



International  
Water Association

**Specialist Group**  
Statistics and  
Economics

**International Statistics for Water Services**  
*Information every water manager should know*

**2012**

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This leaflet on International Statistics for Water Services is composed by the IWA Specialist Group on Statistics and Economics.

**The International Water Association (IWA) is a worldwide network of professionals, which aims to exchange scientific and professional knowledge, provided by academics and water managers, covering all aspects of the water cycle. To achieve this goal, IWA organizes conferences supported by specialist groups and technical and scientific teams all over the world.**

The Statistics and Economics Specialist Group provides a forum to discuss the financing of water utilities, the water tariff structures, performance indicators, efficiency and economics of water organizations and themes like total cost recovery. A part of this service consists of water surveys and providing statistics on water industry, such as tables and figures on abstraction, consumption, tariffs and data on sewerage and wastewater treatment.

The report "International Statistics for Water Services" is part of a series of documents presented at the IWA World Water Congresses and is also available on [www.iwahq.org/Home](http://www.iwahq.org/Home). This report, more specifically the charges and consumption part, focuses on water consumption of households and small businesses.

The prices indicated do not necessarily reflect the full costs of water services, because some costs may be covered by sources other than the customer. In some cases there can be a political motivation to ensure that water is supplied at a socially acceptable price. There are many other factors affecting relative price levels, but these are not focused on in this survey.

Similar to the previous edition we have collected data from water bills, based on an annual consumption of 100 m<sup>3</sup> and 200 m<sup>3</sup> per year, to facilitate comparison on city level. All financial data are converted to US\$, exchange rate December 31th, 2011. All quantitative information on population and so on is based on the situation in 2010.

This leaflet is merely meant as a teaser, with clear and eye-catching ratio's and graphs. Far more detailed information can be found at <http://www.iwahq.org/8h/networks/specialist-groups/list-of-groups/statistics-and-economics.html>. When comparing this information to previously published brochures, certain tendencies can be observed. But do keep in mind that the exchange rate of the US\$ is time-related. Further useful statistics and information can also be found at [www.iwahq.org](http://www.iwahq.org)

**Thanks to all water professionals who helped to obtain the data for this survey. They are listed on the last page.**

**IWA Specialist Group Statistics and Economics**

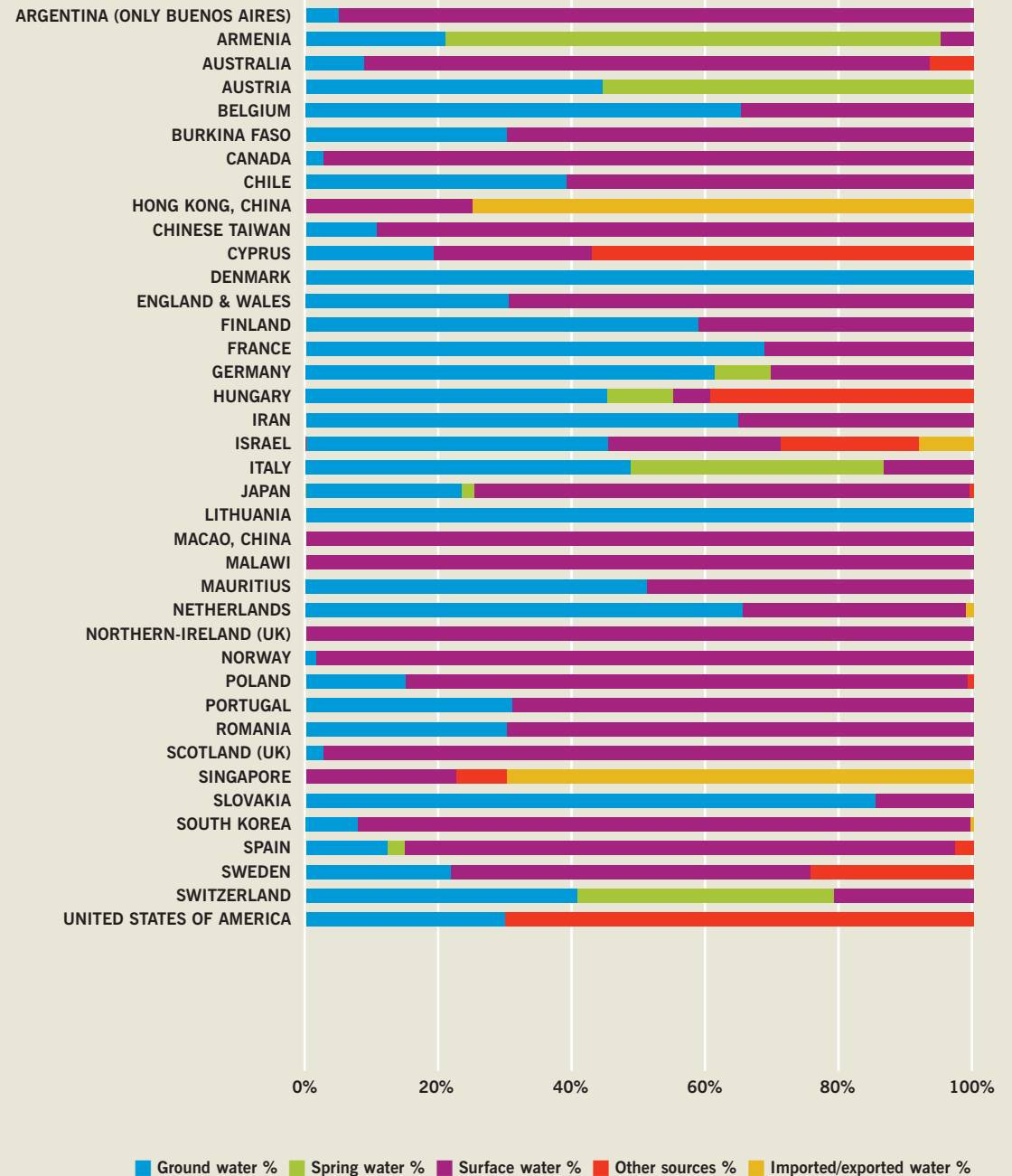
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## Abstraction for water supply according to source in 2008-2010 in mio m<sup>3</sup>/year

COUNTRY/REGION	TRUE GROUND WATER		SPRING WATER		SURFACE WATER		OTHER SOURCES		TOTAL WATER ABSTRACTION	
	2008	2010	2008	2010	2008	2010	2008	2010	2008	2010
ARGENTINA (only Buenos Aires)	n/a	86	n/a	0	n/a	1,685	n/a	0	n/a	1,771
ARMENIA	n/a	119	n/a	421	n/a	28	n/a	0	n/a	568
AUSTRALIA	n/a	218	n/a	0	n/a	2,067	n/a	160	n/a	2,445
AUSTRIA	314	355	469	446	0	0	0	0	783	801
BELGIUM	461	473	0	0	249	253	0	0	710	726
BRAZIL	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	14,518
BULGARIA	598	n/a	0	n/a	398	n/a	0	n/a	996	800
BURKINA FASO 1	n/a	18	n/a	0	n/a	42	n/a	0	n/a	60
CANADA	n/a	46	n/a	0	n/a	1,790	n/a	0	n/a	1,836
CHILE	n/a	620	n/a	0	n/a	960	n/a	0	n/a	1,580
HONG KONG, CHINA	0	0	0	0	303	228	653	0	956	228
CHINESE TAIWAN	437	465	6	6	3,529	3,955	0	0	3,972	4,425
CYPRUS	19	18	0	0	15	21	37	53	72	92
DENMARK	378	398	0	0	0	0	0	0	378	398
ENGLAND & WALES	n/a	1,787	n/a	0	n/a	4,072	n/a	0	n/a	5,858
FINLAND	256	261	0	0	180	184	0	0	437	445
FRANCE	3,847	6,000	0	0	2,358	2,750	0	0	6,205	8,750
GABON 1	n/a	n/a	n/a	0	n/a	n/a	n/a	0	n/a	81
GERMANY	3,125	3,079	410	422	1,520	1,537	0	0	5,055	5,038
HUNGARY	315	269	62	60	38	33	260	236	674	597
IRAN	n/a	4,460	n/a	0	n/a	2,430	n/a	0	n/a	6,890
ISRAEL	1,064	834	0	0	625	479	387	388	2,076	1,701
ITALY	4,233	4,427	3,249	3,452	1,158	1,211	69	27	8,709	9,117
JAPAN	3,856	3,707	305	292	11,831	11,790	31	34	16,023	15,823
LITHUANIA	133	130	0	0	0	0	0	0	133	130
MACAO, CHINA	n/a	0	n/a	0	n/a	79	n/a	0	n/a	79
MALAWI	n/a	0	n/a	0	n/a	30	n/a	0	n/a	30
MAURITIUS	n/a	114	n/a	0	n/a	109	n/a	0	n/a	223
NETHERLANDS	686	761	0	0	429	395	76	0	1,191	1,156
NORTHERN-IRELAND (UK)	n/a	1	n/a	0	n/a	228	n/a	0	n/a	229
NORWAY	82	12	0	0	753	710	0	0	835	722
POLAND	1,649	1,625	0	0	9,023	9,173	80	68	10,752	10,866
PORTUGAL	405	378	0	0	567	845	0	0	972	1,223
ROMANIA	n/a	354	n/a	0	n/a	825	n/a	0	n/a	1,179
SCOTLAND (UK)	n/a	19	n/a	0	n/a	717	n/a	0	n/a	736
SINGAPORE	n/a	0	n/a	0	n/a	151	n/a	49	n/a	201
SLOVAKIA	190	267	81	0	0	46	0	0	271	313
SOUTH KOREA	90	556	0	0	9,822	6,606	0	0	9,912	7,162
SPAIN	826	615	0	135	4,209	4,156	270	152	5,305	5,058
SWEDEN	183	197	0	0	454	490	238	222	875	909
SWITZERLAND	405	382	394	369	181	189	0	0	980	940
UGANDA 1	n/a	n/a	n/a	0	n/a	n/a	n/a	0	n/a	72
UNITED STATES OF AMERICA	22,107	15,546	0	0	37,720	26,293	0	10,329	59,827	52,169

1 Only for urban areas

## Abstraction source for drinking water supply in 2010 in mio m<sup>3</sup>/year and %



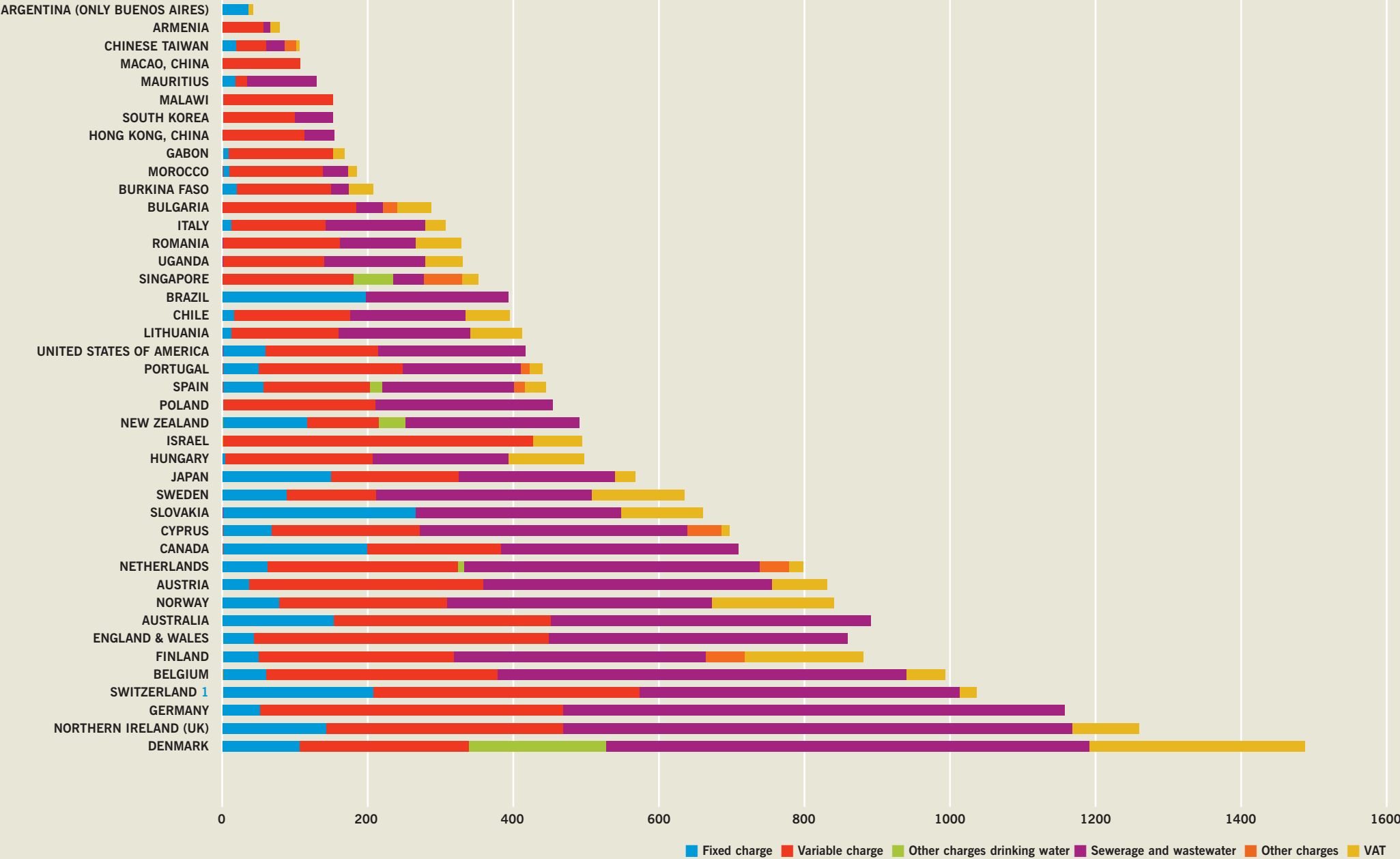
## Water delivered - population - supply rate for drinking water, sewerage and waste water consumption in 2008-2010

COUNTRY/REGION	IN MIO m <sup>3</sup>									IN MIO INHABITANTS			IN %								
	HOUSEHOLD AND SMALL BUSINESS CONSUMPTION (<10,000 m <sup>3</sup> )			INDUSTRY AND OTHER BILLED WATER CONSUMPTION (>10,000 m <sup>3</sup> )			TOTAL DELIVERY			POPULATION			SUPPLY RATE			SEWERAGE CONNECTION RATE			WASTE WATER CONNECTION RATE		
	2006	2008	2010	2006	2008	2010	2006	2008	2010	2006	2008	2010	2006	2008	2010	2006	2008	2010	2006	2008	2010
ARGENTINA (only Buenos Aires)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1,058	n/a	n/a	9.74	n/a	n/a	79.49	n/a	n/a	59.01	n/a	n/a	7.69
ARMENIA	n/a	n/a	119	n/a	n/a	40	n/a	n/a	159	n/a	n/a	3.21	n/a	n/a	77.34	n/a	n/a	69.21	n/a	n/a	69.21
AUSTRALIA	n/a	n/a	1,298	n/a	n/a	563	n/a	n/a	1,861	20.33	n/a	22.34	n/a	n/a	99.70	n/a	n/a	94.04	n/a	n/a	n/a
AUSTRIA	485	438	381	100	104	102	585	542	483	8.27	8.33	8.39	89.10	89.20	89.87	90.00	92.00	93.00	90.00	92.00	93.00
BELGIUM	406	405	439	183	169	144	589	574	583	10.58	10.67	10.77	99.70	99.40	99.68	76.00	85.00	91.35	76.00	85.00	86.41
BRAZIL	7,000	n/a	n/a	1,000	n/a	n/a	8,000	n/a	8,418	189.00	n/a	193.30	94.20	n/a	81.69	39.00	n/a	44.50	n/a	n/a	44.50
BULGARIA	n/a	308	n/a	n/a	103	n/a	n/a	411	354	n/a	7.93	7.36	n/a	99.00	99.09	n/a	64.00	70.60	n/a	64.35	47.70
BURKINA FASO 1	n/a	n/a	41	n/a	n/a	8	n/a	n/a	49	n/a	n/a	3.36	n/a	n/a	75.00	n/a	n/a	21.00	n/a	n/a	n/a
CANADA	n/a	n/a	1,788	n/a	n/a	0	n/a	n/a	1,788	n/a	n/a	33.89	n/a	n/a	31.34	n/a	n/a	36.19	n/a	n/a	37.66
CHILE	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1,007	n/a	n/a	15.15	n/a	n/a	99.81	n/a	n/a	95.88	n/a	n/a	86.92
CHINA	n/a	12,235	12,625	n/a	6,112	5,857	n/a	18,347	18,482	n/a	1,328.00	31.73	n/a	21.20	91.80	n/a	n/a	n/a	n/a	n/a	n/a
HONG KONG, CHINA	756	760	551	207	196	385	963	956	936	6.86	6.99	7.10	99.99	100.00	99.92	93.00	93.00	93.00	93.00	93.00	93.00
CHINESE TAIWAN	1,840	1,870	1,976	289	916	713	2,129	2,786	2,688	22.88	23.11	23.16	91.86	91.53	91.89	15.60	22.50	53.02	15.60	22.50	53.02
CYPRUS	n/a	n/a	67	n/a	n/a	2	n/a	n/a	69	0.78	n/a	0.82	100.00	n/a	100.00	59.00	n/a	58.54	59.00	n/a	58.54
DENMARK	323	313	316	41	48	52	364	361	368	5.43	5.48	5.56	96.00	96.00	97.20	90.00	90.00	90.00	90.00	90.00	90.00
ENGLAND & WALES	n/a	n/a	3,148	n/a	n/a	1,190	n/a	n/a	4,338	n/a	n/a	55.24	n/a	n/a	99.60	n/a	n/a	97.25	n/a	n/a	96.82
FINLAND	298	298	303	53	53	53	350	350	356	5.30	5.33	5.38	90.53	90.11	91.16	81.37	81.25	82.01	81.37	81.25	82.01
FRANCE	n/a	n/a	n/a	n/a	n/a	n/a	4,450	4,100	3,800	61.00	65.00	65.00	100.00	100.00	100.00	95.00	95.00	95.00	95.00	95.00	95.00
GABON 1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	63	n/a	n/a	1.26	n/a	n/a	95.00	n/a	n/a	0.00	n/a	n/a	0.00
GERMANY	3,703	3,590	3,580	957	900	875	4,660	4,490	4,455	82.32	82.00	81.75	99.20	99.20	99.26	96.00	96.00	96.63	94.00	95.00	94.92
HUNGARY	370	438	341	143	126	113	513	564	455	10.07	10.30	10.01	94.30	90.72	94.80	65.70	67.00	72.50	65.70	67.49	72.50
IRAN	n/a	n/a	4,895	n/a	n/a	0	n/a	n/a	4,895	n/a	n/a	77.54	n/a	n/a	91.52	n/a	n/a	25.37	n/a	n/a	18.05
ISRAEL	733	759	685	593	1,242	110	1,326	2,001	795	7.05	7.30	7.49	100.00	100.00	100.00	90.00	96.00	93.51	90.00	95.78	93.51
ITALY	4,858	5,451	4,703	758	n/a	830	5,616	5,451	5,533	58.74	60.05	60.63	97.00	96.00	96.00	84.00	85.00	84.70	84.00	84.70	70.40
JAPAN	12,141	12,073	11,805	1,821	1,788	1,699	13,962	13,861	13,504	127.71	127.90	127.94	97.20	97.40	97.54	70.50	71.20	73.16	70.50	71.22	n/a
LITHUANIA	69	52	50	28	46	42	98	97	92	3.39	3.35	3.24	70.00	73.00	73.50	60.00	62.00	62.00	60.00	62.00	63.00
MACAO, CHINA	n/a	n/a	31	n/a	n/a	39	n/a	n/a	71	n/a	n/a	0.56	n/a	n/a	100.00	n/a	n/a	100.00	n/a	n/a	0.00
MALAWI	10	n/a	11	4	n/a	5	14	n/a	15	12.34	n/a	0.70	70.00	n/a	89.99	n/a	n/a	n/a	n/a	n/a	n/a
MAURITIUS	85	n/a	77	21	n/a	24	106	n/a	100	1.18	n/a	1.23	99.80	n/a	100.00	n/a	n/a	25.37	n/a	n/a	24.39
MOROCCO	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	640	n/a	n/a	18.06	n/a	n/a	96.20	n/a	n/a	88.40	n/a	n/a	n/a
NETHERLANDS	926	940	914	176	153	176	1,102	1,093	1,090	16.35	16.43	16.74	100.00	100.00	100.00	99.30	100.00	100.00	99.30	100.00	100.00
NORTHERN IRELAND (UK)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	181	180	n/a	1.80	1.81	n/a	98.60	99.62	n/a	75.90	75.90	n/a	75.90	75.90
NORWAY	317	318	337	205	204	380	522	522	717	4.68	4.80	4.99	90.00	90.00	82.25	82.00	82.00	84.99	82.00	81.96	n/a
POLAND	n/a	2,104	1,541	n/a	8,648	7,662	n/a	10,752	9,203	n/a	38.10	38.20	n/a	95.20	87.50	n/a	86.00	62.10	n/a	85.50	65.24
PORTUGAL	521	547	617	92	112	126	613	659	743	10.60	10.63	10.56	93.30	92.00	99.71	76.00	80.00	71.04	76.00	80.00	69.78
ROMANIA	1,300	n/a	411	2,250	n/a	221	3,550	n/a	632	21.50	n/a	21.40	75.00	n/a	55.61	53.95	n/a	43.69	35.00	n/a	30.84
SCOTLAND (UK)	n/a	315	308	n/a	169	156	n/a	485	464	n/a	5.17	5.22	n/a	96.60	95.41	n/a	91.00	n/a	91.03	n/a	n/a
SINGAPORE	256	n/a	281	193	n/a	195	449	n/a	476	4.48	n/a	5.08	100.00	n/a	100.00	100	n/a	100.00	100	n/a	100.00
SLOVAKIA	n/a	33	32	n/a	55	55	n/a	88	87	n/a	5.40	5.44	n/a	86.16	86.49	n/a	58.00	60.33	n/a	58.26	57.50
SOUTH KOREA	n/a	7,051	3,606	n/a	2,861	1,269	n/a	9,912	4,875	n/a	50.39	51.43	n/a	92.73	94.09	n/a	88.56	88.00	n/a	88.56	88.00
SPAIN	2,334	2,214	3,344	1,143	996	942	3,477	3,210	4,285	44.71	46.75	47.02	100.00	100.00	99.96	96.00	96.00	95.46	96.00	96.00	95.46
SWEDEN	559	536	464	112	106	103	670	642	566	9.11	9.26	9.42	89.00	88.15	86.50	89.00	87.00	84.65	89.00	87.37	84.65
SWITZERLAND 2	624	602	560	158	171	180	782	773	740	7.55	7.75	7.92	99.00	99.00	99.20	97.00	97.00	94.67	97.00	97.00	94.67
UGANDA 1	n/a	n/a	25	n/a	n/a	22	n/a	n/a	47	n/a	n/a	2.95	n/a	n/a	74.00	n/a	n/a	6.40	n/a	n/a	n/a
UNITED STATES OF AMERICA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	47,917	n/a	n/a	310.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

1 Only for urban areas

2 Population for Switzerland included Liechtenstein

Average annual water cycle charges in 2011 for a consumption of 200 m<sup>3</sup> \*  
in US\$/200 m<sup>3</sup>



\* Average volume of considered main cities in the country/region

1 Switzerland: average for one-family-houses is displayed in the graph, the charges for flats (in blocks) are quite a bit lower.



## Comparison of annual water cycle charges in 2011 related to a consumption of 100 m<sup>3</sup> in US\$

COUNTRY/REGION	TOWN/CITY	GDP PER CAPITA IN US\$	ACTUAL CHARGES									AVERAGE CHARGES								
			FIXED CHARGE	VARIABLE CHARGE	OTHER CHARGES DRINKING WATER	TOTAL CHARGE DRINKING WATER	SEWERAGE CHARGE	WASTE WATER TREATMENT CHARGE	OTHER CHARGES	VAT & OTHER TAXES	TOTAL ANNUAL CHARGES 100 m <sup>3</sup>	FIXED CHARGE	VARIABLE CHARGE	OTHER CHARGES DRINKING WATER	TOTAL CHARGE DRINKING WATER	SEWERAGE CHARGE	WASTE WATER TREATMENT CHARGE	OTHER CHARGES	VAT & OTHER TAXES	TOTAL ANNUAL CHARGES 100 m <sup>3</sup>
ARGENTINA	Buenos Aires	17,400	37.04	0.00	0.00	37.04	0.00	0.00	0.00	8.25	45.29	37.04	0.00	0.00	37.04	0.00	0.00	0.00	8.25	45.29
ARMENIA	Yerevan	5,400	0.00	33.37	0.00	33.37	4.54	2.51	0.00	8.08	48.50	0.00	28.47	0.00	28.47	4.98	0.63	0.00	6.82	40.90
	Shirak		0.00	26.33	0.00	26.33	4.66	0.00	0.00	6.20	37.20									
	Lori		0.00	26.39	0.00	26.39	6.18	0.00	0.00	6.52	39.09									
AUSTRALIA	other cities		0.00	27.80	0.00	27.80	4.56	0.00	0.00	6.47	38.83									
	Brisbane	40,800	158.47	63.29	0.00	221.77	0.00	0.00	0.00	0.00	221.77	133.02	119.38	0.00	252.40	0.00	0.00	0.00	0.00	252.40
	Adelaide		140.47	99.02	0.00	239.49	0.00	0.00	0.00	0.00	239.49									
	Melbourne		102.89	124.54	0.00	227.43	0.00	0.00	0.00	0.00	227.43									
	Perth		204.58	74.11	0.00	278.69	0.00	0.00	0.00	0.00	278.69									
	Sydney		92.86	183.75	0.00	276.61	0.00	0.00	0.00	0.00	276.61									
	Canberra		91.42	199.06	0.00	290.48	0.00	0.00	0.00	0.00	290.48									
AUSTRIA	Darwin		140.47	91.88	0.00	232.34	0.00	0.00	0.00	0.00	232.34									
	Graz	41,700	73.09	195.68	0.00	268.77	0.00	220.82	0.00	48.96	538.55	35.68	160.12	2.02	197.83	0.00	234.23	0.00	43.20	475.25
	Innsbruck		22.70	169.76	0.00	192.47	0.00	246.22	0.00	43.87	482.55									
	Linz		31.75	112.74	10.12	154.61	0.00	209.84	0.00	36.44	400.90									
	Salzburg		30.32	169.50	0.00	199.83	0.00	284.58	0.00	48.44	532.84									
BELGIUM	Vienna		20.54	152.92	0.00	173.45	0.00	209.68	0.00	38.31	421.44									
	Louvain	37,600	58.82	149.84	0.00	208.66	162.70	116.19	0.00	29.25	516.80	64.78	173.11	0.23	238.12	121.12	108.83	0.00	28.09	496.15
	Antwerp		80.99	113.81	0.00	194.80	98.63	116.22	0.00	24.58	434.23									
	Brussels		23.13	230.03	0.00	253.17	98.40	53.20	0.00	24.28	429.04									
	Liège		115.87	259.96	1.62	377.44	0.00	127.63	0.00	30.31	535.38									
	Kortrijk		58.82	158.75	0.00	217.57	162.70	116.19	0.00	29.79	526.25									
BRAZIL	Genk		58.82	119.07	0.00	177.89	162.70	116.19	0.00	27.41	484.18									
	Ghent		56.98	180.34	0.00	237.32	162.70	116.19	0.00	30.97	547.18									
	SABESP social	11,600	33.07	0.00	0.00	33.07	33.07	0.00	0.00	0.00	66.13	89.88	0.00	0.00	89.88	89.88	0.00	0.00	0.00	179.77
	SABESP favela		25.22	0.00	0.00	25.22	25.22	0.00	0.00	0.00	50.44									
	SABESP residential normal		97.53	0.00	0.00	97.53	97.53	0.00	0.00	0.00	195.05									
BULGARIA	SABESP social assistance		97.85	0.00	0.00	97.85	97.85	0.00	0.00	0.00	195.70									
	SABESP commercial		195.76	0.00	0.00	195.76	195.76	0.00	0.00	0.00	391.52									
	Sofia	13,500	0.00	62.29	0.00	62.29	0.00	18.55	11.93	18.55	111.32	0.00	92.77	0.00	92.77	0.00	18.16	9.14	24.01	144.08
	Burgas		0.00	68.25	0.00	68.25	0.00	33.79	13.25	23.06	138.36									
	Pleven		0.00	88.79	0.00	88.79	0.00	9.28	6.63	20.94	125.63									
	Razgrad		0.00	131.20	0.00	131.20	0.00	9.94	7.29	29.69	178.11									
BURKINA FASO	Stara Zagora		0.00	113.31	0.00	113.31	0.00	19.22	6.63	27.83	166.98									
	Country average	1,500	23.71	39.05	0.00	62.76	11.85	0.00	0.00	13.43	88.04	23.71	39.05	0.00	62.76	11.85	0.00	0.00	13.43	88.04
CANADA	Calgary	40,300	149.48	135.82	0.00	285.30	0.00	197.98	0.00	0.00	483.28	199.76	92.26	0.00	292.02	0.00	224.90	0.00	0.00	516.92
	Winnipeg		53.05	131.64	0.00	184.69	0.00	193.54	0.00	0.00	378.23									
	Regina		186.50	121.82	0.00	308.32	0.00	252.52	0.00	0.00	560.84									
	Richmond		464.40	0.00	0.00	464.40	0.00	300.62	0.00	0.00	765.02									
	Durham		145.36	72.01	0.00	217.37	0.00	179.84	0.00	0.00	397.21									
CHILE	Santiago de Chile	16,100	13.59	57.71	0.00	71.30	45.13	26.25	0.00	27.11	169.79	16.86	79.99	0.00	96.85	70.72	8.75	0.00	33.50	209.82
	Valparaiso		21.92	114.32	0.00	136.24	84.33	0.00	0.00	41.91	262.48									
	Concepcion		15.07	67.95	0.00	83.02	82.70	0.00	0.00	31.49	197.21									
CHINA	Beijing	8,400	26.99	0.00	20.00	46.99	0.00	16.51	0.00	0.00	63.50	26.00	0.00	5.00	31.00	0.00	16.43	0.00	0.00	51.91
	Shanghai		25.88	0.00	0.00	25.88	0.00	20.64	0.00	0.00	46.51									
	Tianjin		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	69.85									
	Shenzhen		30.16	0.00	0.00	30.16	0.00	14.29	0.00	0.00	44.45									
HONG KONG, CHINA	Guangzhou		20.95	0.00	0.00	20.95	0.00	14.29	0.00	0.00	35.24									
	Hong Kong	49,300	0.00	33.74	0.00	33.74	0.00	20.21	0.00	0.00	53.96	0.00	33.74	0.00	0.00	0.00	20.21	0.00	0.00	53.96
CHINESE TAIWAN	Taipei	37,900	25.70	15.75	0.00	41.45	16.54	0.00	0.66	2.07	60.73	19.60	19.45	0.00	39.05	13.23	0.00	7.69	1.95	61.92
	Kaohsiung		13.49	23.15	0.00	36.65	9.92	0.00	14.72	1.83	63.12									

Continued...

### Source:

For exchange rates to US\$ as per 31 December 2011: <http://nl.exchange-rates.org/historicalrates/E/USD/31-12-2011>.

For Gross Domestic Product (GDP): World Fact Book <https://www.cia.gov/library/publications/the-world-factbook/>

## Comparison of annual water cycle charges in 2011 related to a consumption of 100 m<sup>3</sup> in US\$

COUNTRY/REGION	TOWN/CITY	GDP PER CAPITA IN US\$	ACTUAL CHARGES									AVERAGE CHARGES								
			FIXED CHARGE	VARIABLE CHARGE	OTHER CHARGES DRINKING WATER	TOTAL CHARGE DRINKING WATER	SEWERAGE CHARGE	WASTE WATER TREATMENT CHARGE	OTHER CHARGES	VAT & OTHER TAXES	TOTAL ANNUAL CHARGES 100 m <sup>3</sup>	FIXED CHARGE	VARIABLE CHARGE	OTHER CHARGES DRINKING WATER	TOTAL CHARGE DRINKING WATER	SEWERAGE CHARGE	WASTE WATER TREATMENT CHARGE	OTHER CHARGES	VAT & OTHER TAXES	TOTAL ANNUAL CHARGES 100 m <sup>3</sup>
CYPRUS	Larnaca	29,100	85.53	107.56	0.00	193.09	55.72	233.26	58.32	8.10	548.49	67.43	85.08	0.00	152.51	58.96	247.25	46.06	7.24	512.01
	Lefkosia		44.24	108.60	0.00	152.84	64.79	278.62	0.00	7.65	503.89									
	Lemesos		77.75	62.20	0.00	139.96	59.61	281.10	54.63	7.00	542.30									
DENMARK	Paphos		62.20	61.94	0.00	124.15	55.72	196.00	71.27	6.21	453.35									
	Aalborg	40,200	174.47	79.39	94.22	348.08	4.36	384.80	0.00	184.24	921.49	107.77	116.03	94.22	318.01	4.75	348.51	0.00	167.80	839.08
	Aarhus		76.16	139.58	94.22	309.95	4.36	366.05	0.00	170.11	850.48									
	Copenhagen		62.81	162.61	94.22	319.64	5.23	295.39	0.00	155.07	775.33									
	Esbjerg		141.67	91.25	94.22	327.14	4.01	344.41	0.00	168.89	844.46									
FINLAND	Odense		83.75	107.30	94.22	285.27	5.76	351.91	0.00	160.69	803.63									
	Espoo	38,300	28.07	139.07	0.00	167.14	0.00	167.52	42.10	86.66	463.42	51.63	132.93	0.00	184.56	0.00	173.84	51.24	94.22	503.85
	Helsinki		42.78	107.47	0.00	150.25	0.00	151.71	64.17	84.21	450.33									
	Oulu		50.98	141.17	0.00	192.15	0.00	192.80	0.00	88.54	473.49									
	Tampere		68.27	108.52	0.00	176.79	0.00	168.57	68.27	95.13	508.75									
FRANCE	Turku		93.30	164.36	0.00	257.66	0.00	189.64	93.30	124.34	664.95									
	Vantaa		26.40	136.96	0.00	163.36	0.00	172.78	39.60	86.42	462.17									
	Bordeaux	35,000	81.16	136.04	33.97	251.17	0.00	165.77	20.33	24.05	461.32	53.53	146.42	6.79	206.74	0.00	148.59	66.37	23.90	445.60
	SEDIF		33.82	168.48	0.00	202.30	0.00	184.83	97.54	30.22	514.90									
	Lille		43.54	155.69	0.00	199.23	0.00	172.63	70.15	24.31	466.31									
GABON	Lyon		84.22	137.73	0.00	221.95	0.00	101.11	50.98	20.57	394.60									
	Paris		24.91	134.15	0.00	159.06	0.00	118.60	92.85	20.37	390.88									
	Urban average	16,000	6.71	37.56	0.00	44.27	0.00	0.00	0.00	4.43	48.70	6.71	37.56	0.00	44.27	0.00	0.00	0.00	4.43	48.70
	Country average	37,900	27.08	206.69	0.00	233.78	16.33	327.86	0.00	0.00	577.97	27.08	206.69	0.00	233.78	16.33	327.86	0.00	0.00	577.97
GERMANY	Budapest	19,600	9.51	77.03	0.00	86.54	133.86	0.00	0.00	55.10	275.50	2.38	101.82	0.00	104.19	95.74	0.00	0.00	49.98	249.91
	Debrecen		0.00	84.77	0.00	84.77	67.49	0.00	0.00	38.06	190.32									
	Miskolc		0.00	105.55	0.00	105.55	81.19	0.00	0.00	46.68	233.42									
	Pécs		0.00	139.91	0.00	139.91	100.41	0.00	0.00	60.08	300.39									
IRAN	Country average	12,200	n/a	n/a	n/a	22.41	n/a	n/a	n/a	n/a	22.41	n/a	n/a	n/a	22.41	n/a	n/a	n/a	n/a	22.41
	Jerusalem	31,000	0.00	194.84	0.00	194.84	0.00	0.00	0.00	31.16	226.00	0.00	194.84	0.00	194.84	0.00	0.00	0.00	31.16	226.00
JAPAN	Nagoya	34,300	97.31	3.11	0.00	100.43	87.19	0.00	0.00	9.38	197.00	151.13	18.48	0	169.61	101.54	0	0	13.47	284.62
	Osaka		147.92	0.00	0.00	147.92	85.64	0.00	0.00	11.52	245.08									
	Hiroshima		126.12	6.49	0.00	132.61	110.03	0.00	0.00	11.99	254.63									
	Fukuoka		132.35	21.18	0.00	153.52	134.53	0.00	0.00	14.32	302.37									
	Sapporo		205.53	0.00	0.00	205.53	93.42	0.00	0.00	14.95	313.90									
	Sendai		194.63	103.39	0.00	298.01	109.46	0.00	0.00	20.24	427.72									
	Tokyo		182.17	11.42	0.00	193.59	92.90	0.00	0.00	14.17	300.66									
	Yokohama		123.01	2.23	0.00	125.24	99.13	0.00	0.00	11.21	235.58									
LITHUANIA	Kaunas	18,700	14.64	68.31	0.00	82.94	74.69	0.00	0.00	33.10	190.73	14.29	72.58	0	86.88	90.60	0	0	37.27	214.75
	Klaipeda		17.65	61.93	0.00	79.58	87.82	0.00	0.00	35.16	202.56									
	Panevezys		11.57	62.68	0.00	74.25	119.35	0.00	0.00	40.66	234.26									
	Siauliai		13.02	106.96	0.00	119.98	98.71	0.00	0.00	45.92	264.61									
MACAO, CHINA	Vilnius		14.59	63.05	0.00	77.64	72.43	0.00	0.00	31.51	181.59									
	Country average	33,000	0.00	54.44	0.00	54.44	0.00	0.00	0.00	0.00	54.44	0.00	54.44	0.00	54.44	0.00	0.00	0.00	0.00	54.44
MALAWI	Blantyre	900	2.22	75.69	0.00	77.90	0.00	0.00	0.00	0.00	77.90	2.22	75.69	0.00	77.90	0.00	0.00	0.00	0.00	77.90
MAURITIUS	Mauritius	15,000	18.35	0.00	0.00	18.35	22.43	22.43	0.00	0.00	63.20	18.35	0.00	0.00	18.35	22.43	22.43	0.00	0.00	63.20
MOROCCO	Casablanca	5,100	9.79	38.69	0.00	48.48	19.39	0.00	0.00	4.75	72.62	9.38	41.62	0.00	51.00	16.38	0.00	0.00	4.72	72.10
	Rabat/Sale		11.95	44.39	0.00	56.35	19.08	0.00	0.00	5.28	80.71									
	Tanger		8.39	44.53	0.00	52.92	12.63	0.00	0.00	4.59	70.13									
	Tetouan		8.39	45.47	0.00	53.85	12.94	0.00	0.00	4.68	71.47									
	Marrakech		8.39	35.04	0.00	43.43	17.84	0.00	0.00	4.29	65.56									

Continued...

## Comparison of annual water cycle charges in 2011 related to a consumption of 100 m<sup>3</sup> in US\$

COUNTRY/REGION	TOWN/CITY	GDP PER CAPITA IN US\$	ACTUAL CHARGES									AVERAGE CHARGES								
			FIXED CHARGE	VARIABLE CHARGE	OTHER CHARGES DRINKING WATER	TOTAL CHARGE DRINKING WATER	SEWERAGE CHARGE	WASTE WATER TREATMENT CHARGE	OTHER CHARGES	VAT & OTHER TAXES	TOTAL ANNUAL CHARGES 100 m <sup>3</sup>	FIXED CHARGE	VARIABLE CHARGE	OTHER CHARGES DRINKING WATER	TOTAL CHARGE DRINKING WATER	SEWERAGE CHARGE	WASTE WATER TREATMENT CHARGE	OTHER CHARGES	VAT & OTHER TAXES	TOTAL ANNUAL CHARGES 100 m <sup>3</sup>
NETHERLANDS	Amsterdam	42,300	54.62	163.28	0.00	217.90	191.79	193.09	20.48	14.31	637.57	65.30	130.22	6.05	201.57	210.97	193.09	20.48	13.32	639.43
	Rotterdam		77.44	123.24	9.37	210.05	237.15	193.09	20.48	13.83	674.59									
	Den Haag		75.27	141.25	20.86	237.38	163.28	193.09	20.48	15.47	629.70									
	Utrecht		32.40	136.72	0.00	169.11	281.21	193.09	20.48	11.38	675.26									
	Eindhoven		86.77	86.63	0.00	173.40	181.42	193.09	20.48	11.64	580.03									
NORTHERN IRELAND (UK)	Country average	39,500	145.92	161.45	0.00	307.37	0.00	462.60	0.00	62.09	832.07	145.92	161.45	0.00	307.37	0.00	462.60	0.00	62.09	832.07
NORWAY	Bergen	53,300	60.22	115.93	0.00	176.15	192.55	0.00	0.00	92.17	460.87	48.09	115.09	0.00	163.19	182.09	0.00	0.00	86.32	431.60
	Oslo		35.97	114.26	0.00	150.22	171.64	0.00	0.00	80.46	402.32									
POLAND	Bydgoszcz	20,100	0.00	166.00	0.00	166.00	0.00	150.01	0.00	0.00	316.02	0.00	105.07	0.00	105.07	0.00	122.69	0.00	0.00	227.75
	Wroclaw		0.00	110.48	0.00	110.48	0.00	114.84	0.00	0.00	225.31									
	Radom		0.00	80.82	0.00	80.82	0.00	114.25	0.00	0.00	195.08									
	Bialystok		0.00	93.90	0.00	93.90	0.00	92.45	0.00	0.00	186.35									
	Tarnow		0.00	74.13	0.00	74.13	0.00	141.87	0.00	0.00	216.01									
PORTUGAL	Lisbon	23,200	62.67	45.19	13.68	121.54	0.00	44.73	2.72	6.63	175.63	50.68	75.51	1.95	128.14	0.00	91.97	6.39	10.69	237.19
	Sintra		63.29	91.94	0.00	155.23	0.00	137.17	13.28	10.11	315.80									
	Porto		51.99	94.21	0.00	146.20	0.00	78.43	8.53	14.00	247.15									
	Loures		38.88	96.28	0.00	135.16	0.00	94.43	5.05	8.11	242.76									
	Braga		42.61	58.55	0.00	101.16	0.00	81.74	6.79	8.79	198.48									
	Coimbra		58.00	80.49	0.00	138.49	0.00	98.00	4.42	14.45	255.36									
	Faro		37.32	61.89	0.00	99.21	0.00	109.26	3.95	12.74	225.16									
ROMANIA	Cluj	12,300	0.00	71.78	0.00	71.78	61.57	0.00	0.00	32.01	165.36	0.00	80.71	0.00	80.71	51.94	0.00	0.00	31.84	164.49
	Iasi		0.00	88.30	0.00	88.30	59.17	0.00	0.00	35.39	182.87									
	Oradea		0.00	83.20	0.00	83.20	34.54	0.00	0.00	28.26	146.00									
	Brasov		0.00	84.10	0.00	84.10	57.97	0.00	0.00	34.10	176.16									
	Timisoara		0.00	63.67	0.00	63.67	55.57	0.00	0.00	28.62	147.86									
	Braila		0.00	80.19	0.00	80.19	49.26	0.00	0.00	31.07	160.52									
	Sibiu		0.00	75.39	0.00	75.39	38.45	0.00	0.00	27.32	141.15									
	Constanta		0.00	90.11	0.00	90.11	80.19	0.00	0.00	40.87	211.17									
	Arad		0.00	79.59	0.00	79.59	79.59	0.00	0.00	38.20	197.39									
	Bistrita		0.00	76.29	0.00	76.29	41.15	0.00	0.00	28.19	145.62									
	Buzau		0.00	97.91	0.00	97.91	51.36	0.00	0.00	35.83	185.10									
	Tg Mures		0.00	80.19	0.00	80.19	71.48	0.00	0.00	36.40	188.08									
	Satu Mare		0.00	82.30	0.00	82.30	45.35	0.00	0.00	30.64	158.29									
	Vrancea		0.00	79.59	0.00	79.59	61.87	0.00	0.00	33.95	175.42									
	Alba		0.00	73.59	0.00	73.59	41.75	0.00	0.00	27.68	143.02									
Maramure		0.00	75.39	0.00	75.39	41.15	0.00	0.00	27.97	144.51										
Severin		0.00	82.30	0.00	82.30	8.71	0.00	0.00	21.84	112.85										
Medias		0.00	88.90	0.00	88.90	55.87	0.00	0.00	34.74	179.51										
SCOTLAND (UK)	Scotland: Band A	35,900	0.00	0.00	188.52	188.52	0.00	218.79	0.00	0.00	407.31	0.00	0.00	341.69	341.69	0.00	396.56	0.00	0.00	738.25
	Scotland: Band B		0.00	0.00	219.94	219.94	0.00	255.25	0.00	0.00	475.19									
	Scotland: Band C		0.00	0.00	251.36	251.36	0.00	291.72	0.00	0.00	543.08									
	Scotland: Band D		0.00	0.00	282.78	282.78	0.00	328.18	0.00	0.00	610.96									
	Scotland: Band E		0.00	0.00	345.62	345.62	0.00	401.11	0.00	0.00	746.73									
	Scotland: Band F		0.00	0.00	408.46	408.46	0.00	474.04	0.00	0.00	882.50									
	Scotland: Band G		0.00	0.00	471.30	471.30	0.00	546.97	0.00	0.00	1,018.27									
	Scotland: Band H		0.00	0.00	565.56	565.56	0.00	656.37	0.00	0.00	1,221.93									

Continued...

Source:

For exchange rates to US\$ as per 31 December 2011: <http://nl.exchange-rates.org/historicalrates/E/USD/31-12-2011>.

For Gross Domestic Product (GDP): World Fact Book <https://www.cia.gov/library/publications/the-world-factbook/>



## Comparison of annual water cycle charges in 2011 related to a consumption of 100 m<sup>3</sup> in US\$

COUNTRY/REGION	TOWN/CITY	ACTUAL CHARGES										AVERAGE CHARGES									
		GDP PER CAPITA IN US\$	FIXED CHARGE	VARIABLE CHARGE	OTHER CHARGES DRINKING WATER	TOTAL CHARGE DRINKING WATER	SEWERAGE CHARGE	WASTE WATER TREATMENT CHARGE	OTHER CHARGES	VAT & OTHER TAXES	TOTAL ANNUAL CHARGES 100 m <sup>3</sup>	FIXED CHARGE	VARIABLE CHARGE	OTHER CHARGES DRINKING WATER	TOTAL CHARGE DRINKING WATER	SEWERAGE CHARGE	WASTE WATER TREATMENT CHARGE	OTHER CHARGES	VAT & OTHER TAXES	TOTAL ANNUAL CHARGES 100 m <sup>3</sup>	
SINGAPORE	Singapore	59,900	0.00	90.23	27.07	117.30	0.00	21.62	51.90	13.36	204.18	0.00	90.23	27.07	117.30	0.00	21.62	51.90	13.36	204.18	
SLOVAKIA	Bratislava	23,400	107.56	0.00	0.00	107.56	107.56	0.00	0.00	41.47	256.59	128.29	0.00	0.00	128.29	102.81	0.00	0.00	46.22	277.32	
	Nitra		125.70	0.00	0.00	125.70	99.78	0.00	0.00	51.84	277.32										
	Košice		151.62	0.00	0.00	151.62	101.08	0.00	0.00	45.36	298.05										
SOUTH KOREA	Seoul	31,700	0.00	44.30	0.00	44.30	24.32	0.00	0.00	0.00	68.62	0.00	50.40	0.00	50.40	26.54	0.00	0.00	0.00	76.94	
	Busan		0.00	54.73	0.00	54.73	33.16	0.00	0.00	0.00	87.89										
	Daegu		0.00	46.49	0.00	46.49	25.31	0.00	0.00	0.00	71.81										
	Incheon		0.00	54.85	0.00	54.85	25.68	0.00	0.00	0.00	80.53										
	Gwangju		0.00	42.94	0.00	42.94	30.12	0.00	0.00	0.00	73.07										
	Daejeon		0.00	41.09	0.00	41.09	26.94	0.00	0.00	0.00	68.03										
	Ulsan		0.00	65.52	0.00	65.52	24.79	0.00	0.00	0.00	90.31										
	Gyeonggi		0.00	53.29	0.00	53.29	21.97	0.00	0.00	0.00	75.26										
SPAIN	Barcelona	30,600	79.31	77.24	0.00	156.54	19.80	56.24	0.00	17.05	249.64	58.10	58.96	12.21	129.28	25.51	64.88	7.23	15.61	242.51	
	Bilbao		26.37	55.22	0.00	81.59	12.96	77.04	5.43	13.67	190.69										
	Madrid		85.02	52.37	0.00	137.39	19.76	60.86	0.00	17.44	235.45										
	Sevilla		45.94	45.74	12.44	104.12	38.49	41.47	30.71	15.03	229.83										
	Valencia		53.87	64.24	48.62	166.73	36.56	88.79	0.00	14.84	306.92										
SWEDEN	Stockholm	40,600	89.38	32.34	0.00	121.73	134.13	28.52	0.00	71.10	355.48	86.86	66.20	0.00	153.05	130.28	87.51	0.00	92.71	463.55	
	Göteborg		117.90	60.86	0.00	178.77	176.80	78.02	0.00	108.40	541.98										
	Malmö		95.53	47.07	0.00	142.60	143.29	50.08	0.00	83.99	419.96										
	Uppsala		0.00	129.26	0.00	129.26	0.00	193.95	0.00	80.80	404.02										
	Linköping		131.47	61.44	0.00	192.91	197.20	86.95	0.00	119.26	596.32										
SWITZERLAND 1	Geneva	43,400	265.94	134.25	0.00	400.20	148.53	0.00	0.00	13.32	562.04	208.64	182.62	0	391.27	267.73	0	0	16.09	675.09	
	Zurich		239.73	127.86	0.00	367.59	476.27	0.00	0.00	20.73	864.60										
	Lausanne		308.46	207.77	0.00	516.23	127.86	0.00	0.00	15.59	659.67										
	Basel		191.79	155.56	0.00	347.35	207.77	0.00	0.00	13.53	568.65										
	Bern		37.29	287.68	0.00	324.97	378.25	0.00	0.00	17.26	720.48										
UGANDA	residential	1,300	0.00	70.01	0.00	70.01	33.60	0.00	0.00	18.65	122.26	0.00	70.01	0.00	70.01	33.60	0.00	0.00	18.65	122.26	
UNITED KINGDOM	Birmingham	35,900	40.41	226.75	0.00	267.16	0.00	156.54	0.00	0.00	423.70	44.71	201.25	0.00	245.97	0.00	245.65	0.00	0.00	491.62	
	Cardiff		46.57	194.39	0.00	240.96	0.00	342.70	0.00	0.00	583.66										
	London		41.91	182.90	0.00	224.81	0.00	166.10	0.00	0.00	390.92										
	Manchester		49.68	226.18	0.00	275.85	0.00	301.78	0.00	0.00	577.63										
	Leeds		45.00	176.04	0.00	221.04	0.00	261.15	0.00	0.00	482.19										
UNITED STATES OF AMERICA	New York	48,100	126.00	111.93	0.00	237.93	0.00	177.97	0.00	0.00	415.90	62.54	74.70	0.00	137.23	0.97	105.82	0.00	0.00	244.02	
	Washington D.C.		173.40	114.40	0.00	287.80	0.00	139.82	0.00	0.00	427.62										
	Los Angeles		0.00	64.37	0.00	64.37	0.00	64.61	0.00	0.00	128.98										
	Chicago		0.00	88.63	0.00	88.63	0.00	59.02	0.00	0.00	147.65										
	Denver		75.96	67.11	0.00	143.07	0.00	115.56	0.00	0.00	258.63										
	Miami		38.40	13.20	0.00	51.60	0.00	87.72	0.00	0.00	139.32										
	Minneapolis		24.00	63.23	0.00	87.23	6.76	96.06	0.00	0.00	190.05										

Source:  
For exchange rates to US\$ as per 31 December 2011: <http://nl.exchange-rates.org/historicalrates/E/USD/31-12-2011>.  
For Gross Domestic Product (GDP): World Fact Book <https://www.cia.gov/library/publications/the-world-factbook/>  
1 Switzerland: average for one-family-houses is displayed in the table, the charges for flats (in blocks) are quite a bit lower.

Total charge drinking water for 180 cities in 2011  
for a consumption of 100 m<sup>3</sup> in US\$

600

500

400

300

200

100

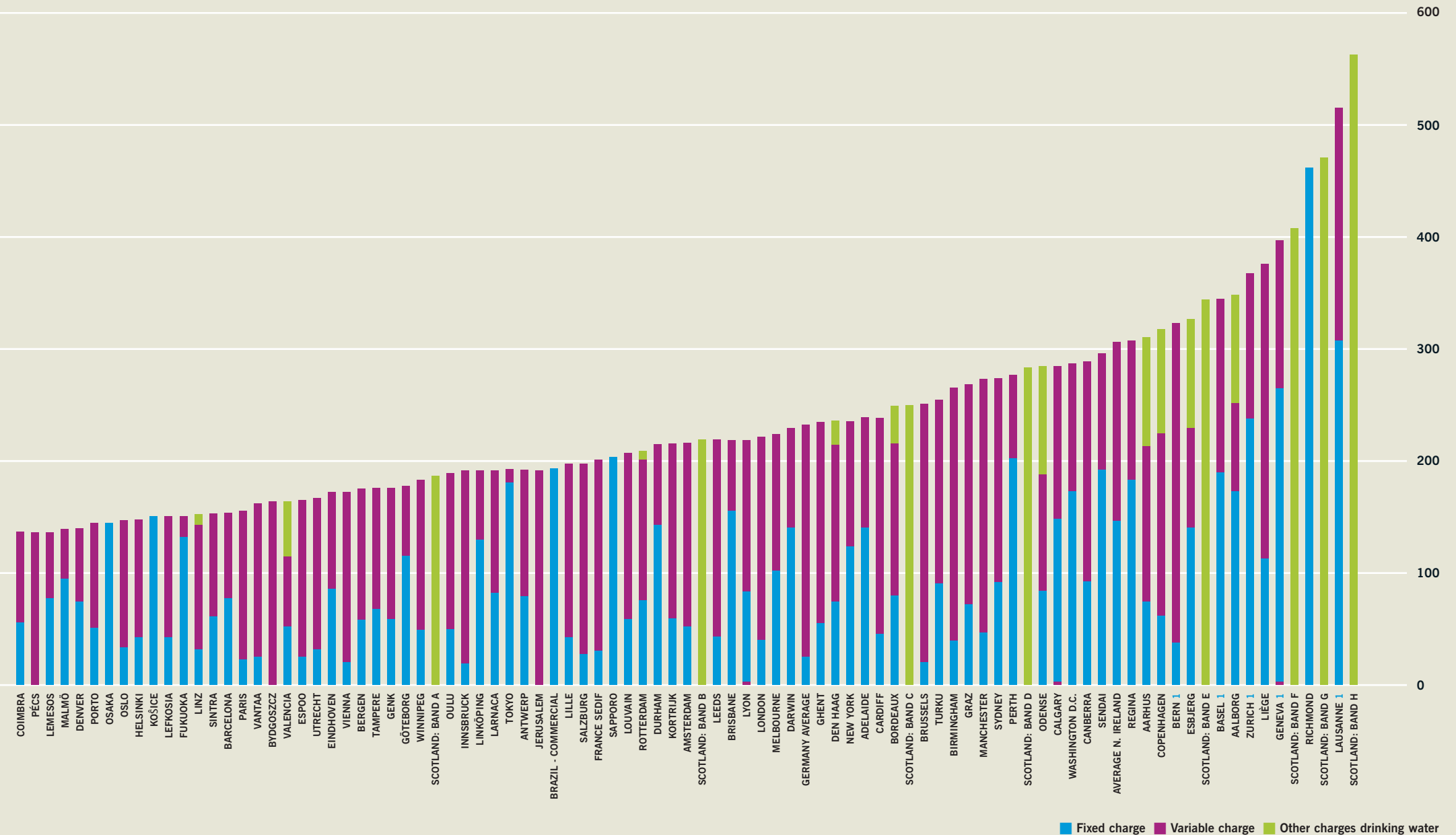
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*'From 18 US\$ to 565 US\$ for 100 m<sup>3</sup>'*

■ Fixed charge ■ Variable charge ■ Other charges drinking water

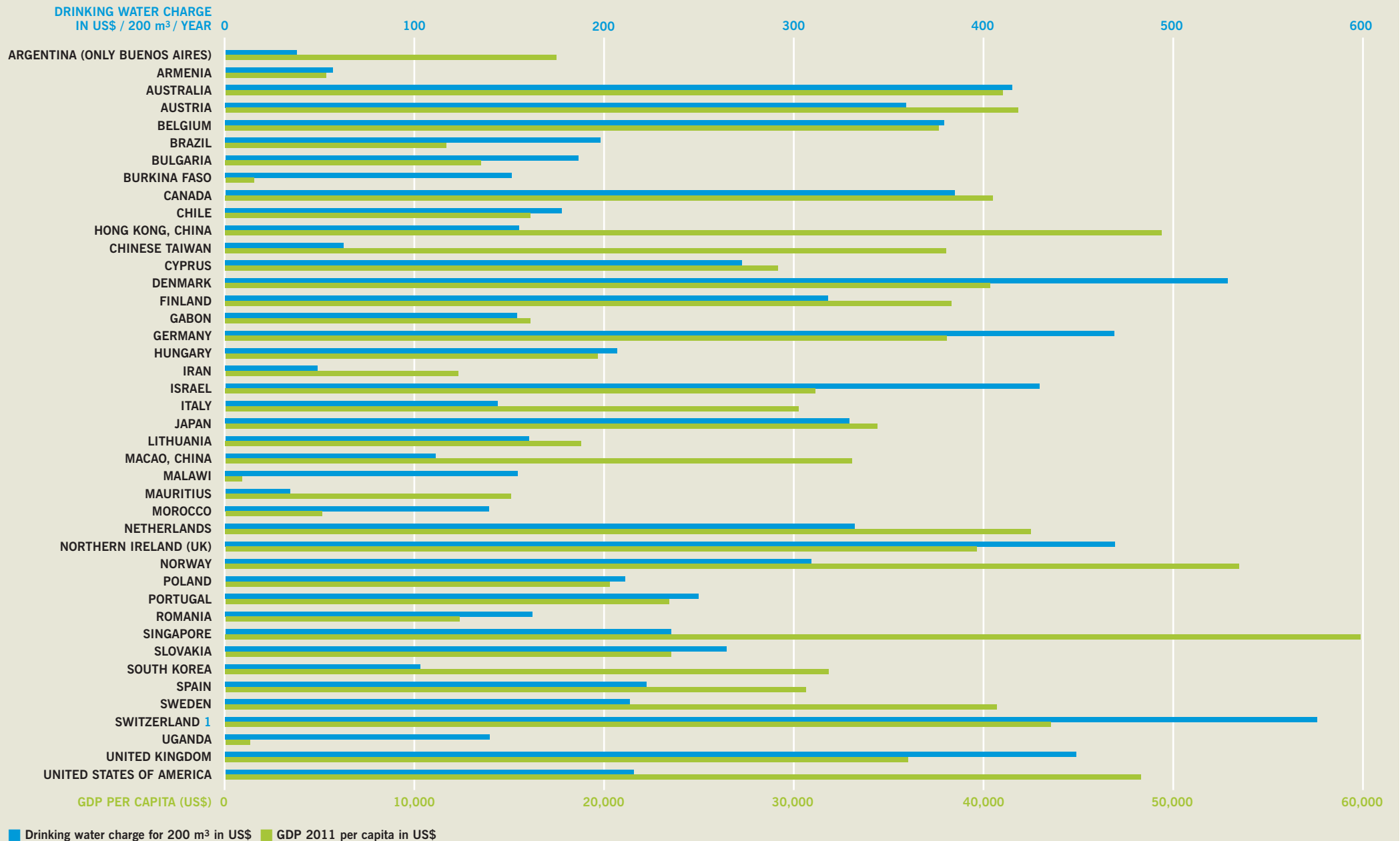


# Total charge drinking water for 180 cities in 2011 for a consumption of 100 m<sup>3</sup> in US\$



1 Switzerland: average for one-family-houses is displayed in the graph, the charges for flats (in blocks) are quite a bit lower.

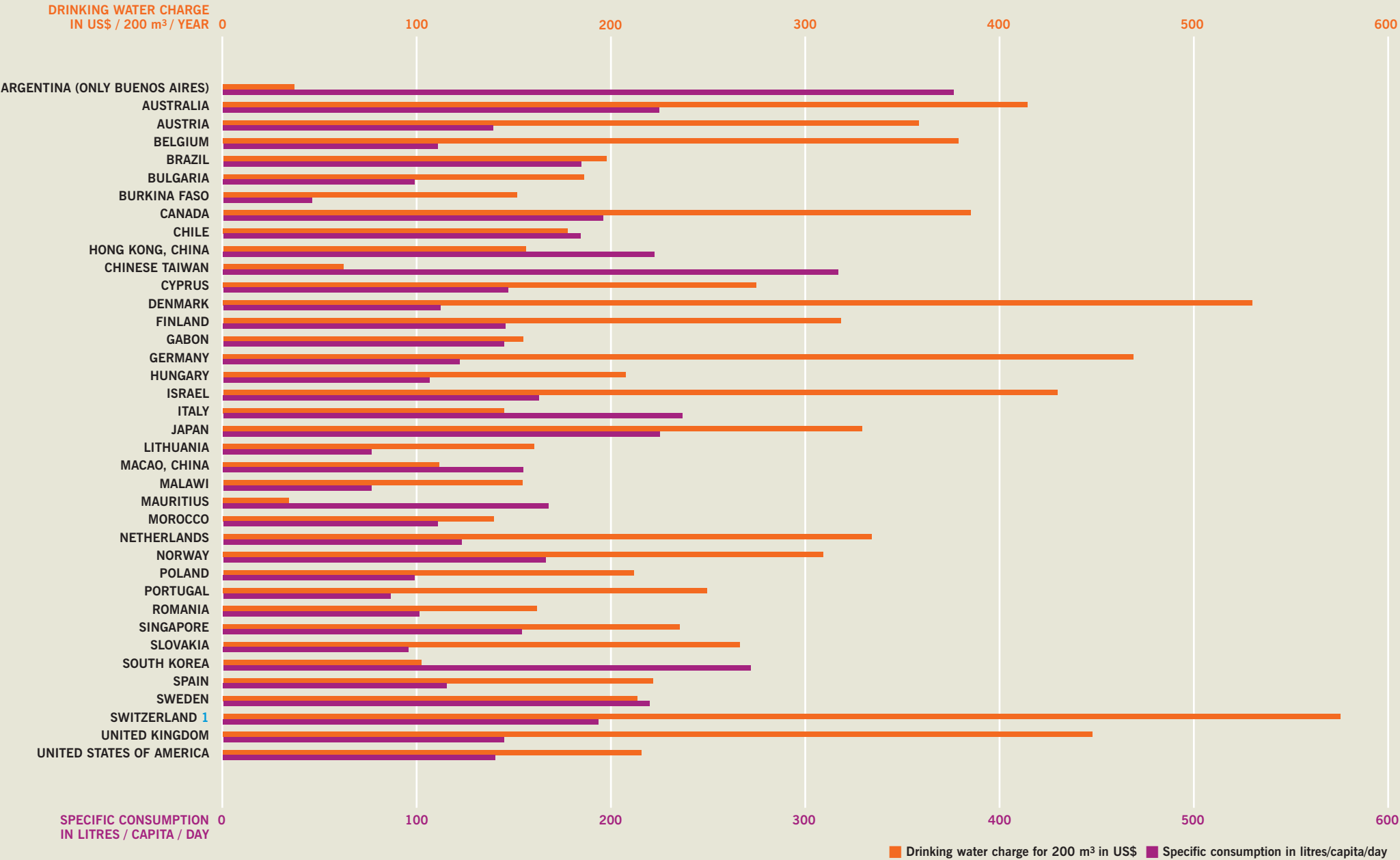
# GDP - Drinking water charge in 2011\* for 200 m<sup>3</sup> in US\$



\* Average volume of considered main cities in the country/region

1 Switzerland: average for one-family-houses is displayed in the graph, the charges for flats (in blocks) are quite a bit lower.

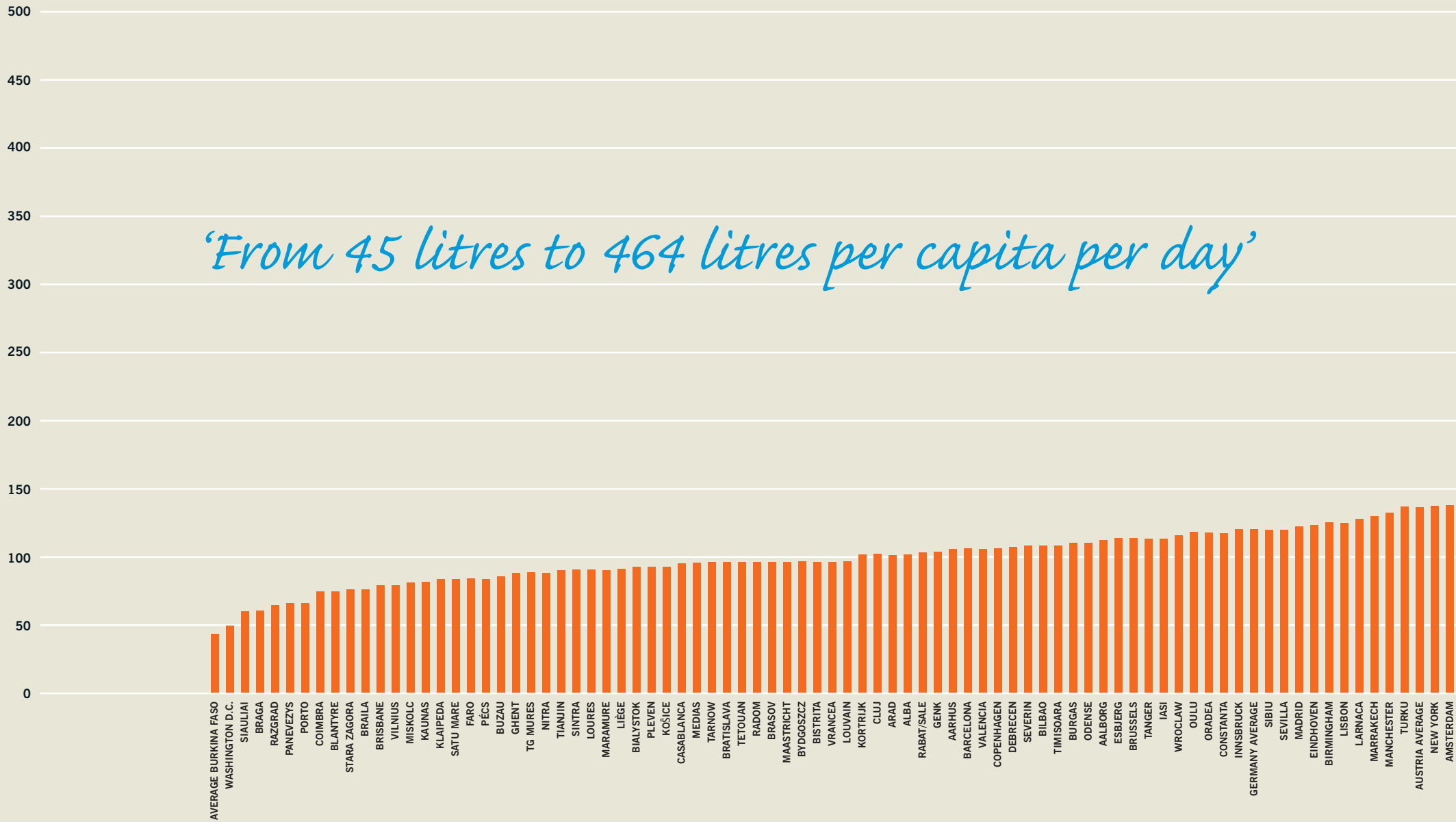
Drinking water charge - Specific water consumption \*  
charge in US\$ for 200 m<sup>3</sup> and consumption in litres/capita/day



\* Average volume of considered main cities in the country/region

1 Switzerland: average for one-family-houses is displayed in the graph, the charges for flats (in blocks) are quite a bit lower.

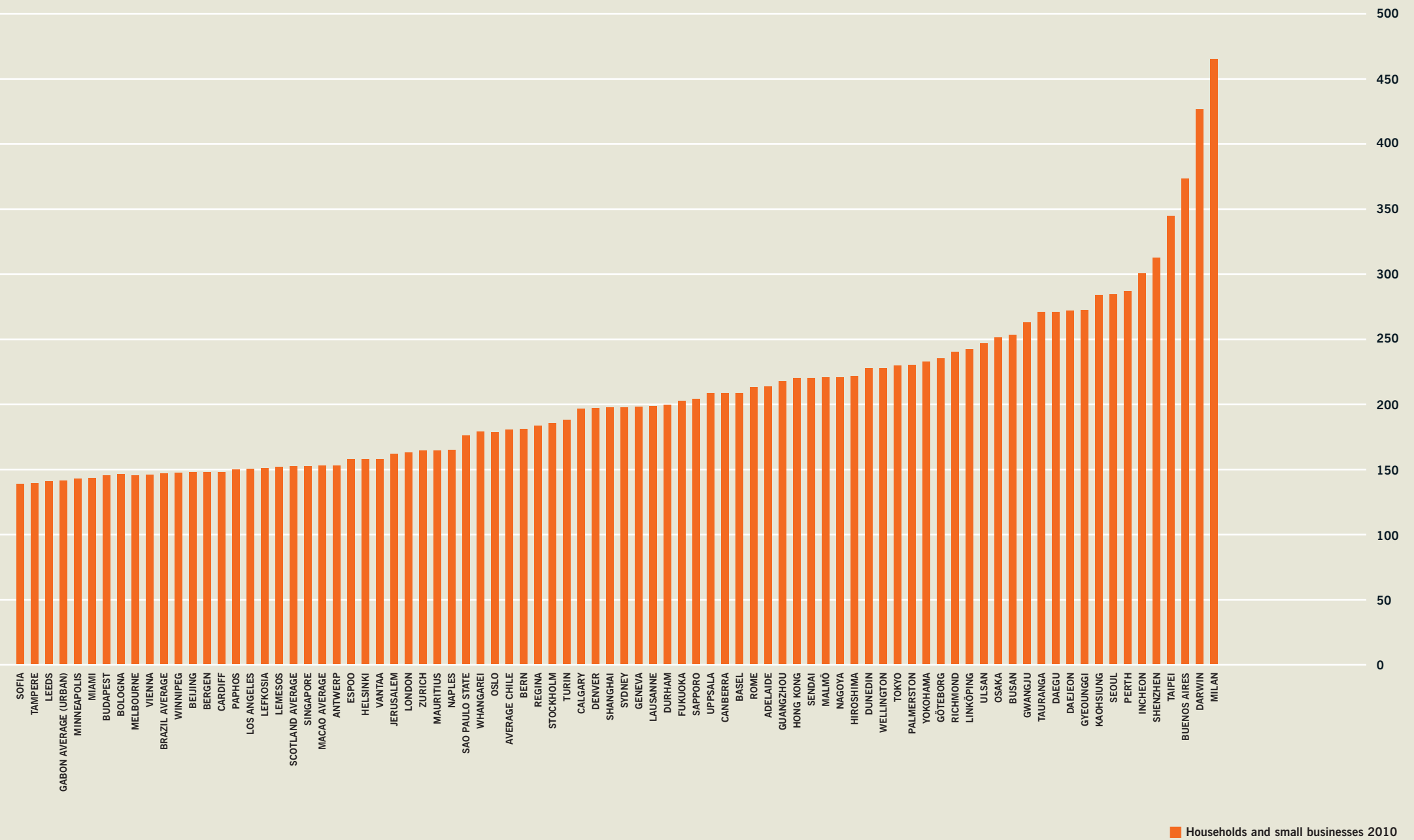
Specific water consumption for households and small businesses in 2010  
in litres/capita/day



Households and small businesses 2010

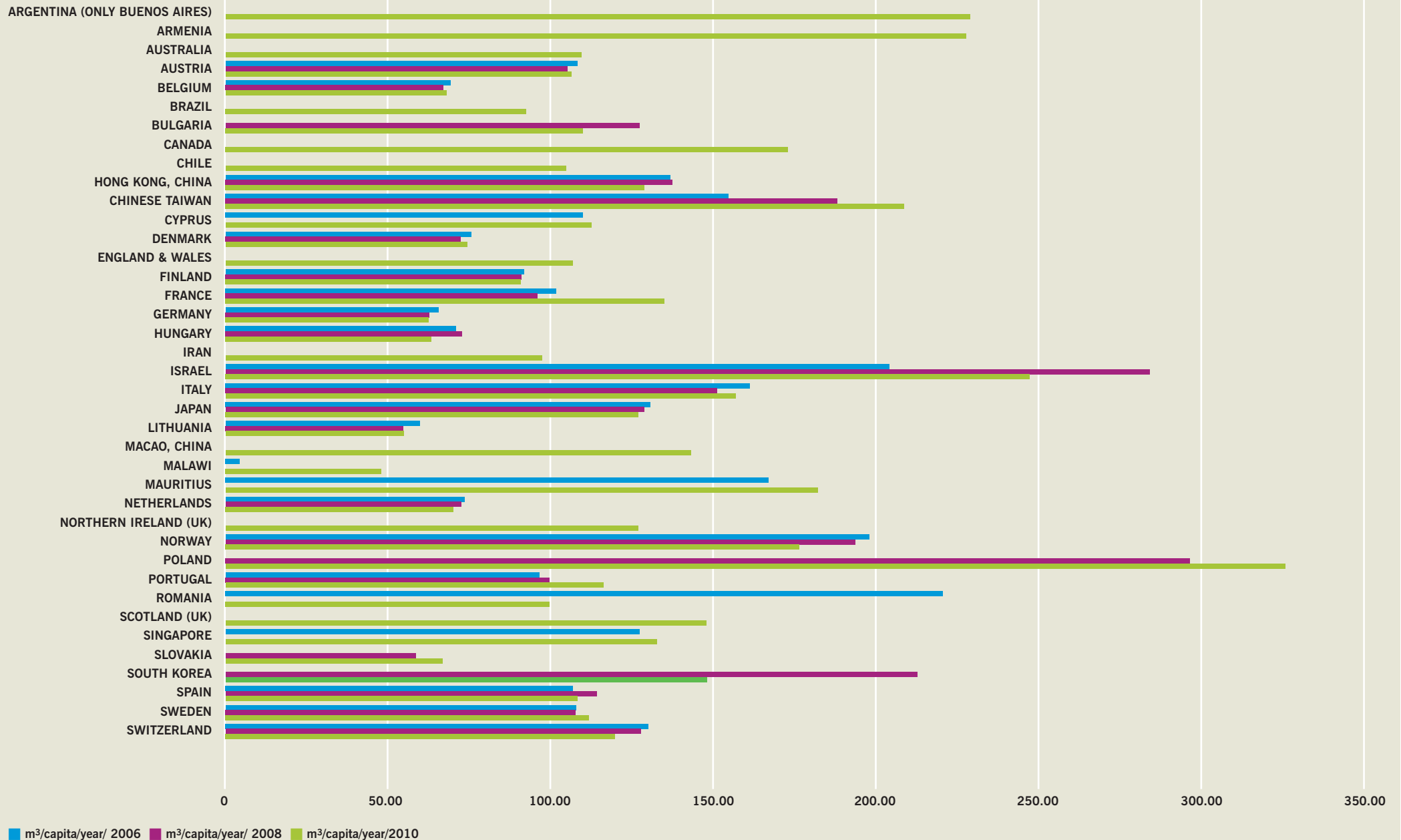


## Specific water consumption for households and small businesses in 2010 in litres/capita/day



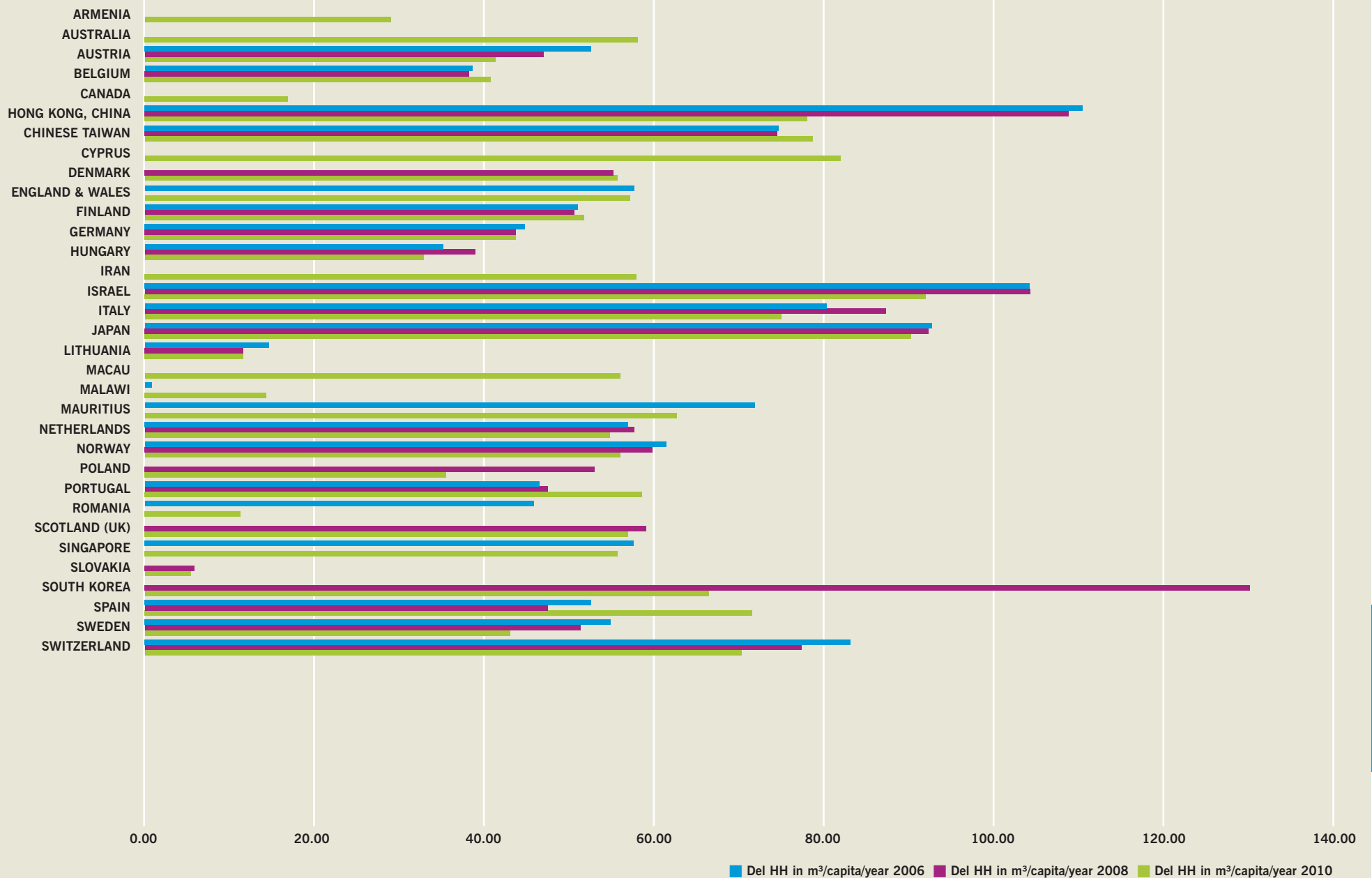
## Total abstraction for water supply in m<sup>3</sup>/capita/year \*

total abstraction/population X supply rate



\* Annual volume of water abstraction from any source with the purpose of public water supply.

Total water delivered for households and small businesses in m<sup>3</sup>/capita/year \*  
total delivery for HH/population X supply rate



\* Total water delivered: annual volume of water consumption by households for domestic consumption. This also includes mixed/commercial properties and multiple household properties, e.g. blocks or flats with an annual volume below 10 000 m<sup>3</sup>.

# Comparison of annual water cycle charges in 2011

## related to a consumption of 200 m<sup>3</sup> in US\$

COUNTRY/REGION	TOWN/CITY	GDP PER CAPITA IN US\$	ACTUAL CHARGES									AVERAGE CHARGES									WATER RATE DESIGN FOR DOMESTIC USE						
			FIXED CHARGE	VARIABLE CHARGE	OTHER CHARGES DRINKING WATER	TOTAL CHARGE DRINKING WATER	SEWERAGE CHARGE	WASTE.W TREATMENT CHARGE	OTHER CHARGES	VAT & OTHER TAXES	TOTAL ANNUAL CHARGES 200 M <sup>3</sup>	FIXED CHARGE	VARIABLE CHARGE	OTHER CHARGES DRINKING WATER	TOTAL CHARGE DRINKING WATER	SEWERAGE CHARGE	WASTE.W TREATMENT CHARGE	OTHER CHARGES	VAT & OTHER TAXES	TOTAL ANNUAL CHARGES 200 M <sup>3</sup>	FLAT RATE UN-METERED	UNI-FORM RATE	DE-CREASING BLOCK	IN-CREASING BLOCK	FIXED CHARGES FOR SERVICE	UNIQUE TARIFF SEWAGE & WW	OTHER
ARGENTINA	Buenos Aires	17,400	37.04	0.00	0.00	37.04	0.00	0.00	0.00	8.25	45.29	37.04	0.00	0.00	37.04	0.00	0.00	0.00	8.25	45.29	X	X			X		
ARMENIA	Yerevan	5,400	0.00	66.73	0.00	66.73	9.07	5.03	0.00	16.17	97.00	0.00	56.94	0.00	56.94	9.97	1.26	0.00	13.63	81.81		X					
	Shirak		0.00	52.67	0.00	52.67	9.33	0.00	0.00	12.40	74.39											X					
	Lori		0.00	52.78	0.00	52.78	12.37	0.00	0.00	13.03	78.18											X					
AUSTRALIA	other cities		0.00	55.60	0.00	55.60	9.12	0.00	0.00	12.94	77.66											X					
	Brisbane	40,800	158.47	375.67	0.00	534.14	426.06	0.00	0.00	0.00	960.20	116.39	295.77	0.00	375.19	410.21	0.00	0.00	0.00	785.41				X		X	
	Adelaide		140.47	308.29	0.00	448.76	453.17	0.00	0.00	0.00	901.93													X		X	
	Melbourne		102.89	256.23	0.00	359.12	405.99	0.00	0.00	0.00	765.11													X		X	
	Perth		204.58	156.49	0.00	361.07	553.66	0.00	0.00	0.00	914.73													X		X	
	Sydney		92.86	392.59	0.00	485.45	511.54	0.00	0.00	0.00	996.99												X			X	
	Canberra		91.42	398.13	0.00	489.54	494.34	0.00	0.00	0.00	983.88													X		X	
AUSTRIA	Darwin		140.47	182.99	0.00	323.46	436.96	0.00	0.00	0.00	760.42											X				X	
	Country average	41,700	33.45	299.88	0.00	333.33	0.00	481.70	0.00	82.44	897.47	33.45	299.88	0.00	333.33	0.00	481.70	0.00	82.44	897.47						X	
	Graz		73.09	391.36	0.00	464.45	0.00	246.22	0.00	71.07	781.73	35.68	320.24	2.02	357.95	0.00	396.68	0.00	75.46	830.09						X	
	Innsbruck		22.70	339.52	0.00	362.23	0.00	493.73	0.00	85.59	941.56															X	
	Linz		31.75	225.48	10.12	267.36	0.00	256.50	0.00	52.38	576.23															X	
BELGIUM	Salzburg		30.32	339.01	0.00	369.33	0.00	567.60	0.00	93.69	1,030.62															X	
	Vienna		20.54	305.83	0.00	326.37	0.00	419.35	0.00	74.57	820.29															X	
	Louvain	37,600	58.82	335.64	0.00	394.46	232.43	325.40	0.00	57.14	1,009.42	58.82	319.31	0.00	378.13	232.43	325.40	0.00	56.16	992.12				X	X		
	Kortrijk		58.82	355.59	0.00	414.41	232.43	325.40	0.00	58.34	1,030.58													X	X		
BRAZIL	Genk		58.82	266.69	0.00	325.51	232.43	325.40	0.00	53.00	936.35													X	X		
	SABESP - social	11,600	71.24	0.00	0.00	71.24	71.24	0.00	0.00	0.00	142.47	197.96	0.00	0.00	197.96	197.96	0.00	0.00	0.00	395.92							
	SABESP - favela		44.52	0.00	0.00	44.52	44.52	0.00	0.00	0.00	89.03																
	SABESP - residential normal		199.17	0.00	0.00	199.17	199.17	0.00	0.00	0.00	398.34															2	
BULGARIA	SABESP - social assistance		225.22	0.00	0.00	225.22	225.22	0.00	0.00	0.00	450.45																
	SABESP - commercial		449.66	0.00	0.00	449.66	449.66	0.00	0.00	0.00	899.31																
	Sofia	13,500	0.00	124.57	0.00	124.57	0.00	37.11	23.85	37.11	222.64	0.00	185.54	0.00	185.54	0.00	36.31	18.29	48.03	288.16	X	X				X	
	Burgas		0.00	136.50	0.00	136.50	0.00	67.59	26.51	46.12	276.71											X	X		X		
	Pleven		0.00	177.58	0.00	177.58	0.00	18.55	13.25	41.88	251.27											X	X		X		
BURKINA FASO	Razgrad		0.00	262.40	0.00	262.40	0.00	19.88	14.58	59.37	356.23											X	X		X		
	Stara Zagora		0.00	226.62	0.00	226.62	0.00	38.43	13.25	55.66	333.97											X	X		X		
	Country average	1,500	23.71	127.13	0.00	150.83	23.71	0.00	0.00	31.42	205.96	23.71	127.13	0.00	150.83	23.71	0.00	0.00	31.42	205.96				X	X		
	Calgary	40,300	149.48	271.64	0.00	421.12	0.00	265.80	0.00	0.00	686.92	199.76	184.52	0.00	384.28	0.00	323.44	0.00	0.00	707.72		X			X	X	
	Winnipeg		53.05	263.29	0.00	316.34	0.00	387.07	0.00	0.00	703.41													X	X		
CANADA	Regina		186.50	243.64	0.00	430.14	0.00	361.57	0.00	0.00	791.71												X	X	X		
	Richmond		464.40	0.00	0.00	464.40	0.00	300.62	0.00	0.00	765.02											X		X	X		
	Durham		145.36	144.02	0.00	289.38	0.00	302.15	0.00	0.00	591.53												X	X	X		
	Country average	16,100	13.59	115.42	0.00	129.01	90.26	52.51	0.00	51.64	323.42	16.86	159.99	0.00	176.85	141.44	17.50	0.00	63.80	399.59		X			X	3	
CHILE	Valparaiso		21.92	228.63	0.00	250.55	168.67	0.00	0.00	79.65	498.87											X			X	3	
	Concepcion		15.07	135.91	0.00	150.98	165.39	0.00	0.00	60.11	376.48											X			X	3	
	Country average	49,300	0.00	114.63	0.00	114.63	0.00	40.43	0.00	0.00	155.06	0.00	114.63	0.00	0.00	0.00	40.43	0.00	0.00	155.06		X					
HONG KONG, CHINA	Hong Kong	37,900	25.70	31.50	0.00	57.21	33.08	0.00	1.32	2.86	94.46	19.60	41.56	0.00	61.16	26.46	0.00	15.71	3.06	106.38				X	X		
	Taipei		13.49	51.61	0.00	65.11	19.85	0.00	30.10	3.26	118.30												X	X			

continued...

Source: For exchange rates to US\$ as per 31 December 2011: <http://nl.exchange-rates.org/historicalrates/E/USD/31-12-2011>. For Gross Domestic Product (GDP): World Fact Book <https://www.cia.gov/library/publications/the-world-factbook/>

1 Switzerland: average for one-family-houses is displayed in the table, the charges for flats (in blocks) are quite a bit lower.

2 Example in the world of rates discriminated both by client category (including several households categories) and by increasing blocks.

3 16% of clients receive 7% of operational revenue as direct subsidies from the State budget.

4 Volumetric charge (based on water consumption).

5 All domestic usage, including a domestic allowance for non-domestic customers, is funded/subsidized via a block grant from the government.

6 Sewerage rates are based on the capital value of the property, set by the Valuer. General for each financial year.

7 Sewerage fee is designed by the multiply the factors to drinking water fee.

8 For all areas customers will be on either unmetered or metered charges. Both have a fixed charge and a variable charge. The variable charge for unmetered bills is based on the rateable value of the property. The variable charge for metered bills is based on the amount of water used. Metered customers cannot choose to move to an unmetered charge but unmetered customers can move to a metered charge. If an unmetered customer moved to a metered charge they can choose to return to an unmetered charge within 12 months.

9 With the exception of NY, each city has separate rates. In New York, the charge for sewer is 1,59X the water charge.

10 L.A. has a seasonal rate (higher rates in the summer).

## Comparison of annual water cycle charges in 2011 related to a consumption of 200 m<sup>3</sup> in US\$

COUNTRY/REGION	TOWN/CITY	GDP PER CAPITA IN US\$	ACTUAL CHARGES								AVERAGE CHARGES								WATER RATE DESIGN FOR DOMESTIC USE										
			FIXED CHARGE	VARIABLE CHARGE	OTHER CHARGES DRINKING WATER	TOTAL CHARGE DRINKING WATER	SEWERAGE CHARGE	WASTE.W TREATMENT CHARGE	OTHER CHARGES	VAT & OTHER TAXES	TOTAL ANNUAL CHARGES 200 M <sup>3</sup>	FIXED CHARGE	VARIABLE CHARGE	OTHER CHARGES DRINKING WATER	TOTAL CHARGE DRINKING WATER	SEWERAGE CHARGE	WASTE.W TREATMENT CHARGE	OTHER CHARGES	VAT & OTHER TAXES	TOTAL ANNUAL CHARGES 200 M <sup>3</sup>	FLAT RATE UN-METERED	UNI-FORM RATE	DE-CREASING BLOCK	IN-CREASING BLOCK	FIXED CHARGES FOR SERVICE	UNIQUE TARIFF SEWAGE & WW	OTHER		
CYPRUS	Larnaca	29,100	85.53	264.62	0.00	350.15	111.45	233.26	58.32	15.95	769.12	67.43	205.20	0.00	272.64	117.93	247.25	46.06	13.24	697.11				X	X	X			
	Lefkosia		44.24	252.18	0.00	296.42	129.59	278.62	0.00	14.82	719.45												X	X	X				
	Lemesos		77.75	154.47	0.00	232.22	119.22	281.10	54.63	11.61	698.80												X	X	X				
DENMARK	Paphos		62.20	149.55	0.00	211.75	111.45	196.00	71.27	10.59	601.06												X	X	X				
	Aalborg	40,200	174.47	158.77	188.43	521.68	8.72	673.54	0.00	301.00	1,504.95	107.77	232.05	188.43	528.26	9.49	651.39	0.00	297.30	1,486.43		X		X	X				
	Aarhus		76.16	279.16	188.43	543.75	8.72	732.16	0.00	321.17	1,605.81											X		X	X				
	Copenhagen		62.81	325.22	188.43	576.46	10.47	590.84	0.00	294.44	1,472.21											X		X	X				
	Esbjerg		141.67	182.50	188.43	512.61	8.03	600.12	0.00	280.21	1,400.96											X		X	X				
FINLAND	Odense		83.75	214.60	188.43	486.78	11.52	660.28	0.00	289.66	1,448.24											X		X	X				
	Espoo	38,300	28.07	278.14	0.00	306.21	0.00	335.04	42.10	157.17	840.51	51.63	265.85	0.00	317.48	0.00	347.68	51.24	164.77	881.17		X		X	X				
	Helsinki		42.78	214.92	0.00	257.70	0.00	303.43	64.17	143.82	769.12											X		X	X				
	Oulu		50.98	282.36	0.00	333.34	0.00	385.61	0.00	165.36	884.30											X		X	X				
	Tampere		68.27	217.04	0.00	285.30	0.00	337.14	68.27	158.86	849.57											X		X	X				
GABON	Turku		93.30	328.72	0.00	422.02	0.00	379.28	93.30	205.76	1,100.37													X	X				
	Vantaa		26.40	273.93	0.00	300.32	0.00	345.58	39.60	157.66	843.16											X		X	X				
GABON	Urban average	16,000	6.71	147.23	0.00	153.94	0.00	0.00	0.00	15.39	169.33	6.71	147.23	0.00	153.94	0.00	0.00	0.00	15.39	169.33				X					
GERMANY	Country average	37,900	54.17	413.39	0.00	467.56	32.66	655.72	0.00	0.00	1,155.93	54.17	413.39	0.00	467.56	32.66	655.72	0.00	0.00	1,155.93					X				
HUNGARY	Budapest	19,600	9.51	154.07	0.00	163.57	267.72	0.00	0.00	107.82	539.12	2.38	203.63	0.00	206.01	191.47	0.00	0.00	99.37	496.85					X				
	Debrecen		0.00	169.54	0.00	169.54	134.97	0.00	0.00	76.13	380.64																		
	Miskolc		0.00	211.10	0.00	211.10	162.38	0.00	0.00	93.37	466.85																		
IRAN	Pécs		0.00	279.82	0.00	279.82	200.81	0.00	0.00	120.16	600.79																		
	Country average	12,200	n/a	n/a	n/a	44.83	n/a	n/a	n/a	n/a	44.83	n/a	n/a	n/a	44.83	n/a	n/a	n/a	n/a	44.83									
ISRAEL	Jerusalem	31,000	0.00	427.65	0.00	427.65	0.00	0.00	0.00	68.35	496.00	0.00	427.65	0.00	427.65	0.00	0.00	0.00	68.35	496.00				X					
ITALY	Bologna	30,100	16.69	202.44	0.00	219.14	40.28	108.52	0.00	36.79	404.72	14.14	129.29	0.00	143.43	36.22	98.96	0.00	27.85	306.46				X	X				
	Milan		0.00	39.33	0.00	39.33	27.99	71.79	0.00	13.92	153.03													X	X				
	Naples		10.85	164.47	0.00	175.32	26.55	76.12	0.00	27.80	305.79													X	X				
	Rome		27.60	99.54	0.00	127.14	38.51	111.06	0.00	27.60	304.31													X	X				
	Turin		15.55	140.66	0.00	156.21	47.77	127.33	0.00	33.14	364.44													X	X				
JAPAN	Nagoya	34,300	97.31	150.10	0.00	247.41	188.09	0.00	0.00	21.77	457.27	151.13	177.00	0.00	328.13	212.33	0.00	0.00	26.91	567.37		X		X					
	Osaka		147.92	100.69	0.00	248.61	148.96	0.00	0.00	19.67	417.23											X		X					
	Hiroshima		126.12	133.90	0.00	260.02	235.89	0.00	0.00	24.65	520.57											X		X					
	Fukuoka		132.35	171.27	0.00	303.62	280.58	0.00	0.00	29.12	613.31											X		X					
	Sapporo		205.53	217.98	0.00	423.51	166.45	0.00	0.00	29.43	619.39											X		X					
	Sendai		194.63	314.68	0.00	509.30	216.27	0.00	0.00	36.12	761.70											X		X					
	Tokyo		182.17	149.99	0.00	332.17	235.63	0.00	0.00	28.23	596.03											X		X					
LITHUANIA	Yokohama		123.01	177.40	0.00	300.40	226.81	0.00	0.00	26.29	553.50											X		X					
	Kaunas	18,700	14.64	136.61	0.00	151.25	149.37	0.00	0.00	63.13	363.75	14.29	145.17	0.00	159.46	181.20	0.00	0.00	71.54	412.20					X			4	
	Klaipeda		17.65	123.85	0.00	141.51	175.64	0.00	0.00	66.60	383.75														X			4	
	Panevezys		11.57	125.35	0.00	136.93	238.70	0.00	0.00	78.88	454.51														X			4	
MACAO, CHINA	Siauliai		13.02	213.93	0.00	226.94	197.41	0.00	0.00	89.11	513.47														X			4	
	Vilnius		14.59	126.10	0.00	140.70	144.87	0.00	0.00	59.97	345.53														X			4	
MACAO, CHINA	Country average	33,000	0.00	110.81	0.00	110.81	0.00	0.00	0.00	0.00	110.81	0.00	110.81	0.00	110.81	0.00	0.00	0.00	0.00	110.81			X						
MALAWI	Blantyre	900	2.22	151.38	0.00	153.59	0.00	0.00	0.00	0.00	153.59	2.22	151.38	0.00	0.00	0.00	0.00	0.00	0.00	153.59				X	X				
MAURITIUS	Mauritius	15,000	18.35	16.11	0.00	34.45	56.27	39.92	0.00	0.00	130.64	18.35	16.11	0.00	34.45	56.27	39.92	0.00	0.00	130.64									

continued...

**Source:** For exchange rates to US\$ as per 31 December 2011: <http://nl.exchange-rates.org/historicalrates/E/USD/31-12-2011>. For Gross Domestic Product (GDP): World Fact Book <https://www.cia.gov/library/publications/the-world-factbook/>

**1** Switzerland: average for one-family-houses is displayed in the table, the charges for flats (in blocks) are quite a bit lower.

**2** Example in the world of rates discriminated both by client category (including several households categories) and by increasing blocks.

**3** 16% of clients receive 7% of operational revenue as direct subsidies from the State budget.

**4** Volumetric charge (based on water consumption).

**5** All domestic usage, including a domestic allowance for non-domestic customers, is funded/subsidized via a block grant from the government.

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**9** With the exception of NY, each city has separate rates. In New York, the charge for sewer is 1,59X the water charge.

**10** L.A. has a seasonal rate (higher rates in the summer).

# Comparison of annual water cycle charges in 2011

## related to a consumption of 200 m<sup>3</sup> in US\$

COUNTRY/REGION	TOWN/CITY	GDP PER CAPITA IN US\$	ACTUAL CHARGES									AVERAGE CHARGES									WATER RATE DESIGN FOR DOMESTIC USE							
			FIXED CHARGE	VARIABLE CHARGE	OTHER CHARGES DRINKING WATER	TOTAL CHARGE DRINKING WATER	SEWERAGE CHARGE	WASTE.W TREATMENT CHARGE	OTHER CHARGES	VAT & OTHER TAXES	TOTAL ANNUAL CHARGES 200 M <sup>3</sup>	FIXED CHARGE	VARIABLE CHARGE	OTHER CHARGES DRINKING WATER	TOTAL CHARGE DRINKING WATER	SEWERAGE CHARGE	WASTE.W TREATMENT CHARGE	OTHER CHARGES	VAT & OTHER TAXES	TOTAL ANNUAL CHARGES 200 M <sup>3</sup>	FLAT RATE UN-METERED	UNI-FORM RATE	DE-CREASING BLOCK	IN-CREASING BLOCK	FIXED CHARGES FOR SERVICE	UNIQUE TARIFF SEWAGE & WW	OTHER	
MOROCCO	Casablanca	5,100	9.79	158.69	0.00	168.48	40.01	0.00	0.00	14.59	223.09	9.38	129.00	0.00	138.38	34.62	0.00	0.00	12.11	185.12				X				
	Rabat/Sale		11.95	130.14	0.00	142.10	38.31	0.00	0.00	12.63	193.03												X					
	Tanger		8.39	121.77	0.00	130.16	26.03	0.00	0.00	10.93	167.12												X					
	Tetouan		8.39	125.16	0.00	133.54	27.16	0.00	0.00	11.25	171.95												X					
	Marrakech		8.39	109.26	0.00	117.64	41.61	0.00	0.00	11.15	170.40												X					
NETHERLANDS	Amsterdam	42,300	54.62	326.56	0.00	381.19	191.79	193.09	40.95	25.33	832.35	65.30	260.45	6.05	331.79	210.97	193.09	40.95	22.37	799.17	X	X			X	X		
	Rotterdam		77.44	246.48	9.37	333.29	237.15	193.09	40.95	22.46	826.93										X	X			X	X		
	Den Haag		75.27	282.50	20.86	378.63	163.28	193.09	40.95	25.18	801.13											X			X	X		
	Utrecht		32.40	273.43	0.00	305.83	281.21	193.09	40.95	20.81	841.89											X			X	X		
	Eindhoven		86.77	173.26	0.00	260.03	181.42	193.09	40.95	18.06	693.56											X			X	X		
NEW ZEALAND	Wellington	27,900	97.23	0.00	171.13	268.36	0.00	217.80	0.00	0.00	486.16	118.23	98.01	34.23	250.47	0.00	238.80	0.00	0.00	489.27								
	Dunedin		280.03	0.00	0.00	280.03	0.00	241.13	0.00	0.00	521.16																	
	Palmerston		175.02	0.00	0.00	175.02	0.00	97.23	0.00	0.00	272.25																	
	Tauranga		19.45	217.80	0.00	237.25	0.00	217.80	0.00	0.00	455.04																	
	Whangarei		19.45	272.25	0.00	291.69	0.00	420.04	0.00	0.00	711.74																	
NORTHERN IRELAND (UK)	Country average	39,500	145.92	322.89	0.00	468.81	0.00	697.01	0.00	93.14	1,258.96	145.92	322.89	0.00	468.81	0.00	697.01	0.00	93.14	1,258.96								5
NORWAY	Bergen	53,300	120.45	231.86	0.00	352.30	385.26	0.00	0.00	184.35	921.91	78.21	230.19	0.00	308.39	364.27	0.00	0.00	168.14	840.80	X	X			X	X		
	Oslo		35.97	228.51	0.00	264.48	343.27	0.00	0.00	151.94	759.69										X	X			X	X		
POLAND	Bydgoszcz	20,100	0.00	332.01	0.00	332.01	0.00	300.03	0.00	0.00	632.03	0.00	210.14	0.00	210.14	0.00	245.37	0.00	0.00	455.51		X						
	Wroclaw		0.00	220.95	0.00	220.95	0.00	229.67	0.00	0.00	450.62											X						
	Radom		0.00	161.64	0.00	161.64	0.00	228.51	0.00	0.00	390.15											X						
	Bialystok		0.00	187.81	0.00	187.81	0.00	184.90	0.00	0.00	372.71											X						
	Tarnow		0.00	148.27	0.00	148.27	0.00	283.75	0.00	0.00	432.02											X						
PORTUGAL	Lisbon	23,200	62.67	122.81	13.68	199.17	0.00	70.65	5.44	11.13	286.39	50.68	195.95	1.95	248.59	0.00	162.33	11.81	19.39	442.12					X	X		
	Sintra		63.29	217.64	0.00	280.94	0.00	250.31	26.57	18.45	576.27													X	X			
	Porto		51.99	199.24	0.00	251.23	0.00	78.43	17.05	20.80	367.51													X	X			
	Loures		38.88	328.69	0.00	367.57	0.00	303.60	10.11	22.06	703.33													X	X			
	Braga		42.61	150.70	0.00	193.31	0.00	127.10	6.79	17.04	344.24													X	X			
	Coimbra		58.00	207.50	0.00	265.50	0.00	160.24	8.84	26.07	460.65													X	X			
	Faro		37.32	145.06	0.00	182.38	0.00	145.94	7.90	20.18	356.41													X	X			
ROMANIA	Cluj	12,300	0.00	143.57	0.00	143.57	123.14	0.00	0.00	64.01	330.72	0.00	161.42	0.00	161.42	103.89	0.00	0.00	63.67	328.99	X	X					X	
	Iasi		0.00	176.61	0.00	176.61	118.34	0.00	0.00	70.79	365.73											X	X			X		
	Oradea		0.00	166.40	0.00	166.40	69.08	0.00	0.00	56.51	291.99											X	X			X		
	Brasov		0.00	168.20	0.00	168.20	115.94	0.00	0.00	68.19	352.33											X	X			X		
	Timisoara		0.00	127.35	0.00	127.35	111.13	0.00	0.00	57.24	295.72											X	X			X		
	Braila		0.00	160.39	0.00	160.39	98.52	0.00	0.00	62.14	321.04											X	X			X		
	Sibiu		0.00	150.78	0.00	150.78	76.89	0.00	0.00	54.64	282.31											X	X			X		
	Constanta		0.00	180.21	0.00	180.21	160.39	0.00	0.00	81.74	422.34											X	X			X		
	Arad		0.00	159.19	0.00	159.19	159.19	0.00	0.00	76.41	394.78											X	X			X		
	Bistrita		0.00	152.58	0.00	152.58	82.30	0.00	0.00	56.37	291.25											X	X			X		
	Buzau		0.00	195.83	0.00	195.83	102.72	0.00	0.00	71.65	370.20											X	X			X		
	Tg Mures		0.00	160.39	0.00	160.39	142.97	0.00	0.00	72.81	376.16											X	X			X		
	Satu Mare		0.00	164.59	0.00	164.59	90.71	0.00	0.00	61.27	316.57											X	X			X		
	Vrancea		0.00	159.19	0.00	159.19	123.75	0.00	0.00	67.90	350.84											X	X			X		
	Alba		0.00	147.17	0.00	147.17	83.50	0.00	0.00	55.36	286.03											X	X			X		

continued...

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## Comparison of annual water cycle charges in 2011 related to a consumption of 200 m<sup>3</sup> in US\$

COUNTRY/REGION	TOWN/CITY	GDP PER CAPITA IN US\$	ACTUAL CHARGES									AVERAGE CHARGES							WATER RATE DESIGN FOR DOMESTIC USE								
			FIXED CHARGE	VARIABLE CHARGE	OTHER CHARGES DRINKING WATER	TOTAL CHARGE DRINKING WATER	SEWERAGE CHARGE	WASTE.W TREATMENT CHARGE	OTHER CHARGES	VAT & OTHER TAXES	TOTAL ANNUAL CHARGES 200 M <sup>3</sup>	FIXED CHARGE	VARIABLE CHARGE	OTHER CHARGES DRINKING WATER	TOTAL CHARGE DRINKING WATER	SEWERAGE CHARGE	WASTE.W TREATMENT CHARGE	OTHER CHARGES	VAT & OTHER TAXES	TOTAL ANNUAL CHARGES 200 M <sup>3</sup>	FLAT RATE UN-METERED	UNI-FORM RATE	DE-CREASING BLOCK	IN-CREASING BLOCK	FIXED CHARGES FOR SERVICE	UNIQUE TARIFF SEWAGE & WW	OTHER
ROMANIA (continued)	Maramure		0.00	150.78	0.00	150.78	82.30	0.00	0.00	55.94	289.01										X	X				X	
	Severin		0.00	164.59	0.00	164.59	17.42	0.00	0.00	43.68	225.70										X	X				X	
	Medias		0.00	177.81	0.00	177.81	111.73	0.00	0.00	69.49	359.03										X	X				X	
SINGAPORE	Singapore	59,900	0.00	180.47	54.14	234.61	0.00	43.24	51.90	23.08	352.82	0.00	180.47	54.14	234.61	0.00	43.24	51.90	23.08	352.82				X			
SLOVAKIA	Bratislava	23,400	233.26	0.00	0.00	233.26	264.36	0.00	0.00	103.67	601.29	264.36	0.00	0.00	264.36	282.50	0.00	0.00	113.17	660.04		X	X		X		
	Nitra		248.81	0.00	0.00	248.81	285.10	0.00	0.00	114.04	647.95										X	X		X			
	Košice		311.01	0.00	0.00	311.01	298.05	0.00	0.00	121.81	730.88										X	X		X			
SOUTH AUSTRALIA	Adelaide	40,800	145.37	359.33	36.75	541.45	466.83	0.00	0.00	0.00	1,008.28	145.37	359.33	36.75	541.45	466.83	0.00	0.00	0.00	1,008.28				X	X	X	6
SOUTH KOREA	Seoul	31,700	0.00	88.60	0.00	88.60	47.08	0.00	0.00	0.00	135.68	0.00	100.81	0.00	100.81	52.88	0.00	0.00	0.00	153.69				X			7
	Busan		0.00	109.47	0.00	109.47	66.31	0.00	0.00	0.00	175.78												X				7
	Daegu		0.00	92.98	0.00	92.98	50.63	0.00	0.00	0.00	143.61												X				7
	Incheon		0.00	109.71	0.00	109.71	51.35	0.00	0.00	0.00	161.06												X				7
	Gwangju		0.00	85.89	0.00	85.89	60.24	0.00	0.00	0.00	146.13												X				7
	Daejeon		0.00	82.17	0.00	82.17	53.89	0.00	0.00	0.00	136.06												X				7
	Ulsan		0.00	131.05	0.00	131.05	49.58	0.00	0.00	0.00	180.63												X				7
	Gyeonggi		0.00	106.58	0.00	106.58	43.94	0.00	0.00	0.00	150.52												X				7
	SPAIN	Barcelona	30,600	79.31	231.76	0.00	311.07	45.15	206.10	0.00	41.36	603.68	58.10	145.59	16.79	220.48	50.84	131.55	13.37	28.31	444.56				X	X	
Bilbao			26.37	113.11	0.00	139.48	25.92	131.64	5.43	22.67	325.13												X	X			
Madrid			85.02	127.54	0.00	212.56	32.84	101.48	0.00	27.75	374.63												X	X			
Sevilla			45.94	127.05	26.25	199.24	77.18	85.43	61.43	29.62	452.90												X	X			
Valencia			53.87	128.49	57.69	240.05	73.13	133.11	0.00	20.15	466.44												X	X			
SWEDEN	Stockholm	40,600	89.38	64.69	0.00	154.07	134.13	57.04	0.00	86.31	431.56	86.86	125.94	0.00	212.79	130.27	165.30	0.00	127.09	635.46		X			X		
	Göteborg		117.90	121.73	0.00	239.63	176.80	156.04	0.00	143.12	715.59														X		
	Malmö		95.53	94.14	0.00	189.66	143.23	100.17	0.00	108.27	541.33														X		
	Uppsala		0.00	226.24	0.00	226.24	0.00	339.36	0.00	141.40	707.00														X		
SWITZERLAND 1	Linköping		131.47	122.89	0.00	254.35	197.20	173.90	0.00	156.36	781.81														X		
	Geneva	43,400	265.94	268.50	0.00	534.45	297.06	0.00	0.00	20.25	851.76	208.64	365.25	0	573.89	437.45	0.00	0	24.71	1,036.05			X			X	
	Zurich		239.73	255.72	0.00	495.45	648.88	0.00	0.00	28.12	1,172.45												X			X	
	Lausanne		308.46	415.54	0.00	724.00	255.72	0.00	0.00	23.77	1,003.48												X			X	
	Basel		191.79	311.12	0.00	502.91	415.54	0.00	0.00	22.46	940.91												X			X	
UGANDA	Bern		37.29	575.36	0.00	612.65	570.03	0.00	0.00	28.96	1,211.65												X			X	
	Uganda residential	1,300	0.00	140.02	0.00	140.02	140.02	0.00	0.00	50.41	330.44	0.00	140.02	0.00	140.02	140.02	0.00	0.00	50.41	330.44				X			
UNITED KINGDOM	Birmingham	35,900	40.41	453.51	0.00	493.91	0.00	294.08	0.00	0.00	787.99	44.71	402.50	0.00	447.22	0.00	409.68	0.00	0.00	856.89							8
	Cardiff		46.57	388.77	0.00	435.34	0.00	562.76	0.00	0.00	998.11																
	London		41.91	365.80	0.00	407.71	0.00	257.69	0.00	0.00	665.40																
	Manchester		49.68	452.36	0.00	502.03	0.00	476.26	0.00	0.00	978.30																
	Leeds		45.00	352.08	0.00	397.08	0.00	457.59	0.00	0.00	854.67																
UNITED STATES OF AMERICA	New York	48,100	126.00	223.90	0.00	349.90	0.00	356.00	0.00	0.00	705.90	62.54	152.21	0.00	214.74	1.67	202.07	0.00	0.00	418.48		X			X		
	Washington D.C.		173.40	228.80	0.00	402.20	0.00	279.64	0.00	0.00	681.84												X		X	X	9
	Los Angeles		0.00	128.74	0.00	128.74	0.00	129.22	0.00	0.00	257.96															X	10
	Chicago		0.00	177.26	0.00	177.26	0.00	157.76	0.00	0.00	335.02												X				
	Denver		75.96	134.21	0.00	210.17	0.00	167.13	0.00	0.00	377.30													X	X	X	
	Miami		38.40	46.08	0.00	84.48	0.00	168.60	0.00	0.00	253.08												X	X	X		
	Minneapolis		24.00	126.46	0.00	150.46	11.66	156.12	0.00	0.00	318.24											X		X	X		

Source: For exchange rates to US\$ as per 31 December 2011: <http://nl.exchange-rates.org/historicalrates/E/USD/31-12-2011>. For Gross Domestic Product (GDP): World Fact Book <https://www.cia.gov/library/publications/the-world-factbook/>

1 Switzerland: average for one-family-houses is displayed in the table, the charges for flats (in blocks) are quite a bit lower.

2 Example in the world of rates discriminated both by client category (including several households categories) and by increasing blocks.

3 16% of clients receive 7% of operational revenue as direct subsidies from the State budget.

4 Volumetric charge (based on water consumption).

5 All domestic usage, including a domestic allowance for non-domestic customers, is funded/subsidized via a block grant from the government.

6 Sewerage rates are based on the capital value of the property, set by the Valuer. General for each financial year.

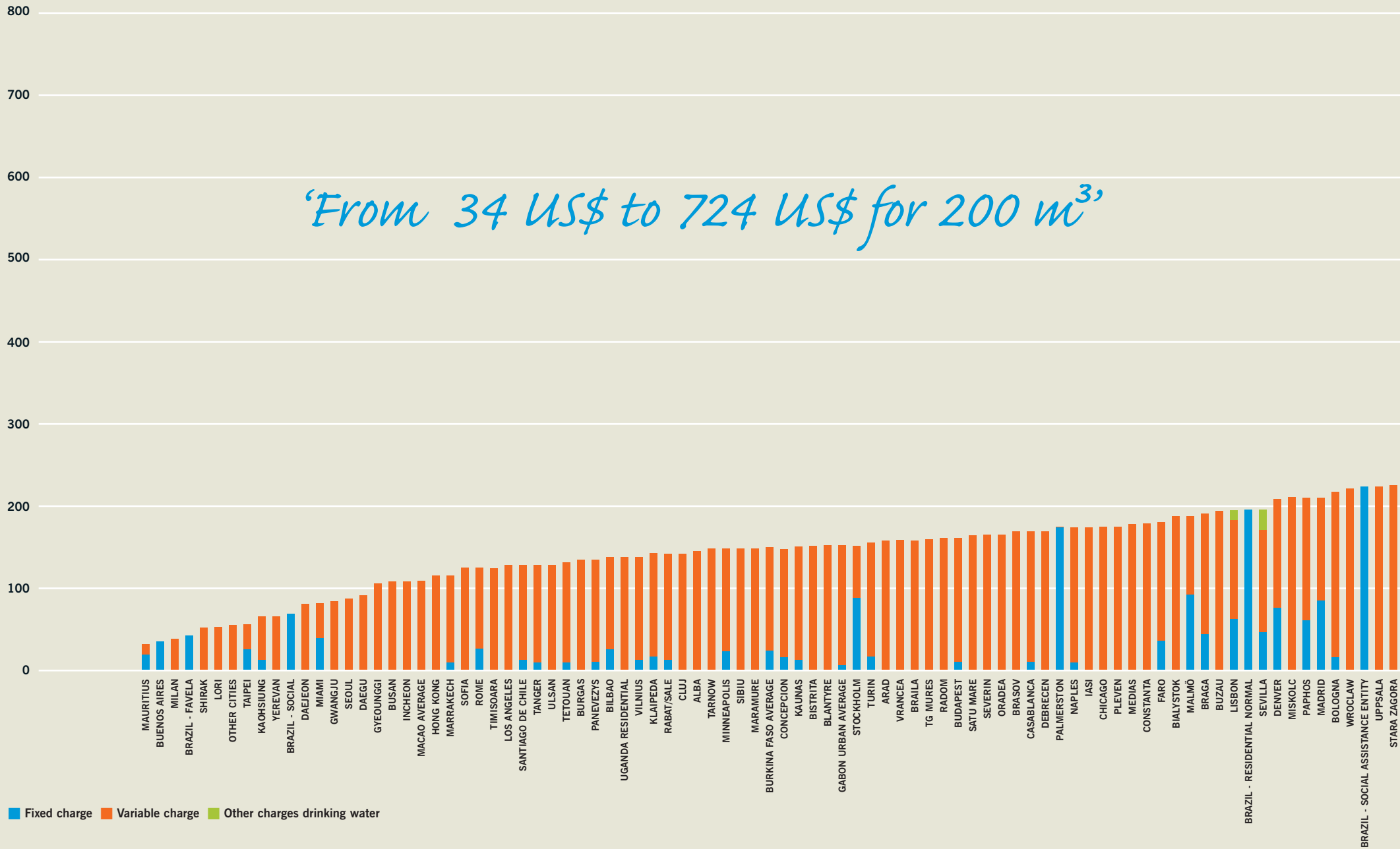
7 Sewerage fee is designed by the multiply the factors to drinking water fee.

8 For all areas customers will be on either unmetered or metered charges. Both have a fixed charge and a variable charge. The variable charge for unmetered bills is based on the rateable value of the property. The variable charge for metered bills is based on the amount of water used. Metered customers cannot choose to move to an unmetered charge but unmetered customers can move to a metered charge. If an unmetered customer moved to a metered charge they can choose to return to an unmetered charge within 12 months.

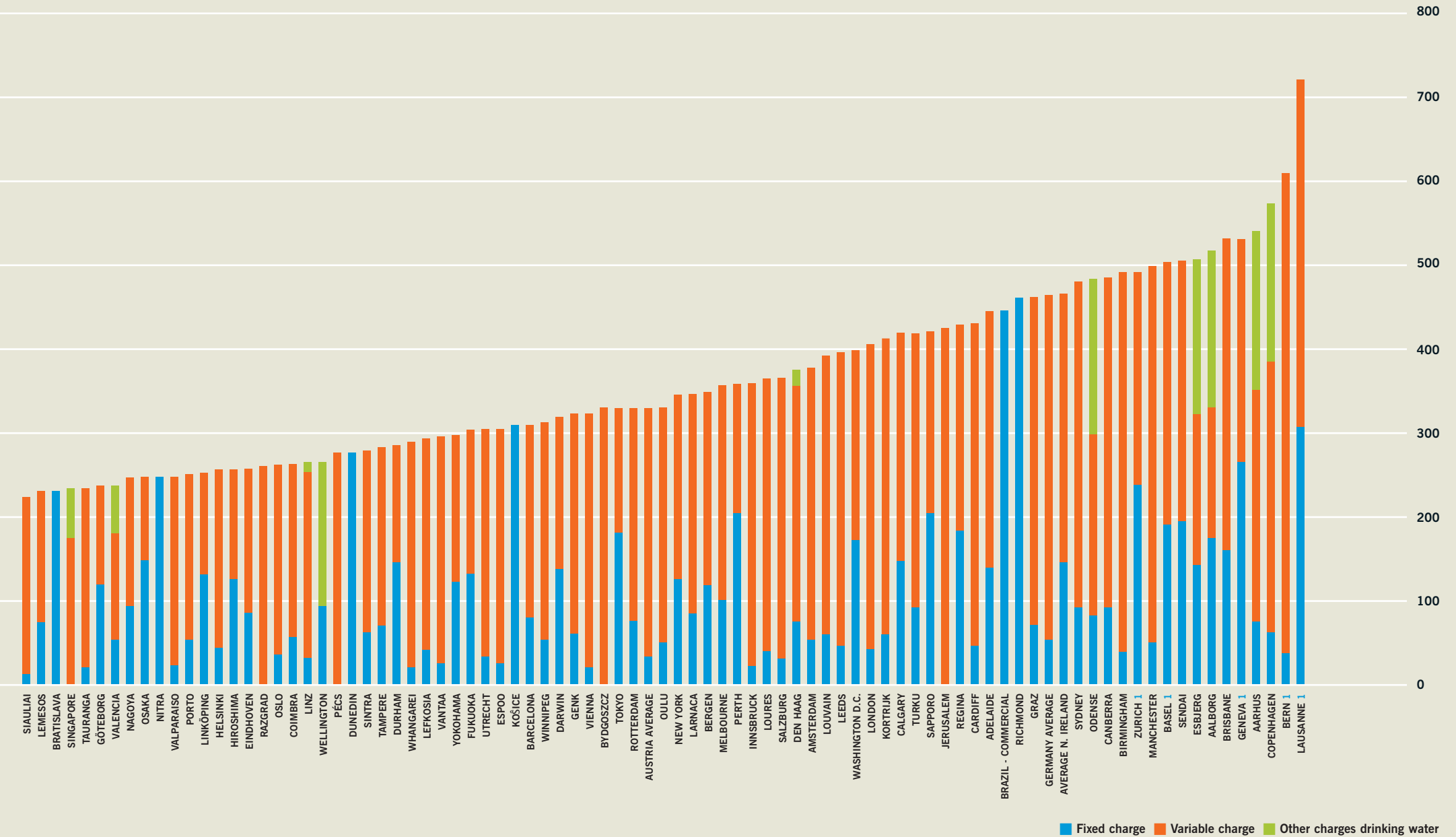
9 With the exception of NY, each city has separate rates. In New York, the charge for sewer is 1,59X the water charge.

10 L.A. has a seasonal rate (higher rates in the summer).

Total charge drinking water for 180 cities in 2011  
for a consumption of 200 m<sup>3</sup> in US\$

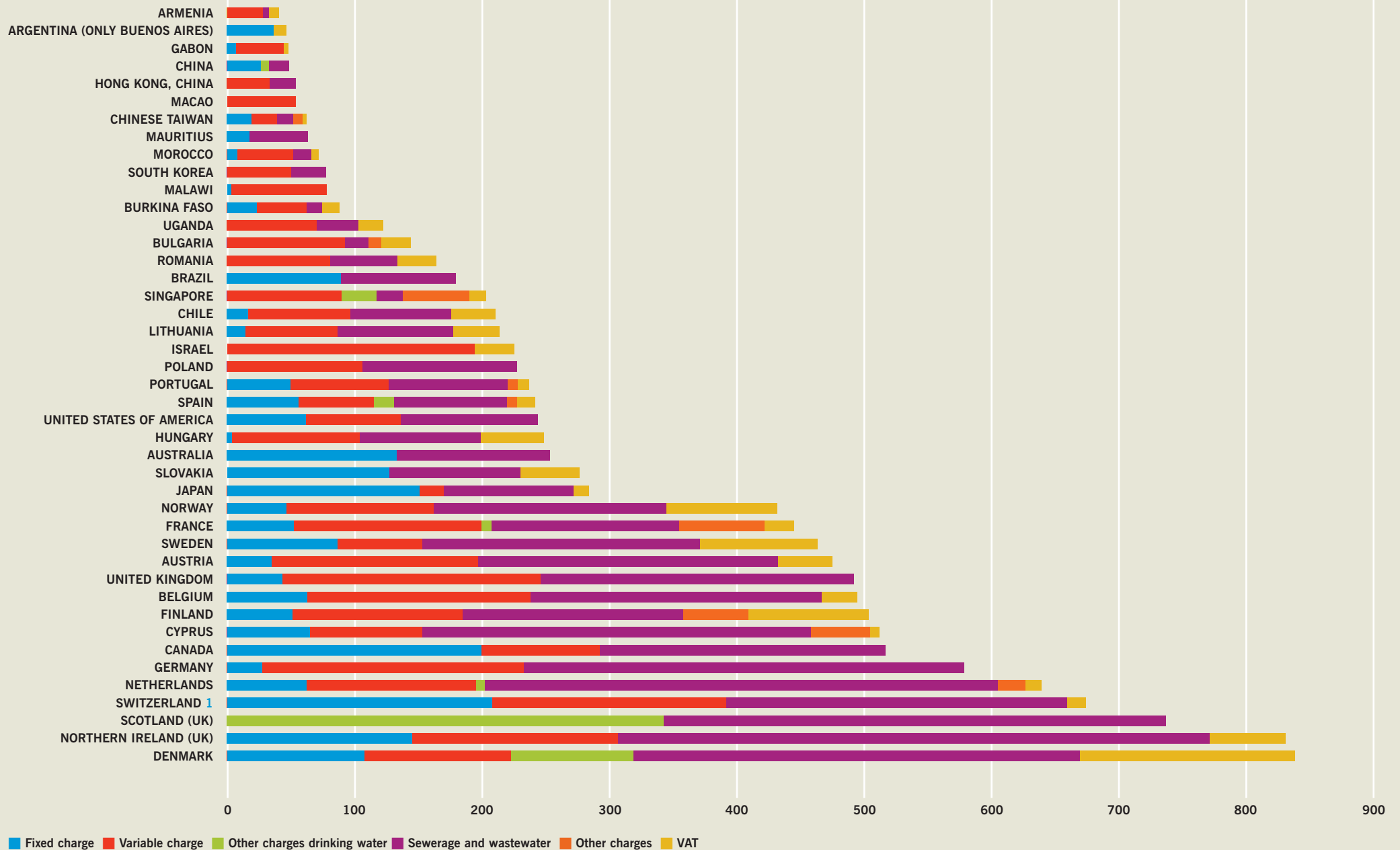


## Total charge drinking water for 180 cities in 2011 for a consumption of 200 m<sup>3</sup> in US\$



1 Switzerland: average for one-family-houses is displayed in the graph, the charges for flats (in blocks) are quite a bit lower.

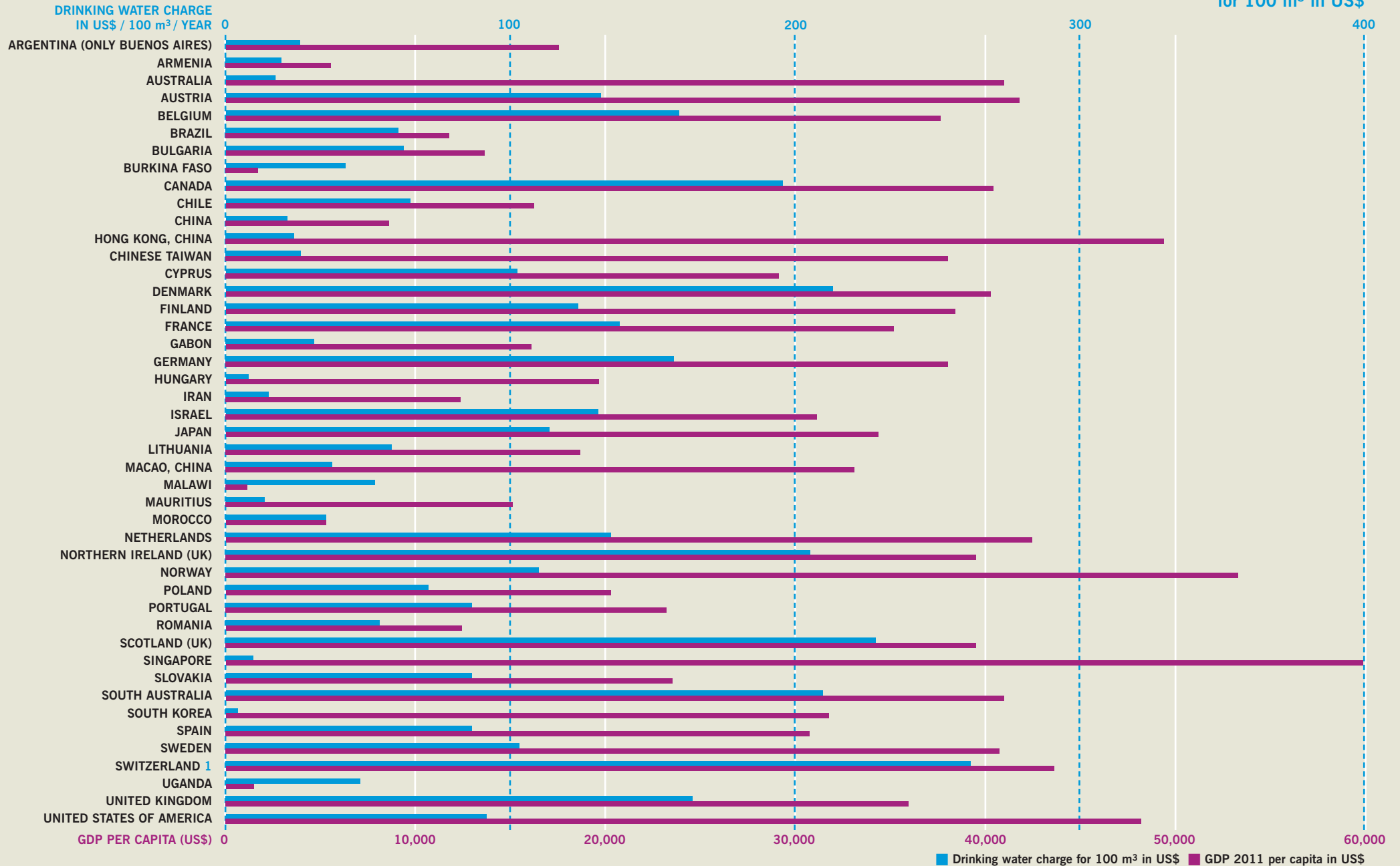
## Average annual water cycle charges in 2011 for a consumption of 100 m<sup>3</sup>\* in US\$



\* Average volume of considered main cities in the country/region

1 Switzerland: average for one-family-houses is displayed in the graph, the charges for flats (in blocks) are quite a bit lower.

## GDP - Drinking water charge in 2011\* for 100 m<sup>3</sup> in US\$



\* Average volume of considered main cities in the country/region  
 1 Switzerland: average for one-family-houses is displayed in the graph, the charges for flats (in blocks) are quite a bit lower.

## Specific water consumption in 2010 in litres/capita/day

COUNTRY/REGION	ACTUAL CONSUMPTION			AVERAGE CONSUMPTION	
	TOWN/CITY	HOUSEHOLD AND SMALL BUSINESS	TOTAL	HOUSEHOLD AND SMALL BUSINESS	TOTAL
<b>ARGENTINA</b>	Buenos Aires	375	375	375	375
<b>AUSTRALIA</b>	Brisbane	80	80	224	224
	Adelaide	215	217		
	Melbourne	148	148		
	Perth	287	287		
	Sydney	200	200		
	Canberra	211	211		
	Hobart	n/a	n/a		
	Darwin	425	425		
<b>AUSTRIA</b>	Graz	n/a	162	135	202
	Innsbruck	121	185		
	Linz	n/a	270		
	Salzburg	n/a	201		
	Vienna	148	193		
<b>BELGIUM</b>	Louvain	101	101	109	109
	Antwerp	155	155		
	Brussels	115	115		
	Liège	92	92		
	Kortrijk	102	102		
	Genk	106	106		
	Ghent	89	89		
<b>BRAZIL</b>	Sao Paulo State (SABESP)	178	n/a	149	n/a
	Country average	149	n/a		
	Brasilia Federal	172	n/a		
<b>BULGARIA</b>	Sofia	140	148	98	273
	Burgas	111	355		
	Pleven	94	312		
	Razgrad	66	309		
	Stara Zagora	77	238		
<b>BURKINA FASO</b>	Country average	45	45	45	45
<b>CANADA</b>	Calgary	198	333	195	311
	Winnipeg	149	253		
	Regina	185	272		
	Richmond	240	518		
	Durham	201	177		
<b>CHILE</b>	Country average	182	n/a	182	n/a
<b>CHINA</b>	Beijing	150	179	194	366
	Shanghai	199	458		
	Tianjin	90	261		
	Shenzhen	314	425		
	Guangzhou	219	505		
<b>HONG KONG, CHINA</b>	Hong Kong	221	345	221	345
<b>CHINESE TAIWAN</b>	Taipei	346	484	316	543
	Kaohsiung	285	601		
<b>CYPRUS</b>	Larnaca	128	157	146	183
	Lefkosia	152	170		
	Lemesos	154	179		
	Paphos	151	226		

COUNTRY/REGION	ACTUAL CONSUMPTION			AVERAGE CONSUMPTION	
	TOWN/CITY	HOUSEHOLD AND SMALL BUSINESS	TOTAL	HOUSEHOLD AND SMALL BUSINESS	TOTAL
<b>DENMARK</b>	Aalborg	114	167	111	188
	Aarhus	107	146		
	Copenhagen	107	250		
	Esbjerg	114	208		
	Odense	111	170		
<b>FINLAND</b>	Espoo	158	192	145	192
	Helsinki	158	192		
	Oulu	118	169		
	Tampere	140	207		
	Turku	137	197		
	Vantaa	158	192		
<b>GABON</b>	Urban average	143	143	143	143
<b>GERMANY</b>	Country average	121	150	121	150
<b>HUNGARY</b>	Budapest	147	213	106	151
	Debrecen	108	151		
	Miskolc	82	118		
	Pécs	85	123		
<b>ISRAEL</b>	Jerusalem	163	165	163	165
<b>ITALY</b>	Bologna	147	215	236	300
	Milan	464	416		
	Naples	167	262		
	Rome	214	378		
	Turin	190	226		
<b>JAPAN</b>	Nagoya	223	311	224	311
	Osaka	253	426		
	Hiroshima	223	299		
	Fukuoka	203	265		
	Sapporo	205	259		
	Sendai	221	309		
	Tokyo	231	323		
	Yokohama	234	296		
<b>LITHUANIA</b>	Kaunas	82	119	75	117
	Klaipeda	83	136		
	Panevezys	67	119		
	Siauliai	61	84		
	Vilnius	80	128		
<b>MACAO, CHINA</b>	Country average	154	358	154	358
<b>MALAWI</b>	Blantyre	75	67	75	67
<b>MAURITIUS</b>	Mauritius	166	223	166	223
<b>MOROCCO</b>	Casablanca	95	95	109	109
	Rabat/Sale	104	104		
	Tanger	115	115		
	Tetouan	99	99		
	Marrakech	130	130		
<b>NETHERLANDS</b>	Amsterdam	139	139	121	151
	Eindhoven	125	161		
	Maastricht	100	153		

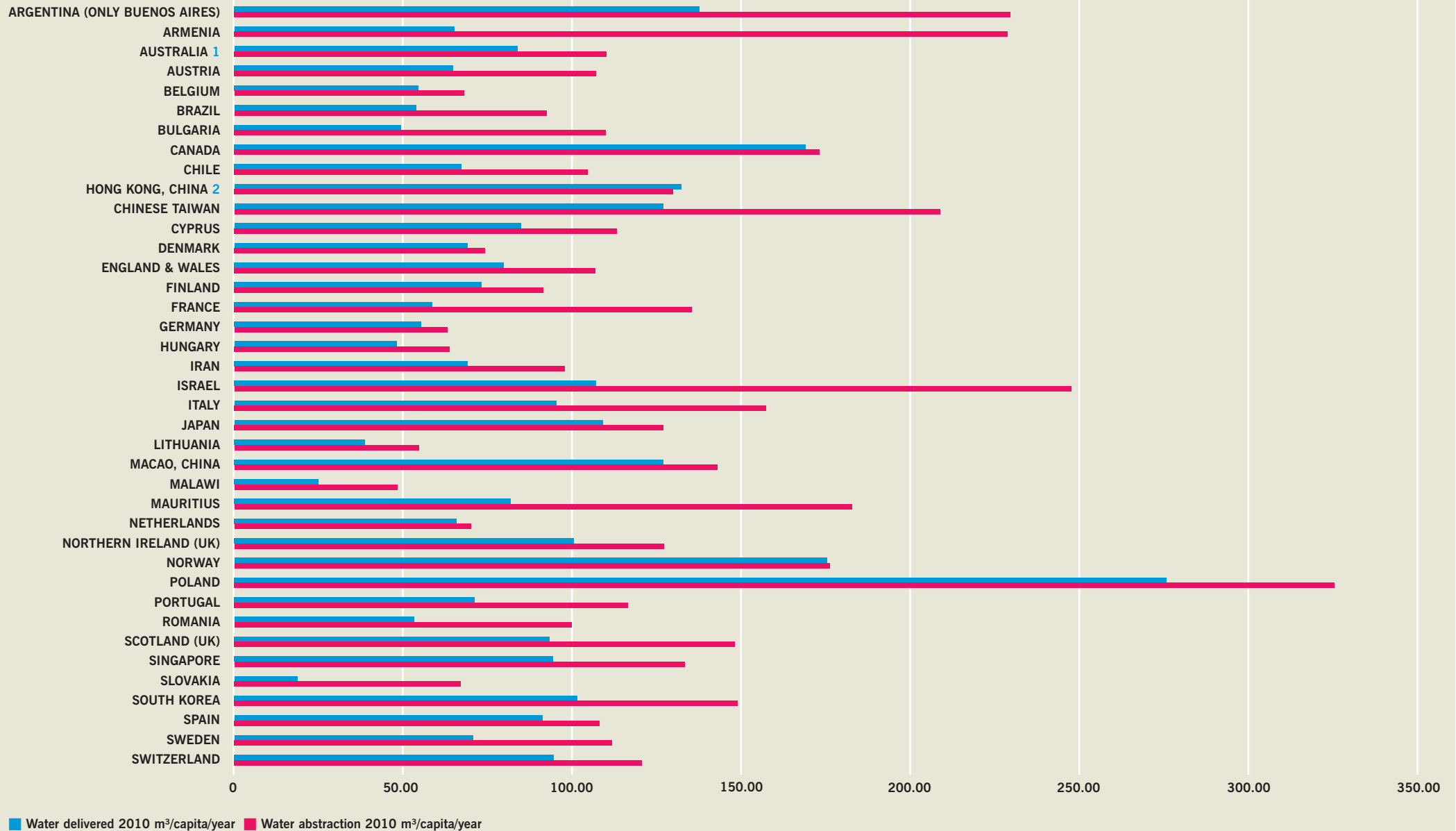


## Specific water consumption in 2010 in litres/capita/day

COUNTRY/REGION	ACTUAL CONSUMPTION			AVERAGE CONSUMPTION	
	TOWN/CITY	HOUSEHOLD AND SMALL BUSINESS	TOTAL	HOUSEHOLD AND SMALL BUSINESS	TOTAL
NEW ZEALAND	Wellington	230	411	228	370
	Dunedin	228	386		
	Palmerston	231	359		
	Tauranga	270	294		
	Whangarei	179	398		
NORWAY	Bergen	150	428	165	370
	Oslo	180	313		
POLAND	Bydgoszcz	100	200	101	252
	Wroclaw	117	379		
	Radom	99	135		
	Bialystok	93	140		
PORTUGAL	Tarnow	98	408		
	Lisbon	127	348	85	232
	Sintra	90	247		
	Porto	67	184		
	Loures	90	247		
ROMANIA	Braga	61	168		
	Coimbra	74	202		
	Faro	84	231		
	Cluj	102	165	101	150
	Iasi	115	189		
	Oradea	118	162		
	Brasov	99	139		
	Timisoara	110	161		
	Braila	77	114		
	Sibiu	121	159		
SCOTLAND (UK)	Constanta	118	179		
	Arad	102	142		
	Bistrita	100	155		
	Buzau	87	122		
	Tg Mures	89	148		
	Satu Mare	83	117		
	Vrancea	100	128		
	Alba	103	198		
	Maramure	91	154		
	Severin	109	136		
	Medias	97	132		
	Scotland Band A	154	178	154	178
	Scotland Band B	154	178		
	Scotland Band C	154	178		
	Scotland Band D	154	178		
Scotland Band E	154	178			
Scotland Band F	154	178			
Scotland Band G	154	178			
Scotland Band H	154	178			

COUNTRY/REGION	ACTUAL CONSUMPTION			AVERAGE CONSUMPTION	
	TOWN/CITY	HOUSEHOLD AND SMALL BUSINESS	TOTAL	HOUSEHOLD AND SMALL BUSINESS	TOTAL
SINGAPORE	Singapore	154	257	154	257
SLOVAKIA	Bratislava	98	n/a	94	n/a
	Nitra	89	n/a		
	Košice	94	n/a		
SOUTH KOREA	Seoul	285	285	271	271
	Busan	254	254		
	Daegu	270	270		
	Incheon	301	301		
	Gwangju	263	263		
	Daejeon	273	273		
SPAIN	Ulsan	251	251		
	Gyeonggi	274	274		
	Barcelona	107	158	114	169
	Bilbao	109	187		
	Madrid	124	177		
	Sevilla	122	173		
SWEDEN	Valencia	107	151		
	Stockholm	186	186	219	219
	Göteborg	235	235		
	Malmö	221	221		
SWITZERLAND	Uppsala	210	210		
	Linköping	242	242		
	Geneva	200	383	192	341
	Zurich	165	326		
	Lausanne	200	344		
	Basel	211	363		
UNITED KINGDOM	Bern	182	287		
	Birmingham	126	n/a	143	n/a
	Cardiff	150	n/a		
	London	163	n/a		
	Manchester	134	n/a		
UNITED STATES OF AMERICA	Leeds	142	n/a		
	New York	138	378	138	378
	Washington D.C.	51	139		
	Los Angeles	151	414		
	Chicago	n/a	n/a		
	Denver	198	543		
	Miami	145	398		
Minneapolis	144	395			

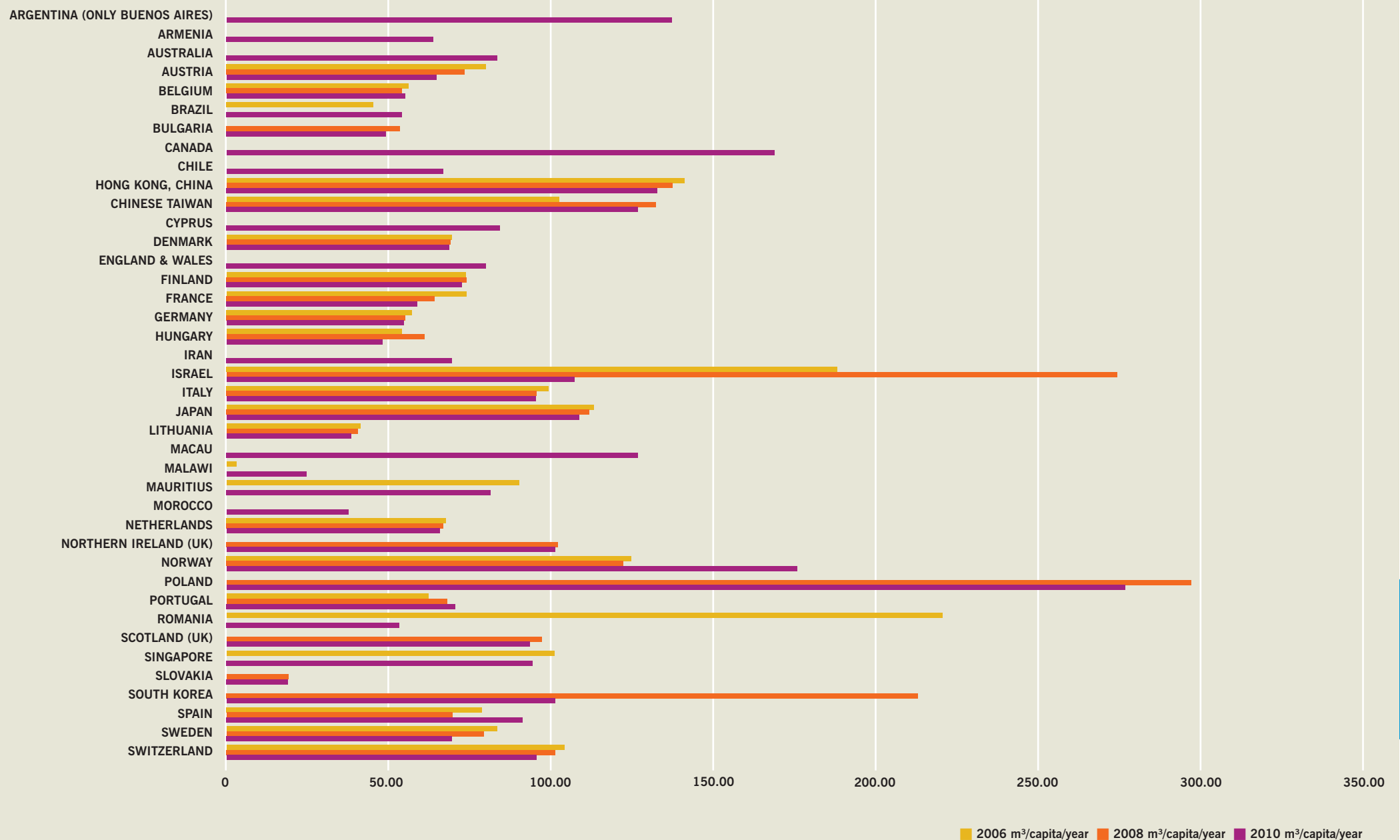
## Water abstraction - water delivered in 2010 in m<sup>3</sup>/capita/year



1 AUSTRALIA: explanation for difference between consumption and abstraction: consumption figures include water drawn from storage areas containing water collected in previous years (reservoirs etc). There was also a serious drought period, therefore Australian water supplies were heavily drawn upon whilst less water was removed from the environment.

2 HONG KONG, CHINA: the water resources are basically from rainfall and Dongjijiang Water (Import from China). Making use of impounding reservoirs to store the raw water as reserve from these two sources to cater for the fluctuating demand. Whenever the water demand exceeds Water Abstraction in a particular year, the water stored as reserve in previous years would be used to meet the demand. As no recycled water was used as fresh water supply in Hong Kong, this means some reserves were used in 2010. This resulted in the total volume of Annual Water Consumption greater than that of Total Water Abstraction in 2010.

Total water delivered in m<sup>3</sup>/capita/year \*  
total delivery/population X supply rate



\* Total water delivered: annual volume of water consumption by households for domestic consumption. This also includes mixed/commercial properties and multiple household properties, e.g. blocks or flats with an annual volume below 10 000 m<sup>3</sup> and the annual volume of water consumption by industry. If not clearly or unequivocally identified, consider consumptions higher than 10 000 m<sup>3</sup>.

# Water Regulation

RESPONSIBILITIES:	ARGENTINA (ONLY BUENOS AIRES)	ARMENIA	AUSTRALIA	AUSTRIA	BELGIUM	BRAZIL	BULGARIA	BURKINA FASO	CANADA	CHILE	CHINA	HONG KONG, CHINA	CHINESE TAIWAN	CYPRUS	DENMARK	ENGLAND & WALES	FRANCE	FINLAND	GABON	GERMANY	
<b>Who is responsible for:</b>																					
organizing the water services	S	M, S	S (45)	M	RG, M	RG, M	M, S	S	RG, M	S (31)	RG	RG	S	RG, M, S	M (16)	(18)	M	M	S	M	
pricessetting of water services	S	M, S	S (46)	M	RG, M, S (1)	RG, M (21)	S	S	M		RG	RG	S	RG, M, S	M, S, WS	(19)	M	M	S	M	
new investments and the way to finance them	S	WS, S	WS (47)	WS	WS, RWH (2)	WS, RWH	WS, RWH	S	WS	WS (31)	WS, RWH, S	WS	WS	WS, RWH, S	WS	WS	RWH	WS	WS, S	WS	
<b>Responsibilities which can be transferred to private operators:Can they yes/no?</b>																					
water service operation	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
customer relation management	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	
electromechanical equipment renewal	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
existing infrastructure renewal	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
main infrastructure extension	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
research and development	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
others, please specify	-	-	(48)	-	-	(22)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Responsibilities which can be transferred to private operators:Do they exist yes/no?</b>																					
water service operation	No	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
customer relation management	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	
electromechanical equipment renewal	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
existing infrastructure renewal	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
main infrastructure extension	No	Yes	Yes	Yes	Yes	Yes	Yes	No	-	-	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
research and development	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	
others, please specify	-	-	(48)	-	-	(22)	-	-	-	-	-	-	-	-	-	-	-	-	-	(42)	
<b>What are the principles for waterpricing?</b>																					
cost covering principles	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	
inflation rate growth	No	Yes	Yes	Yes	n/a	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	No	Yes	No	
annual price limits	No	No	Yes (49)	No	n/a	-	Yes	No	No	-	Yes	Yes	No	Yes	Yes	Yes	No	No	No	(43)	
general principle of price cap	No	No	Yes (50)	No	n/a	-	No	-	Yes	Yes	No	Yes	No	No	Yes	No	No	No	No	No	
others, please specify	(53)	-	-	-	-	(23)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>ACCESS TO WATER AND SANITATION FOR NON CONNECTED PEOPLE</b>																					
<b>They have portable water from:</b>																					
public taps or fountains	Yes	Yes	Yes	No	Yes (3)	Yes	Yes	Yes	Yes	Yes	No	Yes	No	-	-	No	Yes	No	Yes	No	
private wells or springs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	-	-	Yes	Yes	Yes	Yes	Yes	
<b>They have sanitation:</b>																					
decentralized treatment	-	No	Yes	Yes	Yes	-	No	Yes	Yes	Yes	Yes	No	No	-	-	Yes	Yes	Yes	Yes	Yes	
others, please specify	Yes (26)	-	(51)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Yes (44)	
<b>Solidarity mechanism to facilitate to water and sanitation: they are funded by?</b>																					
customers of the watercompanies	Yes	Yes	-	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	-	-	-	Yes	No	Yes	Yes	
local/national tax payers	Yes	No	Yes	No	Yes	-	No	No	Yes	Yes	Yes	Yes	No	-	-	-	Yes	Yes	No	No	
others, please specify (for example international solidarity)	-	-	(52)	-	-	(24)	(27)	-	-	-	-	-	-	-	-	-	-	-	-	-	

## Water Regulation Appendice:

- Water supply companies establish their tariffs and submit them for approval.
- Sewers: municipalities.
- Only few public fountains.
- Own septic tank (often for agricultural use).
- Grants from government for the expansion of water service. Reduction of water charges for low income person.
- Responsibilities have been split up: limited liability drinking water companies with public shareholders for water supply, municipalities for sewerage and public water authorities (Water Boards) for waste water treatment.
- Different per service: water supply, sewerage, waste water treatment.
- Not applicable: in the Netherlands 100% acces = 100% connected.
- Collected sewage in private estate and transported by subcontractor.
- EU funds.
- Only in Bucharest and Ploiesti.
- Only in Bucharest and Ploiesti.
- Investment project on SOP.
- Tariff policy paper (e.g. for 5 years within investment program supported by EU and cofinanced by local actors).
- Depend on the area (in some cases there are available public taps, in most of the cases there is no public network, only wells).

16 All water services are converted into private companies in 2010, but the old municipalities water services are still owned by the municipality.

17 On site treatment, septic tank or biological treatment.

18 Privately owned companies hold licenses to provide water services in a regulated environment.

19 The economic regulator (Ofwat) sets price limits (limits on the amount by which companies are allowed to vary their charges to customers).

20 The physical connection to the public water supply or public sewer is funded by the developer (or self-lay organization), while the new customer pays an "infrastructure charge" to fund local reinforcement of the public system and the general customer.

21 Regulators are already existing in many states and municipalities. The services in Sao Paulo State and in the Federal District of Brasilia are already regulated and tariffs are established by the Regulator.

22 Currently about 7% of the Brazilian population is served in water and sanitation by Private Operators, which started operating in 1995.

23 The Regional Operators are in charge of the water services for 75% of the Brazilian population, with 20% of the Brazilian population served by Municipal Operators and 5% by Private Operators. In many cases tariffs are already established by regulators.

24 In the 26 Regional Operators which serve approximately 75% of the population there are crossed subsidies, between municipalities and also inside each municipality, which are called social tariffs.

25 Part of the supply to agriculture is provided by regional cooperatives. Small quantities by private well owners. Work is often done by private operators, responsibility of utilities owned by municipalities.

26 Septic tanks.

27 European funds.

28 NI Water can outsource services but as the sole water and sewerage undertaker in NI it cannot transfer responsibility for the provisions of water and sewerage services.

29 Septic tanks, private treatment facilities and cesspools.

30 Connections for new and existing non-connected properties (for both water and sewerage) and septic tank desludging services are subsidized.

31 Price setting and investment between water companies and regulator.

32 "Interior" ministry and concession contracts.

33 Septic tanks.

34 The water supply and drinking water are strictly operated by the regional governments and a public company, K-Water as from 2010. Thus, water supply is controlled by both regional government and a public company. However, parts of

HUNGARY	IRAN	ISRAEL	ITALY	JAPAN	LITHUANIA	MACAO, CHINA	MALAWI	MAURITIUS	MOROCCO	NETHERLANDS	NORTHERN IRELAND	NORWAY	POLAND	PORTUGAL	ROMANIA	SCOTLAND	SINGAPORE	SLOVAKIA	SOUTH KOREA	SPAIN	SWEDEN	SWITZERLAND	UGANDA	UNITED STATES OF AMERICA	
M	RG	S	M	RG, M	M	M	S	S	M, S	WC (6)	RG	M	RG, M	M, S (40)	M	S	RG	M	RG, S	M	M	M	S	M	
M	RG	S	M	RG, M	M	M	S	S	M, S	RG, M	RG	M	RG, M	M, S (40)	M, S	S	RG	M, S	RG	RG, M	M	M	S	M	
WS	RWH	WS, S	WS, S	WS	RWH, S	WS, M	S	S	WS (32)	WS	S	WS	WS, RWH, S	WS, RWH, S (40)	WS, S	S	WS	WS	WS	WS, RWH, S	WS	WS	S	WS	
Yes	Yes	Yes (25)	Yes	Yes	No	Yes	Yes	No	Yes	n/a	No	No	Yes	Yes	Yes (11)	No	No	Yes	Yes	Yes	No	Yes	No	Yes (38)	
Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	n/a	No	No	Yes	Yes	Yes (12)	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	n/a	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
No	Yes	n/a	Yes	No	Yes	Yes	Yes	Yes	Yes	n/a	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	n/a	No	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	
No	Yes	n/a	Yes	No	Yes	Yes	Yes	Yes	-	n/a	No	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	
-	-	-	-	-	-	-	-	-	-	-	(28)	-	-	-	-	-	-	-	(34)	-	(37)	-	-	-	
(7)																									
Yes	No	No	Yes	Yes	No	Yes	No	No	Yes	n/a	n/a	No	Yes	Yes	Yes (11)	No	Yes	Yes	Yes	Yes	No	Yes	No	Yes (38)	
Yes	Yes	No	Yes	Yes	No	Yes	No	Yes	Yes	n/a	n/a	No	Yes	Yes	Yes (12)	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	
Yes	Yes	n/a	Yes	No	Yes	Yes	Yes	Yes	Yes	n/a	n/a	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	
No	No	n/a	Yes	No	Yes	Yes	Yes	Yes	Yes	n/a	n/a	Yes	Yes	Yes	Yes (13)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	n/a	n/a	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	
No	Yes	n/a	Yes	No	Yes	Yes	No	No	-	n/a	n/a	No	No	Yes	No	Yes	Yes	Yes	No	Yes	No	No	No	Yes	
-	-	-	-	-	-	-	-	-	-	-	(28)	-	-	-	-	-	-	-	(34)	-	(37)	-	-	-	
(7)																									
Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	n/a	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	
Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	-	n/a	Yes	No	Yes	Yes	Yes	No	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
No	Yes	No	Yes	No	No	Yes	Yes	No	-	n/a	Yes	No	No	Yes	n/a	Yes	No	No	No	No	No	No	No	No	
No	Yes	No	Yes	No	No	Yes	No	No	-	n/a	Yes	No	No	Yes	n/a	Yes	No	No	No	No	Yes	No	No	No	
-	-	-	-	-	-	-	-	-	-	-	(14)	-	-	-	-	-	-	-	(35)	-	-	-	-	-	
(7)																									
Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	-	(8)	No	No	Yes	Yes	(15)	Yes	No	No	Yes	-	No	No	Yes	No	
Yes	No	Yes	Yes	Yes	Yes	No	Yes	-	-	(8)	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	-	Yes	Yes	Yes	Yes	
Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	Yes	Yes	Yes	Yes	
Yes (9)	-	Yes (26)	-	-	-	-	-	-	-	-	Yes (29)	No	-	Yes (41)	-	-	-	-	-	-	-	-	Yes (4)	Yes (33)	Yes (39)
No	No	Yes	No	No	Yes	Yes	Yes	No	-	-	No	Yes	No	Yes	No	No	Yes	Yes	No	Yes	No	No	Yes	Yes	
Yes	Yes	No	No	No	Yes	Yes	Yes	No	-	-	Yes	No	Yes	Yes	No	Yes	Yes	-	-	-	-	Yes	No	No	
-	-	-	-	(5)	(10)	-	-	-	-	-	(30)	-	-	-	-	-	-	-	-	(36)	-	-	-	-	

sewer and sewerage treatment plants are operated by private companies, although major plants and sewer systems are still controlled by the regional governments and public companies in Korea. They are mainly responsible for construction of infrastructures. Thus, responsibilities for water service is both public (water) and private (sewerage).

**35** Water and sewage pricing in Korea is not based on the actual cost, in 2010 fiscal year. The water fee covers less than 80% of the operating cost, while sewage fee covers less than 40% of operating cost. The 'operating cost' does not include capital and amortization cost. The subsidies from central government (for sewage sector) and local government (for drinking water sector) covers the deficits.

**36** In general, most of Korean citizens are connected to public water supply and sanitation system. The private sewage treatment (septic tank, etc) are installed in remote areas which does not have public sewers. KOICA and NGO's provide foreign support to under-developed countries.

**37** Private operators can not own the infrastructure and can not be responsible for service, but they can work as an entrepreneur for the public service after an order is given.

**38** In general, not very common in the US. Most common is to have water treatment operation handled by a private operator.

**39** Septic systems.

**40** Regulator.

**41** Septic tanks.

**42** Management of surface waters, resource protection.

**43** Yes for municipalities and no for private.

**44** Without drainage pits, septic tanks.

**45** Water is generally a state based responsibility, but service delivery arrangements differ across jurisdictions.

**46** Larger utilities have some autonomy in price-setting, but are subject to Administrative Tribunals with ultimate decision-making power.

**47** Water utilities use standard methods for providing funding for new activities/infrastructure (retained earnings, borrowing funds and public wealth etc.).

**48** Use of public/private partnerships increasingly common in the Australian water sector.

**49** Multiple year pricing arrangements may be introduced by some states.

**50** Often applied.

**51** Onsite treatment in regional and remote areas of Australia are common.

**52** AUSAID is a taxpayer funded government body which supports international aid activities.

**53** In 2002 tariff revisions are suspended and therefore there was no tariff increase since then. In 2006 the National Government nationalized the company and started to subsidize it.

## Responsibilities Key:

- G:** Government
- M:** Municipalities
- ME:** Municipalities enterprises
- O:** Operators
- O/WC:** Owners/water companies
- RA:** Regional Agency
- RG:** Regional governments
- RM:** Regulation ministry
- RWH:** Regional water holdings
- S:** State
- SH:** Shareholders
- WC:** Water companies
- WS:** Water services

## Explanation notes for International Statistics for Water Services – Busan 2012

### Explanation notes for graphs and tables concerning abstraction

1. **AUSTRALIA** Other sources in 2010: desalination and recycled water.
2. **BRAZIL** Figures for 2009.
3. **BURKINA FASO** Only for urban areas.
4. **HONG KONG, CHINA**
  - a. In Hong Kong the water resources are basically from rainfall and Dongjijang Water (Import from China). We use impounding reservoirs to store the raw water as reserve from these two sources to cater for the fluctuating demand. Whenever the water demand exceeds water abstraction in a particular year, the water stored as reserve in previous years can be used to meet the demand. As no recycled water was used as fresh water supply in Hong Kong, this means some reserves were used in 2010. This resulted in the total volume of Annual Water Consumption greater than that of Total Water Abstraction in 2010.
  - b. Other sources in 2008: importation.
5. **CYPRUS**
  - a. Spring water in 2010 included in ground water.
  - b. Other sources in 2010: desalination.
6. **GABON**
  - a. Only for urban areas.
  - b. Total 2010 is total water production and not total water abstraction.
7. **ISRAEL**
  - a. Other sources in 2008: recycled and brackish water.
  - b. Other sources in 2010: recycled water.
8. **JAPAN** Other sources in 2010: desalination.
9. **NETHERLANDS** Other sources in 2008: river-ground water.
10. **POLAND** Other sources in 2008: drainage water from mines and buildings.
11. **SINGAPORE** Other sources in 2010: desalination.
12. **SPAIN** Other sources in 2010: desalination.
13. **SWEDEN**
  - a. Other sources in 2008: artificial infiltration.
  - b. Other sources in 2010: artificial groundwater by infiltrated surface water.
14. **UGANDA** Only for urban areas.
15. **UNITED STATES OF AMERICA** Other sources in 2010: purchased from other utilities (no data on source).

### Explanation notes for graphs and tables concerning water delivered, population and connection rates

1. **BRAZIL** Figures for 2009.
2. **BURKINA FASO** Only for urban areas.
3. **CHINA**
  - a. In China there are 6 categories, such as government owned affiliation water consumption, business (e.g. restaurant, car washing, office), special organization (e.g. military), and other consumption.
  - b. Population in 2010: only data for urban area in China. The data of rural and sub-urban is unavailable.
4. **GABON**
  - a. Only for urban areas.
  - b. Sewerage connection rate in 2010: no public service (only some storm water mains managed by municipalities).
5. **MOROCCO** Population in 2010: total country urban population: as in most developing or emerging countries, the service is completely different in urban and rural areas.  
In urban areas, more than 96% of the population is connected to networks and services, almost at the European quality level, while about 90% of rural population uses public standpipes.
6. **SINGAPORE** Domestic water consumption in 2010.
7. **SWITZERLAND** Population in 2006, 2008 and 2010 includes Liechtenstein.
8. **UGANDA** Only for urban areas.

### Explanation notes for graphs and tables concerning charges

**General note:** Average volume of considered main cities in the country.

1. **ARGENTINA**
  - a. Buenos Aires: the average bill for residential (domestic) users. Total annual water bill for 100 m<sup>3</sup> and 200 m<sup>3</sup> is the same because 88% of users are unmetered. This percentage is even bigger for residential users.
  - b. Water rate design for domestic use: 88% of users are unmetered (flat rate). Metered users pay a fixed charge (50% of flat rate for unmetered) plus a uniform rate for consumption over 20 m<sup>3</sup> each two months.
2. **CHILE** Water rate design for domestic use: 16% of clients receive 7% of operational revenue as direct subsidies from the state budget.
3. **CYPRUS** Other charges: drainage charge.
4. **DENMARK**
  - a. Waste water tax for discharging nutrients.
  - b. Fixed bill component and variable component for waste water treatment.

5. **LITHUANIA** Water rate design for domestic use: volumetric charge (based on water consumption)
6. **NORTHERN IRELAND** Water rate design for domestic use: all domestic usage, including a domestic allowance for non-domestic customers, is funded/subsidized via a block grant from the government.
7. **SINGAPORE**
  - a. Waste water treatment charge: water borne fee.
  - b. Other charges: sanitary appliance fee (assumed 2 fittings).
  - c. VAT & other taxes: goods and service taxes of 7%.
8. **SOUTH KOREA** Water rate design for domestic use: sewerage fee is designed by multiplying the factors to drinking water fee.
9. **SWITZERLAND** Average for one-family-houses is displayed in the graph, the charges for flats (in blocks) are quite a bit lower.
10. **UNITED KINGDOM** Water rate design for domestic use: For all areas customers will be on either unmetered or metered charges. Both have a fixed charge and a variable charge. The variable charge for unmetered bills is based on the rateable value of the property. The variable charge for metered bills is based on the amount of water used. Metered customers cannot choose to move to an unmetered charge but unmetered customers can move to a metered charge. If an unmetered customer moved to a metered charge they can choose to return to an unmetered charge within 12 months.
11. **UNITED STATES OF AMERICA**
  - a. Water rate design for domestic use: With the exception of NY, each city has separate rates. In New York, the charge for sewer is 1,59 x the water charge.
  - b. Water rate design for domestic use: L.A. has a seasonal rate (higher rates in the summer).

### Explanation notes for graphs and tables concerning consumption

1. **BURKINA FASO** For domestic consumption and standpipes.
2. **FINLAND**
  - a. Consumption in cities Espoo, Helsinki and Vantaa: total invoiced consumption of Helsinki Region Environmental Services Authority (operating in cities of Espoo, Kauniainen, Helsinki and Vantaa).
  - b. Consumption in city Tampere: data from 2009.
3. **SWITZERLAND** Total consumption: including industry, public services and water losses.

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