624 / year
Complaint method:	In person, , , By letter,	
Understanding customers by:	Customer interactions, Responding to complaints, , ,	

Charges & Fees

<u>Typical connection charge:</u>	Domestic = 459,900IDR / conn. (50 US\$ / conn.)		Non Domestic = N/A N/A	
<u>Fixed water charge:</u>	ic = 1,200IDR / month (0 US\$ / conn.)	Non Domestic = 8,000IDR / month (1 US\$ / conn.)		Bulk water sales = 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 ³)	0 - 10	10 - 20	20
	Price (IDR / m ³)	1,200	1,300	1,400
	(US\$ / m ³)	\$0.13	\$0.14	\$0.15
Non Domestic	From - To (m ³)	0 - 20	20	
	Price (IDR / m ³)	8,000	9,500	
	(US\$ / m ³)	\$0.87	\$1.04	
Bulk Water	From - To (m ³)			
	Price (IDR / m ³)			
	(US\$ / m ³)			
Water bill for household consuming 6 m ³ /month =			7,200 IDR / month	(0.79 US\$ / month)

Finances

<u>Revenue:</u>	Water Sales	Other water related	Subsidies & grants	Total	Year end Accounts Receivable
	IDR / year	1,345,360,910	zero	1,345,360,910	1,817,207,700
	US\$ / year	\$146,875	zero	\$146,875	\$198,387
<u>Operating Expenses:</u>	Water supply	Other services	Company Overhead	Total	
	IDR / year	2,867,610,077	zero	2,867,610,077	
	US\$ / year	\$313,061	zero	\$313,061	
<u>Water Supply Operating breakup:</u>	Labor	Electricity	Chemicals & materials	Contracted out	Other expenses
	IDR / year	834,579,865	659,596,005	zero	zero
	US\$ / year	\$91,112	\$72,009	zero	zero
<u>Investment funds source:</u> , Grant from Government or ODA project, , , ,					
<u>Fixed Assets value:</u>	Water supply	Other services	Company Overhead	Total	Debt Servicing Costs
	IDR	8,067,268,996	zero	8,067,268,996	2,867,610,077
	US\$	\$880,716	zero	\$880,716	\$313,061



Calculation of Overall Performance Indicator (OPI)

Customer Indicators	Value	Rank
Service Coverage in existing service area (%)	64.0%	(29 / 45)
Meter coverage (% with operating water meter)	100.0%	(1 / 46)
Customer complaints / 1000 connections	137.2	(13 / 41)

Water Supply Systems O&M	Value	Rank
Supply Continuity (% of time water available)	83.3%	(39 / 47)
Residual Chlorine tests passed (%)	#N/A	
Total Unmetered Consumption (% of metered cons.)		
Infrastructure Leakage Index [ILI]	5.2	(4 / 26)



Human Resource Indicators	Value	Rank
Total water related staff / 1000 connections	13	(36 / 38)
Investment in staff training (days / staff)	0.2	(25 / 33)
Ave. cost of employment / staff (% of per capita GNI)	191%	(26 / 37)

Financial Indicators	Value	Rank
Operating Cost Coverage (water sales only)	0.47	(43 / 43)
Unit water cost (US\$ / m ³ of system input)	\$0.17	(32 / 43)
Water system asset value / Prod'n capacity (US\$ / m ³ /day)	\$86	(13 / 35)
Debt servicing ratio (% of total operating revenue)		

Financial Indicators: Annual expenses & revenue

<u>Operating Cost Coverage</u>		<u>Expenses</u>	
Operating Cost Coverage (water sales only)	0.47	Overhead expenses / Total Operating expenses ratio	#N/A
Operating Cost Coverage (total revenue)	0.47	Labour costs / Water operating expenses	0.29
		Electricity costs / Water operating expenses	0.23
<u>Revenue</u>		Chemical & other materials costs / Water operating expenses	#N/A
Water sales revenue / Total revenue ratio	1.00	Contracted out services costs / Water operating expenses	#N/A
Subsidies & Grants / Total revenue ratio	#N/A		
Revenue Collection period (months)	16.21	Unit water cost (US\$ / m ³ of metered cons.)	0.36
		(US\$ / m ³ of system input)	0.17
Unit water price - ave. (US\$ / m ³ of metered cons.)	0.17	Debt servicing ratio (% of total operating revenue)	213.1%

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)	86
Asset value / pipe length (US\$ / m. pipe)	4
Asset value / Customer (US\$ / conn.)	194

System Input

Production capacity utilization (%)	50%
Bulk water imported (% of total system input)	0%
System Input Rate (litres/person/day)	350
(m ³ /connection/month)	34.0
System Input / Distribution ratio (m ³ /day per km pipe)	24.0
System Input / Storage ratio (m ³ /day per m ³ storage)	4.2
Supply Continuity (% customers with continuous supply)	75%
Supply Continuity (% of time water available)	83%

Pangkal Pinang Indonesia Water Supply

PDAM Kota Pangkal Pinang
(PDAM PK Pinang)

OPI Ranking = 44 / 47

Human Resource Indicators

<u>Human Resource Utilisation</u>		<u>Human Resource Development</u>	
Overhead staff ratio (% of total FTE staff)	86%	Staff Training participation rate (% staff)	5%
Water supply staff ratio (% of total FTE staff)	14%	Staff Training duration rate (days / staff)	0.2
Total water related staff / 1000 connections	13.00	Investment in staff training (% of direct labour costs)	0.58%
Direct water supply staff		Investment in staff training (% of total operating costs)	0.17%
Staff / 1000 connections	1.80	<u>Human Resources Costs</u>	
Staff / 1000 m ³ /day system input	1.60	Ave. cost of employment / staff (% of per capita GNI)	1.91
Staff / 100 km of pipework	3.70	Contracting out services / in-house Labour costs ratio	#N/A

Distribution

Distribution / customer (m. pipe per connection)	47.0
Storage / customer (m ³ per connection)	0.30
Residual Chlorine	
Sampling compliance (%)	#N/A
Tests passed (%)	#N/A
Non Revenue Water (UFW)	
% of System Input	53%
m ³ / km / day	12.6
m ³ / connection / day	0.59
NRW adjusted for continuous supply (% of System Input)	57%
Unbilled Authorized & Unauthorized Cons. (% of metered cons.)	43%
Unmetered cons. due to meter inaccuracies (% of metered cons.)	10%
Total Unmetered Consumption (% of metered cons.)	53%
Infrastructure Leakage Index [ILI]	5.20
Mains failures ratio (breaks / km pipe / year)	0.00

Water consumption

Bulk water exported (% of total metered cons.)	0%
Average domestic water charges (% of per capita GNI)	1%
Metered consumption rate - Domestic (litres/person/day)	156
- Total Cons. (litres/person/day)	166
(m ³ /conn/month)	16
Total consumption - metered & unmetered (litres/person/day)	253.00
(m ³ /conn/month)	25.00
Domestic share of total metered consumption (%)	94%
Non Domestic share of total metered consumption (%)	6%

Demography

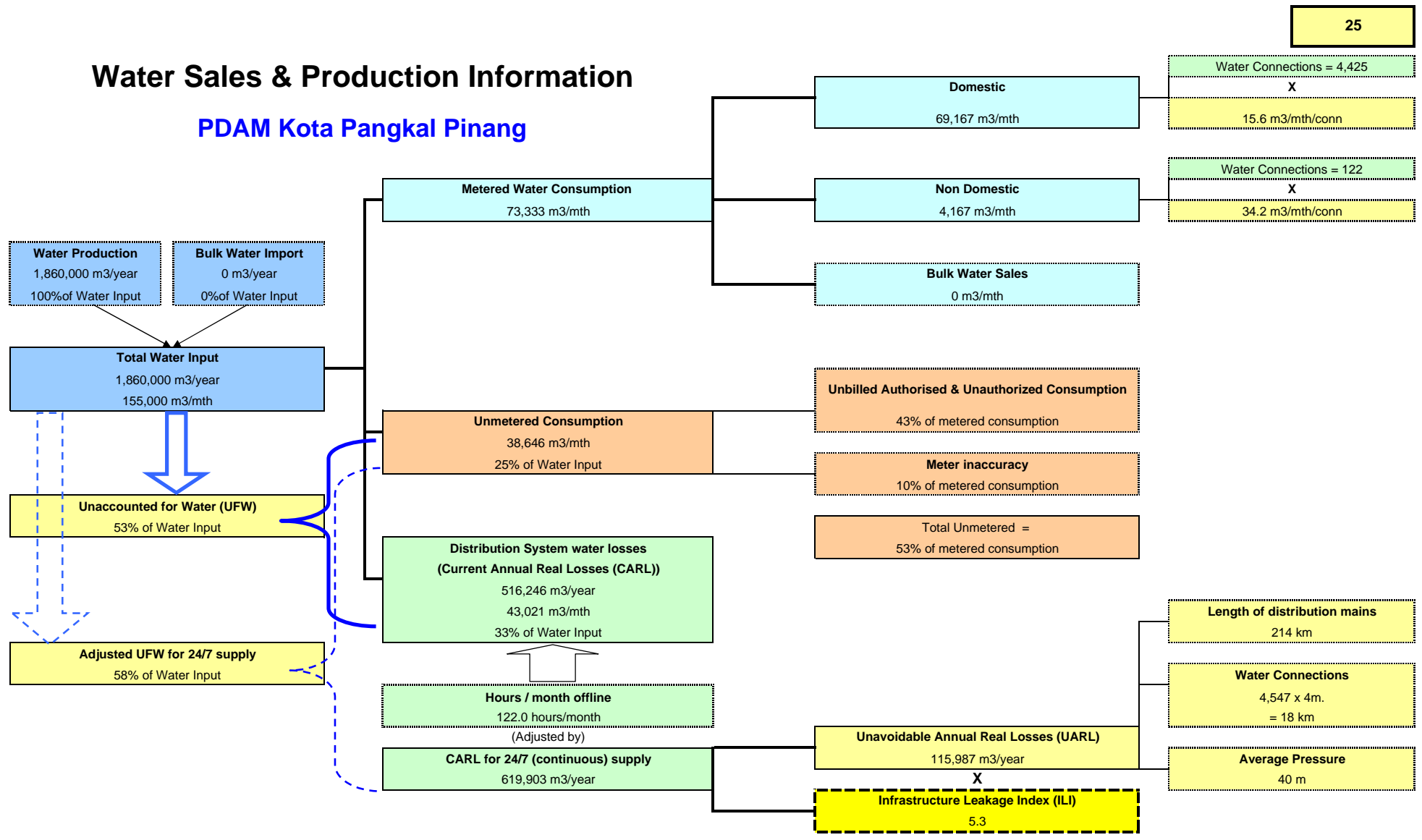
Average town / city size (persons / town)	137,582
Population density in area of responsibility (persons/sq.km)	1,539
Population density in existing service area (persons/sq.km)	1,272
Average Household size (persons / domestic connection)	3
<u>Customer Interactions</u>	
Customer complaints / 1000 connections	137

Connections

Service Coverage in area of responsibility (%)	11%
Service Coverage in existing service area (%)	64%
Domestic / Non-Domestic connections ratio	36.3
Domestic / Non-Domestic consumption rate ratio	16.6
New connection growth rate (% / year)	3%
New domestic connection cost (US\$ / connection)	50
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

PDAM Kota Pangkal Pinang



25

Water Connections = 4,425
X
15.6 m3/mth/conn

Water Connections = 122
X
34.2 m3/mth/conn

Unbilled Authorised & Unauthorized Consumption
43% of metered consumption

Meter inaccuracy
10% of metered consumption

Total Unmetered =
53% of metered consumption

Length of distribution mains
214 km

Water Connections
4,547 x 4m.
= 18 km

Average Pressure
40 m

Unavoidable Annual Real Losses (UARL)
115,987 m3/year

X
Infrastructure Leakage Index (ILI)
5.3

Water Production
1,860,000 m3/year
100% of Water Input

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

Total Water Input
1,860,000 m3/year
155,000 m3/mth

Unaccounted for Water (UFW)
53% of Water Input

Adjusted UFW for 24/7 supply
58% of Water Input

Metered Water Consumption
73,333 m3/mth

Domestic
69,167 m3/mth

Non Domestic
4,167 m3/mth

Bulk Water Sales
0 m3/mth

Unmetered Consumption
38,646 m3/mth
25% of Water Input

Distribution System water losses
(Current Annual Real Losses (CARL))
516,246 m3/year
43,021 m3/mth
33% of Water Input

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

CARL for 24/7 (continuous) supply
619,903 m3/year