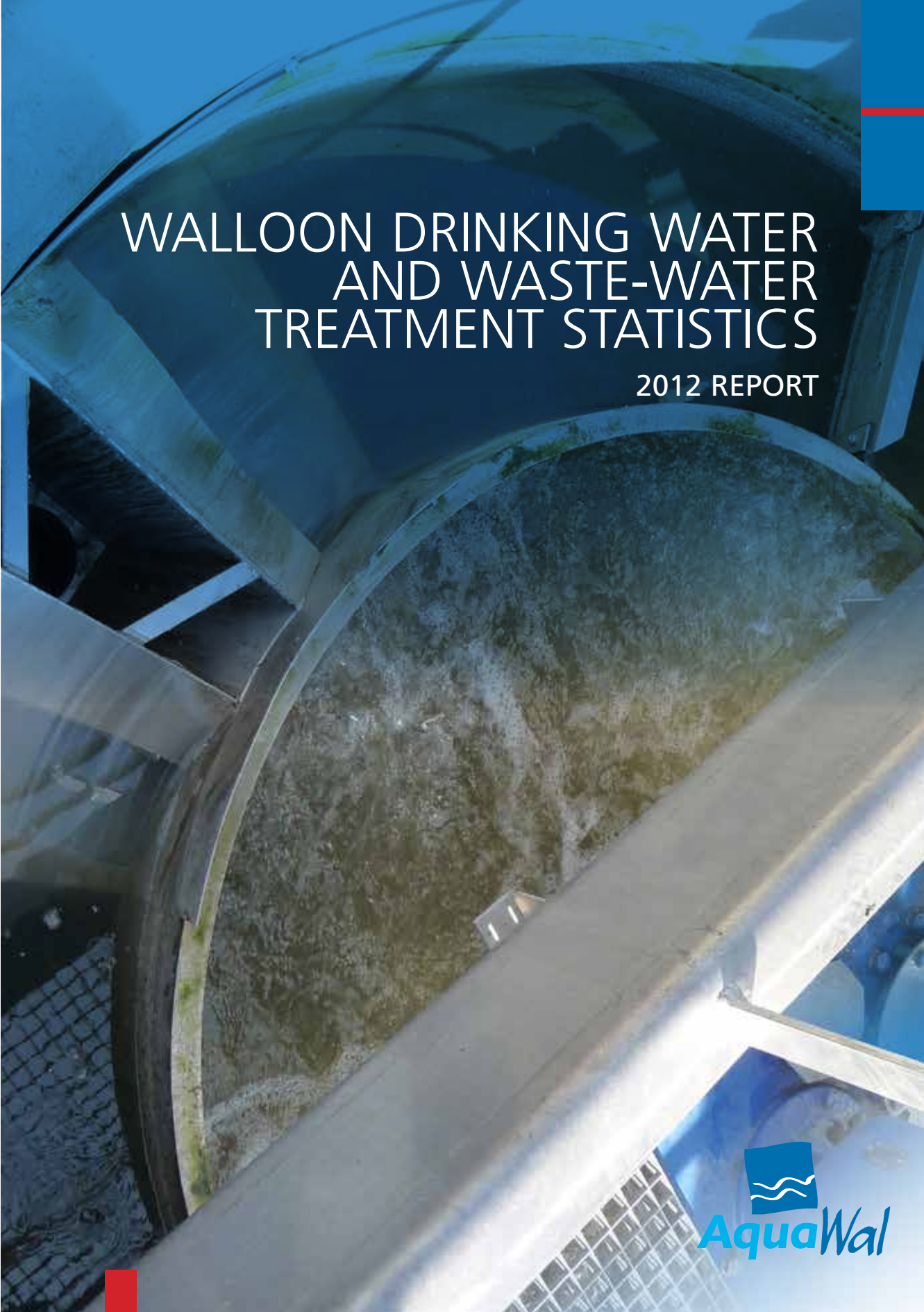

WALLOON DRINKING WATER AND WASTE-WATER TREATMENT STATISTICS

2012 REPORT

AquaWal

WALLOON DRINKING WATER AND WASTE-WATER TREATMENT STATISTIC

RAPPORT 2012

Cover photograph: Hamme-Mille waste-water treatment plant (IBW)

2011 in brief

- Water consumption per water meter fell by 0.8%.
- The network's efficiency improved by 2.9%.
- The volumes of abstracted water covered by a prevention area project increased by 7.2%.
- 17,000 lead service connections were replaced.
- 425 million EUR was invested: 250 million in waste-water treatment and 175 million in drinking water production and distribution.
- The price of water rose 3.7%, or at about the same rate as inflation (3.5%).
- The network of waste-water treatment plants increased by thirty units. Wallonia's WWTP coverage rate thus rose by 3%.
- 43,000 metric tons of waste-water treatment sludge was produced, recovered, and used.
- The number of households experiencing payment difficulties rose by 5.4%, whilst the number of Water Social Fund interventions fell by 10.9%.

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Introduction

The purpose of this report is to present the main figures and indicators pertaining to the anthropogenic water cycle in Wallonia. The data presented in this document come from Aquawal's partners, which account for about 95% of the water production-distribution sector and the entire waste-water treatment sector. The statistics are for the period ending on 31/12/2011, unless stipulated otherwise.

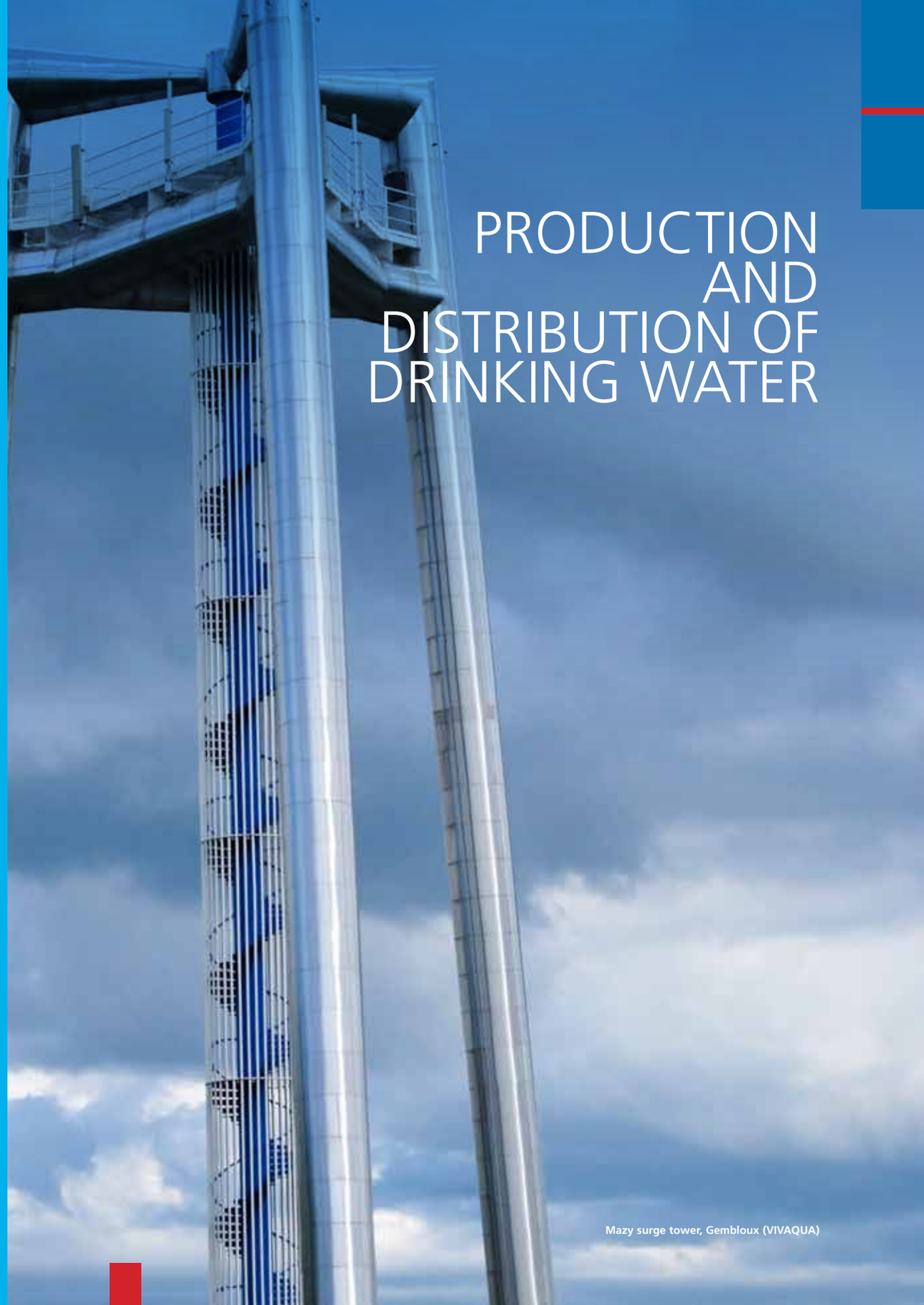
This report is not exhaustive. It does not cover in detail some of the aspects that are taken up in the reports published by other players in the sector, such as the state of the region's aquifers and piped water quality. It is intended to complement these other publications.

OVERVIEW OF THE SECTOR							
Production-distribution of drinking water	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Number of water producers	65	57	56	55	54	53	53
Number of water distributors	65	57	56	55	52	51	51
Total length of pipes, excluding service connections[3] (x 1,000 km)	38.2	38.2	38.2	38.2	38.2	39.0	39.2
Number of water meters (x 1,000)	1,405.0	1,428.7	1,450.5	1,471.6	1,490.5	1,508.7	1,528.4
Volume produced[2] (million m³)	384.9	395.2	384.0	382.5	*	387.7	385.1
Volume distributed (million m³)	163.6	163.0	163.4	161.8	160.2	161.0	161.5
Aquawal members - production-distribution	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Number of production-distribution partners	16	11	13	14	14	17	17
Total length of pipes[3,4] (x 1,000 km)	33.8	33.8	34.6	34.4	34.7	35.9	36.2
Number of water meters (x 1,000)	1,286.7	1,312.0	1,342.8	1,364.5	1,386.7	1,415.9	1,432.1
Volume produced[4] (million m³)	336.3	347.3	337.5	335.0	346.9	344.4	345.3
Volume distributed (million m³)	149.7	149.3	150.7	149.6	148.8	151.2	151.7
Waste-water treatment	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Number of approved treatment bodies	7	7	7	7	7	7	7
Number of waste-water treatment plants in service	336	343	350	358	368	373	403
Nominal capacity of WWTPs in service[5] (x 1,000 p.e.)	2,660	2,745	3,300	3,369	3,460	3,463	3,504
Total length of existing collectors (km)	1,353	1,409	1,436	1,577	1,626	1,704	1,746

Table 1. Overview of the water sector in Wallonia
*** Data not available**
Source : S.A. Aquawal

[1] http://environnement.wallonie.be (Wallonia's environment portal)
http://etat.environnement.wallonie.be (state of Wallonia's environment)
[2] Including VIVAQUA, VMW, and TMVW: operators from outside the region that produce water in Wallonia
[3] Some operators re-assessed the network's length in 2011 with a retroactive effect going back to 2008.
[4] Including VIVAQUA (in Wallonia only)
[5] The way of calculating nominal capacity was revised in 2011. It was standardised on the basis of a BOD_5 of 60 grams per day and per capita.

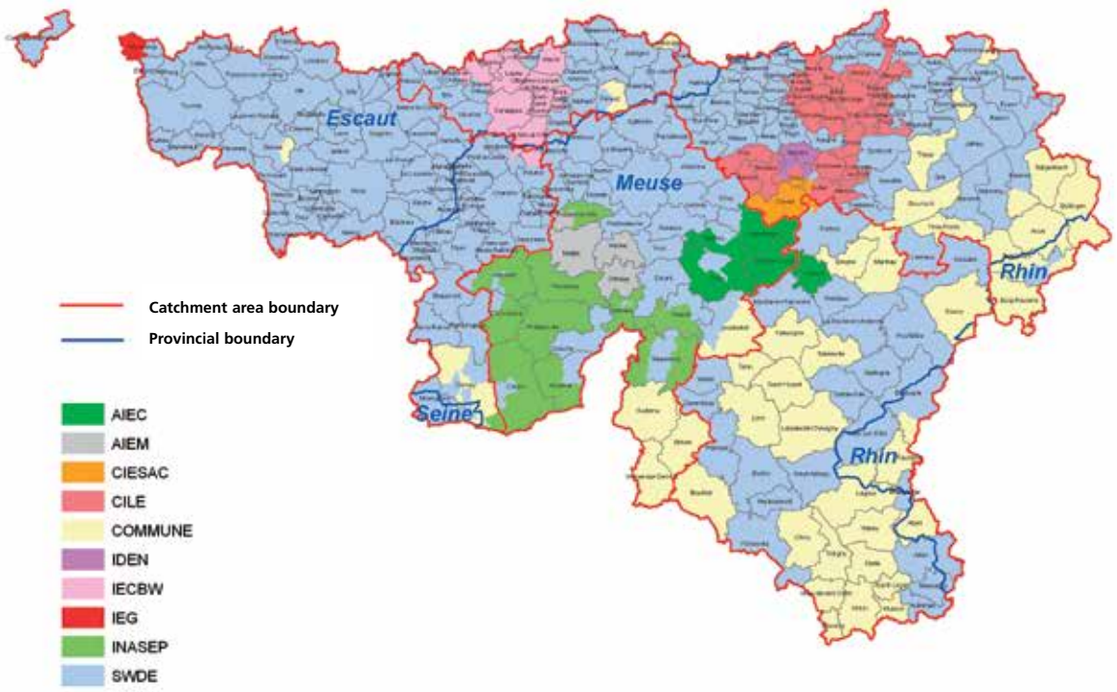
PRODUCTION AND DISTRIBUTION OF DRINKING WATER



Mazy surge tower, Gembloux (VIVAQUA)

Institutional aspects

Map 1 shows the various operators' distribution areas on 1 January 2012.
Fifty-one water distributors were operating in Wallonia at the end of 2011.



Map 1. Water distributors' operating zones — Situation on 1 January 2012

All of the region's water distributors are 100% state owned. All but one of the distributors are also drinking water producers.

These operators can choose one of four different legal forms: the regional company (*société régionale*), intermunicipal company (*intercommunale*), municipal water service (*service communal des eaux*), or a municipal water regie (*régie communale des eaux*).

The following table gives the number of operators and number of water meters associated with each management type.

TYPE OF OPERATOR	Number in 2011	Water meters in 2011 (x 1,000)	% meters in 2011
Regional company	1	1,020.6	66.8%
Intermunicipal company	9	410.6	26.9%
Municipal water service	39	90.6	5.9%
Municipal water regie	2	6.6	0.4%

Table 2. Number of operators per management type

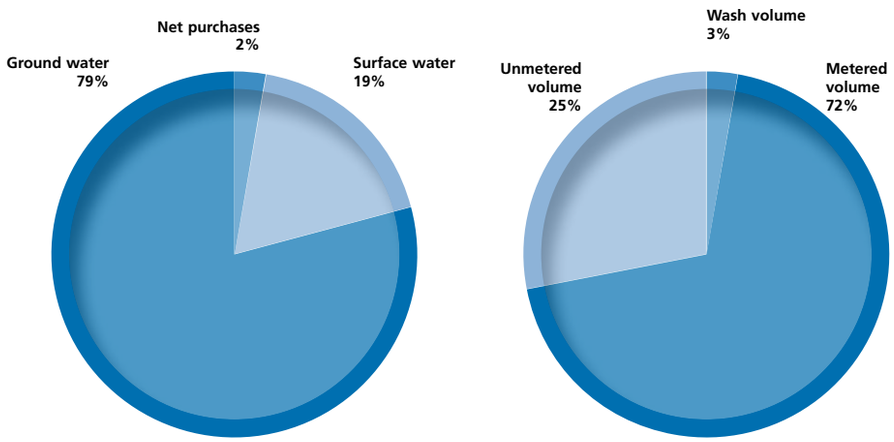
Volumetric water balance sheet

Table 3 gives the volumetric water balance sheet by operator in 2011.

VOLUMETRIC WATER BALANCE SHEET (X 1,000 m³)							
Operator	**Ground water abstraction**	**Surface water abstraction**	**Wash volume**	**Water purchased from third parties**	**Water sold to third parties**	**Metered volume**	**Unmetered volume**
AIEC	1,495	0	0	140	119	1,183	333
AIEM	1,515	0	0	112	235	1,082	311
CIESAC	471	0	6	0	31	265	170
CILE	25,887	0	0	10,209	2,491	26,195	7,410
IDEA	7,326	0	91	1,624	4,339	3,870	650
IDEN	427	0	0	1	6	325	98
IECBW	7,568	0	52	5,307	1,344	10,137	1,341
INASEP	2,525	0	0	1,375	0	2,952	948
Régie des eaux de Chimay	1,368	0	0	5	89	331	954
Régie des eaux de Saint-Vith	621	0	4	6	68	454	101
Service des eaux de Burg-Reuland	283	0	3	19	0	260	39
Service des eaux de Limbourg	38	0	0	513	0	484	68
Service des eaux de Rochefort	362	0	0	409	0	510	261
Service des eaux de Theux	566	0	16	149	7	521	170
Service des eaux de Trois-Ponts	385	0	0	0	59	142	185
Service des eaux de Waimes	193	0	0	0	0	177	16
SWDE	117,183	39,536	7,136	21,176	28,123	102,842	39,793
Total (excluding VIVAQUA)	**168,213**	**39,536**	**7,308**	**41,045**	**36,911**	**151,730**	**52,848**
VIVAQUA	89,580	47,988	531	0	135,088	0	1,949
Wallonia	*87,843*	*47,988*	*531*	*0*	*16,249*	*0*	*1,949*

Table 3. Volumetric water balance sheet by operator — Aquawal members

Graph 1 shows the water flows of the Walloon operators belonging to Aquawal.



Total flow: 211.8 million m³

Graph 1. Volumetric water balance sheet in 2011 – Aquawal members

In 2011, the total flow for Aquawal's partners was 211.8 million cubic metres.

The water resources came from the following sources:
- slightly less than 80% from ground water;
- slightly less than 20% from surface water;
- 2% net purchases from operators outside the region. This water was abstracted by VIVAQUA for the most part but came from Wallonia.

Three percent of this volume was used by the water producers to clean their installations. About one-fourth was not registered by meters ("unmetered"), and the balance, or a little more than 70%, was registered by users' water meters ("metered").

Technical assets

Table 4 shows the technical assets (water meters and mains) by operator.

TECHNICAL ASSETS			
Operator	**Number of meters**	**Total length of trunk lines (km)**	**Network density (water meters/km)**
AIEC	12,427	700	17.8
AIEM	11,475	463	24.8
CIESAC	2,504	150	16.7
CILE	245,952	3,459	71.1
IDEA	468	94	5.0
IDEN	3,064	145	21.1
IECBW	77,408	1,757	44.1
INASEP	35,589	1,250	28.5
Régie des eaux de Chimay	3,091	110	28.1
Régie des eaux de Saint-Vith	3,493	194	18.0
Service des eaux de Burg-Reuland	1,840	130	14.2
Service des eaux de Limbourg	1,237	47	26.3
Service des eaux de Rochefort	5,097	142	36.0
Service des eaux de Theux	4,625	159	29.1
Service des eaux de Trois-Ponts	1,452	133	10.9
Service des eaux de Waimes	1,773	79	22.6
SWDE	1,020,608	26,718	38.2
Total (excluding VIVAQUA)	**1,432,103**	**35,730**	**40.1**
VIVAQUA (Wallonia only)	**-**	**460**	**-**

Table 4. Technical assets by operator — Aquawal members

The network's density (expressed in number of water meters per kilometre of trunk main) can vary greatly from one operator to the next. The average network density is 40 water meters per kilometre of trunk main, for a water meter every 25 metres, more or less, or, expressed otherwise, 25 metres of trunk main per user (excluding service connections).

Water consumption indicators

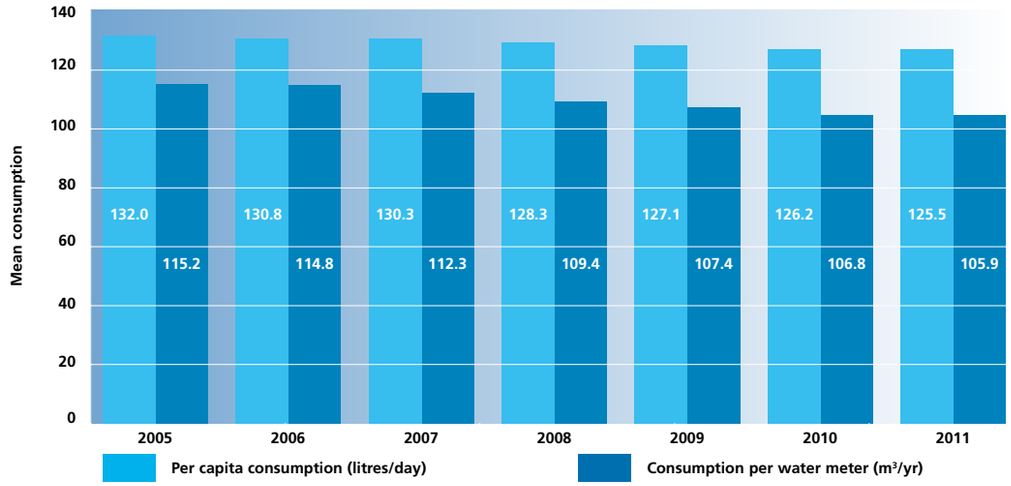
The level of water consumption is measured by means of two indicators: mean consumption per water meter and mean consumption per kilometre of trunk main. These indicators are shown in Table 5.

WATER CONSUMPTION INDICATORS		
Operator	**Consumption per water meter (m³/water meter)**	**Consumption per kilometre of trunk main (m³/km)**
AIEC	95.2	1,689.6
AIEM	94.3	2,336.4
CIESAC	105.7	1,763.9
CILE	106.5	7,573.0
IDEA	8,269.1	41,169.7
IDEN	106.1	2,242.1
IECBW	131.0	5,769.7
INASEP	82.9	2,361.5
Régie des eaux de Chimay	106.9	3,007.7
Régie des eaux de Saint-Vith	130.1	2,342.3
Service des eaux de Burg-Reuland	141.3	1,999.2
Service des eaux de Limbourg	391.1	10,292.3
Service des eaux de Rochefort	100.1	3,599.8
Service des eaux de Theux	112.7	3,277.4
Service des eaux de Trois-Ponts	97.5	1,060.1
Service des eaux de Waimes	100.1	2,257.2
SWDE	100.8	3,849.2
Total	**105.9**	**4,253.8**

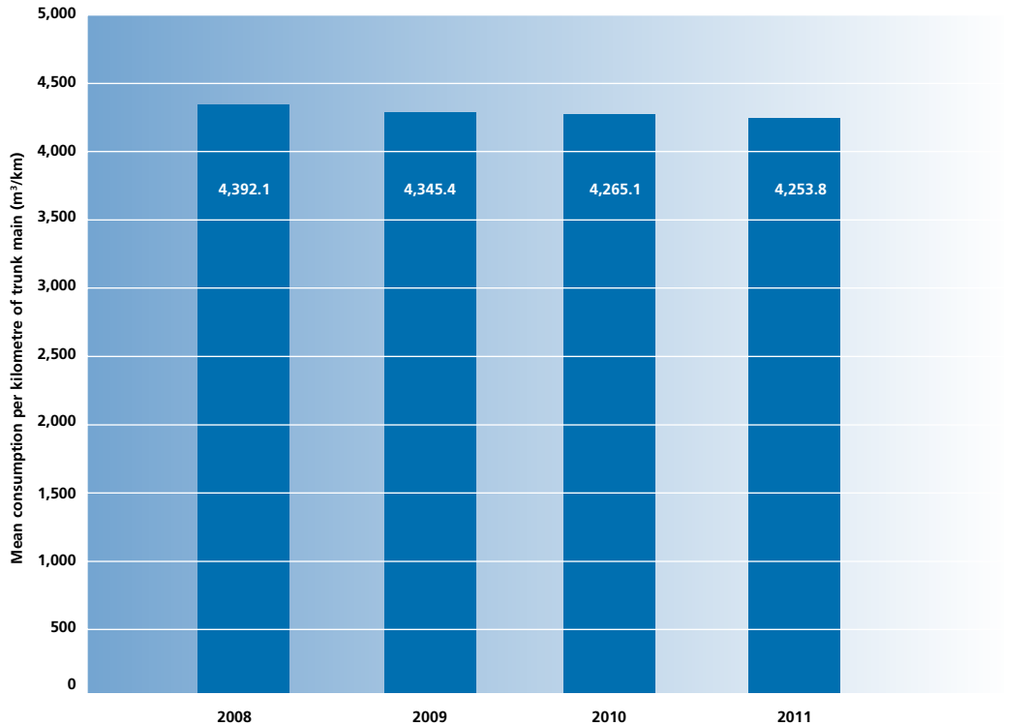
Table 5. Water consumption indicators by operator - Aquawal members

The annual mean water consumption per meter fell by 9.3 cubic metres, or 1.4% per annum, on average, between 2005 and 2011 (Graph 2). This drop can be ascribed above all to the increase in the number of water meters. This is due to two factors: a drop in the mean size of households and the obligation to install a water meter per dwelling for all new service connections since 2004. In parallel, and to a lesser extent, it seems that total water consumption is also falling.

It should be noted that the rising demographic trend is not reflected in the region's total water consumption. Per capita water consumption actually fell from 132 litres per day per capita in 2005 to 125.5 litres per day per capita in 2011.



Graph 2. Mean water consumption per water meter and per capita (2005-2011)

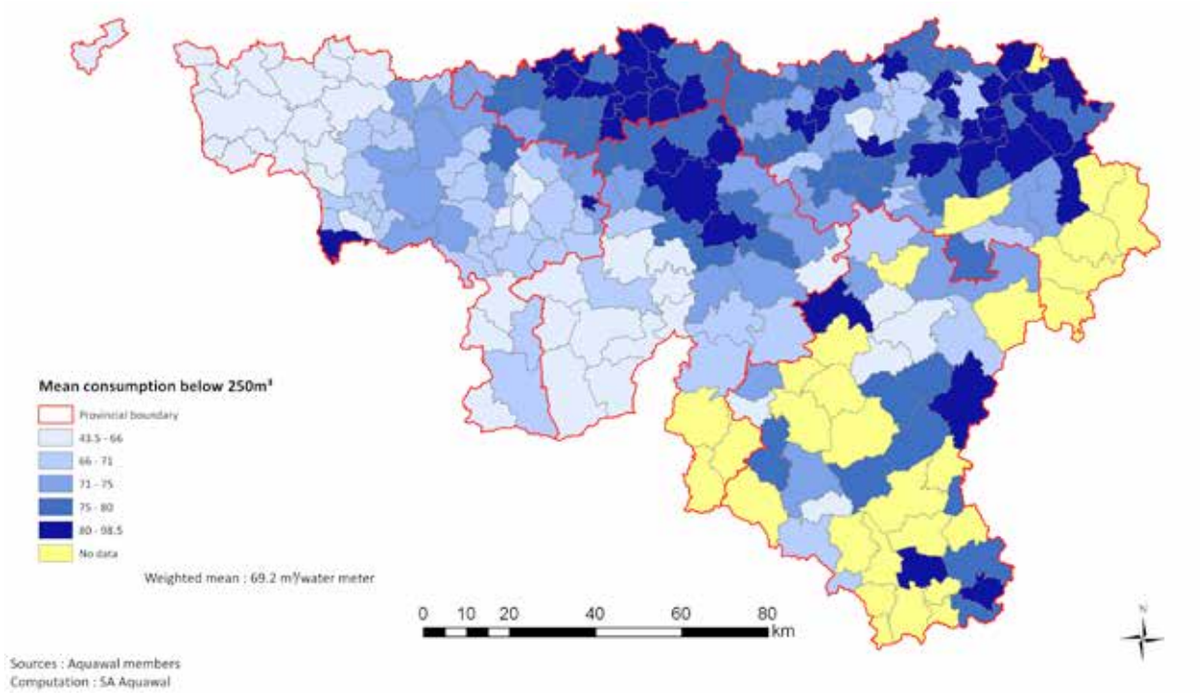


Graph 3. Consumption trends per kilometre of trunk main (2008-2011) - Aquawal members

Besides consumption per water meter, consumption per kilometre of trunk main has also been falling for the past few years (Graph 3). This is due to the combined effects of the relative stagnation of (even slight drop in) total consumption and the spread of housing, which gives rise to increasingly extensive water supply and distribution networks. This specific consumption has fallen by 1.1% per annum, on average, since 2008.

This development is not without problems, since the charges that are linked to the meters (cost of readings, dispatch of invoices, etc.) and infrastructure (investment, maintenance, etc.) are rising at the same time as total water consumption, which is the basis for computing the price of water, remains stable or is even falling slightly. This mechanism is consequently pushing the price per cubic metre up.

Residential water consumption is not uniform across the region (Map 2). It is higher along the Brussels-Namur axis and in eastern Liège Province and lower in Hainaut Province and southern Namur Province.



Map 2. Residential water consumption per municipality in 2011

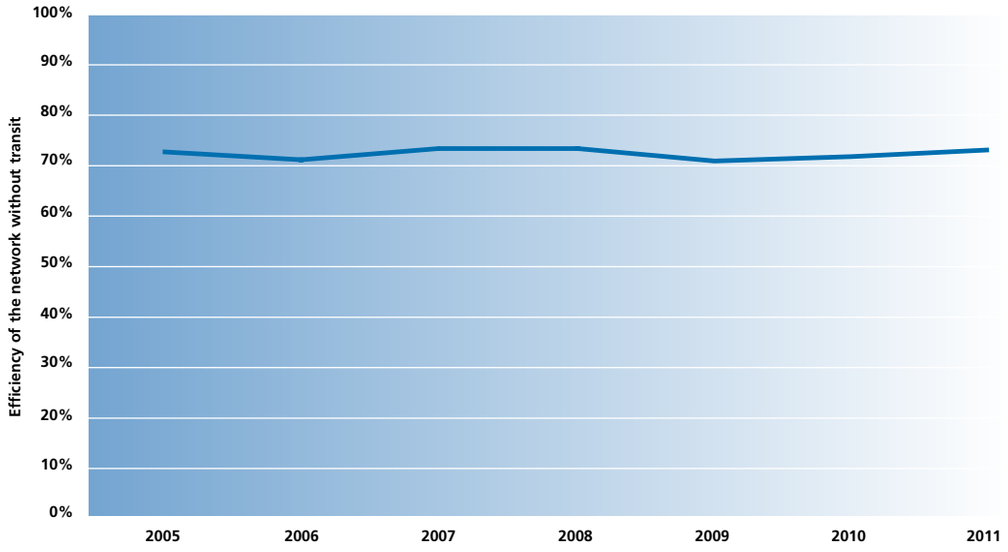
Network state indicators

Table 6 shows the indicators of the state of the network for 2011.

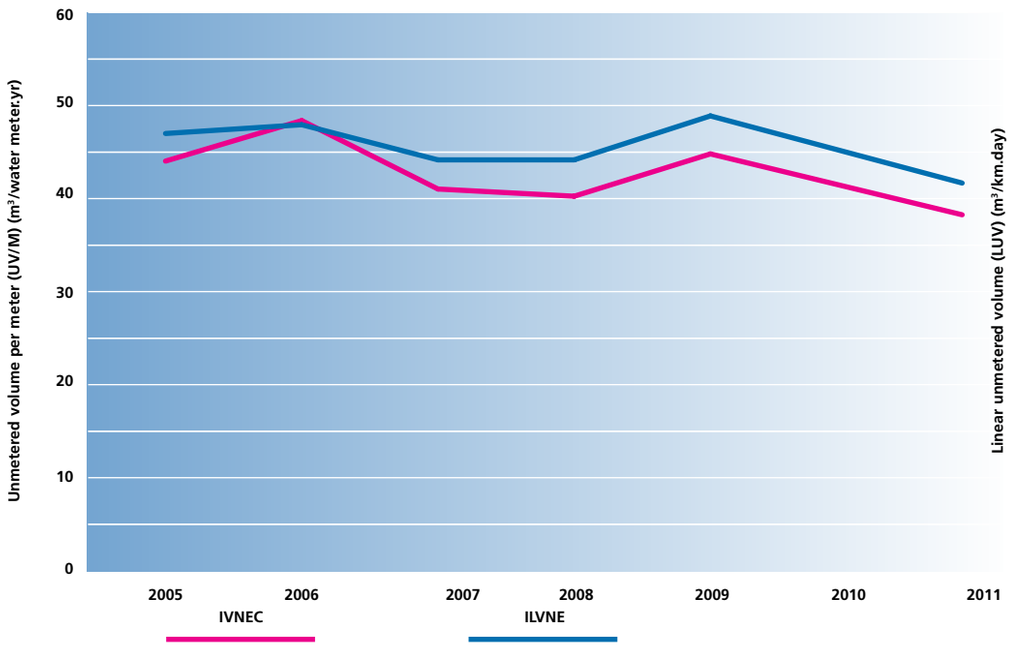
NETWORK STATE INDICATORS				
Operator	**Primary efficiency without transit**	**Primary efficiency with transit**	**Linear unmetered volume (LUV) index (m³/day.km)**	**Unmetered volume per water meter (UV/M) index (m³/water meter.yr)**
AIEC	78.0%	79.6%	1.3	26.8
AIEM	77.7%	80.9%	1.8	27.1
CIESAC	60.8%	63.4%	3.1	68.0
CILE	77.9%	79.5%	5.9	30.1
IDEA	85.6%	92.7%	19.0	1,389.6
IDEN	76.8%	77.1%	1.9	32.0
IECBW	88.3%	89.5%	2.1	17.3
INASEP	75.7%	75.7%	2.1	26.6
Régie des eaux de Chimay	25.7%	30.5%	23.8	308.7
Régie des eaux de Saint-Vith	81.8%	83.8%	1.4	29.0
Service des eaux de Burg-Reuland	87.1%	87.1%	0.8	21.0
Service des eaux de Limbourg	87.7%	87.7%	4.0	54.8
Service des eaux de Rochefort	66.2%	66.2%	5.0	51.2
Service des eaux de Theux	75.3%	75.6%	2.9	36.9
Service des eaux de Trois-Ponts	43.4%	52.0%	3.8	127.3
Service des eaux de Waimes	91.8%	91.8%	0.6	8.9
SWDE	72.1%	76.7%	4.1	39.0
Total	**74.2%**	**78.1%**	**4.1**	**36.9**

Table 6. Network state indicators by operator – Aquawal members

The state of Wallonia's water network appears to have improved slightly over the medium term. Whilst consumption per water meter and kilometre of water pipes continued to fall, the network's efficiency (which correlates positively with water consumption) rose. This shows that the investments made to renovate the network are finally bearing fruit. However, these figures will have to be confirmed in the coming years before firm conclusions to this effect may be made.



Graph 4. Change in primary efficiency without transit (2005-2011) — Aquawal members



Graph 5. Unmetered volume indicator trends (2005-2011) — Aquawal members

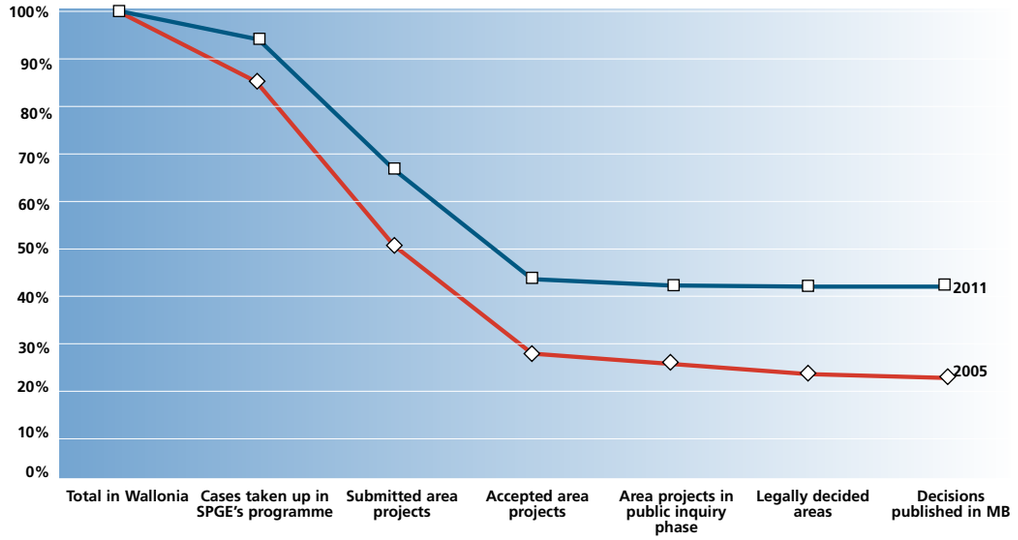
Catchment protection

The protection of water abstraction points is co-ordinated and financed by the public water management company SPGE. The joint-stock company S.A. Protectis is an SPGE subsidiary set up to carry out initiatives on third party properties to protect the abstraction points of potalizable water. It works in the bounded prevention areas that are entrusted to it by its partners, i.e., companies that produce and supply water that can be potabilized (made drinkable) in Wallonia. The progress being made under this programme is shown in Table 7.

CATCHMENT PROTECTION — PROGRESS MADE					
STAGE	**Number of cases**	**Number of abstraction points**	**Total of abstraction points (%)**	**Volumes abstracted (m³)**	**Total volume (%)**
Total in Wallonia		1,700	100	321,058,985	100
Cases taken up in SPGE's programme	608	1,144	67.3	303,461,105	94.5
Submitted area projects	260	649	38.2	230,853,535	71.9
Accepted area projects	173	419	24.3	135,186,703	42.1
Area projects in public inquiry phase	167	405	23.8	130,708,384	40.7
Legally decided areas	158	382	22.5	124,434,144	38.8
Decisions published in MB	155	379	22.3	124,398,924	38.8

Table 7. Current state of catchment protection

22% of the abstraction points, accounting for 39% of the volume abstracted, currently belong to prevention areas as published in Belgium's official gazette, *Le Moniteur belge* ("MB").



Graph 6. Progress made in catchment protection, 2005-2011

Graph 6 shows the progress made in catchment protection between 2005 and 2011. As one can see, the number of areas that have been legally established and published in the official gazette practically doubled between these two dates.
The boundaries of the published prevention areas can be consulted on Wallonia's environment portal: http://environnement.wallonie.be

Investments

Table 8 shows the amounts of the commitments per operator and budget line.

INVESTMENTS (AMOUNTS COMMITTED X €1,000)[6]				
Operator	**Production and treatment of water (excluding pipes)**	**Production, distribution, and service connection pipes**	**Other**	**Total**
AIEC	17.9	281.1	47.1	346.1
AIEM	35.5	44.7	94.0	174.2
CILE	14,903.9	43,847.3	788.2	59,539.4
IDEN	0	171.9	21.5	193.4
IECBW	2,745.8	4,976.5	2,417.9	10,310.2
INASEP	38.3	3,283.8	202.4	3,524.5
Régie des eaux de Saint-Vith	20.1	794.5	17.2	831.8
Service des eaux de Theux	26.3	268.7	0	295.0
Service des eaux de Trois-Ponts	2.1	59.1	49.3	110.4
SWDE	20,776.9	65,413.8	13,861.6	100,052.3
Total	**38,566.8**	**119,141.4**	**17,499.2**	**175,377.3**

Table 8. Investments by operator in 2011 - Aquawal members

The main operators' investments in producing and distributing water totalled about 175 million EUR in 2011. The bulk of these investments was spent on renovating the network of pipes (production pipes, distribution pipes, and service connections).

[6] Data not available: CIESAC, IDEA, Services des eaux de Burg-Reuland, Rochefort, Limbourg, Waimes, and Régie des eaux de Chimay

Employment

Table 9 shows the number of people employed by the operators on 31/12/2011.

DIRECT EMPLOYMENT IN PRODUCTION-DISTRIBUTION	
Operator	**Number of people employed (FTE)**
AIEC	22.26
AIEM	23.60
CIESAC	5.37
CILE	383.90
IDEA	12.00
IDEN	6.75
IECBW	118.18
INASEP	62.00
Régie des eaux de Chimay*	7.00
Régie des eaux de Saint-Vith	7.68
Service des eaux de Burg-Reuland	4.50
Service des eaux de Limbourg	-
Service des eaux de Rochefort	-
Service des eaux de Theux	5.00
Service des eaux de Trois-Ponts	3.44
Service des eaux de Waimes	4.00
SWDE	1,569.90
Total (excluding VIVAQUA)	**2,235.58**
VIVAQUA (in Wallonia only)	371.70
Total (including VIVAQUA)	**2,607.28**

Table 9. Employment generated by water production-distribution by operator – Aquawal members
***2011 data**

Employment in the water production-distribution sector was of the order of 2,600 full-time equivalents at the end of 2011. To these direct employment figures one must add indirect jobs (in subcontracting) and knock-on effects on employment (jobs generated by the increase in activity that is linked to this direct and indirect job creation).

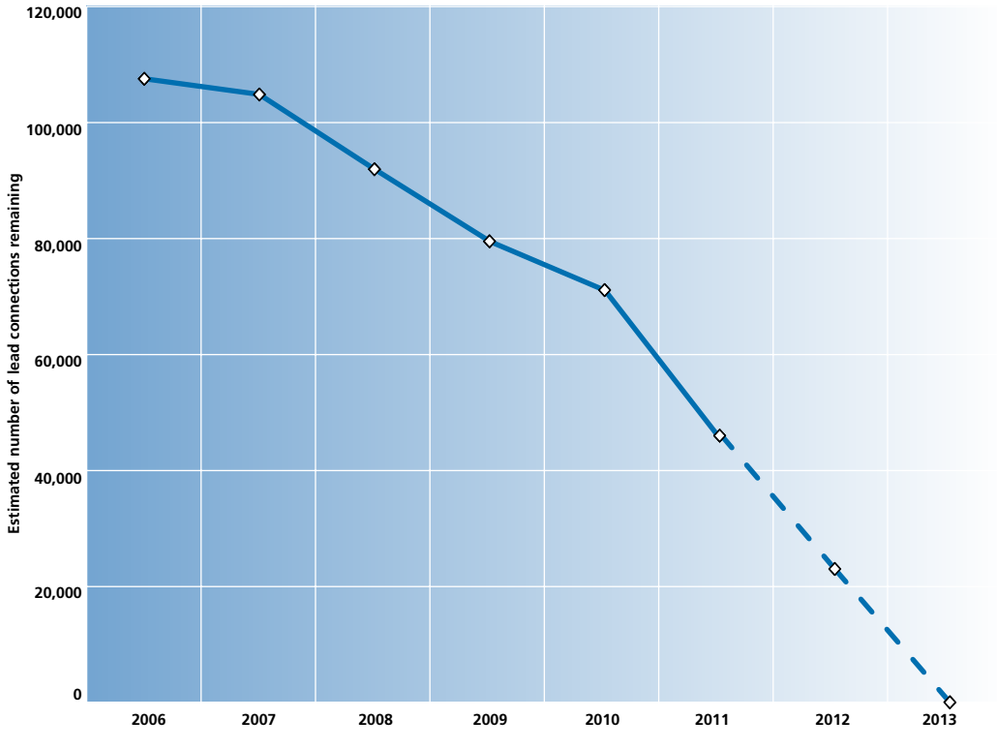
Water quality

The quality of water distributed in Wallonia is covered by a detailed report put out by the regional ministry (*Service Public de Wallonie*).[7] In this chapter we shall thus focus more on lead service connections.
Table 10 gives the number of lead service connections remaining to be replaced on 31/12/2011.

LEAD SERVICE CONNECTIONS	
Operator	**Number of lead connections still to replace**
AIEC	291
AIEM	1,048
CIESAC	163
CILE	16,435
IDEA	0
IDEN	350
IECBW	2,632
INASEP	3,442
Régie des eaux de Chimay	-
Régie des eaux de Saint-Vith	0
Service des eaux de Burg-Reuland	0
Service des eaux de Limbourg	39
Service des eaux de Rochefort	652
Service des eaux de Theux	331
Service des eaux de Trois-Ponts	22
Service des eaux de Waimes	0
SWDE	30,479
Total	**55,884**

Table 10. Estimated number of lead connections still in service by operator — Aquawal members

[7] http://environnement.wallonie.be

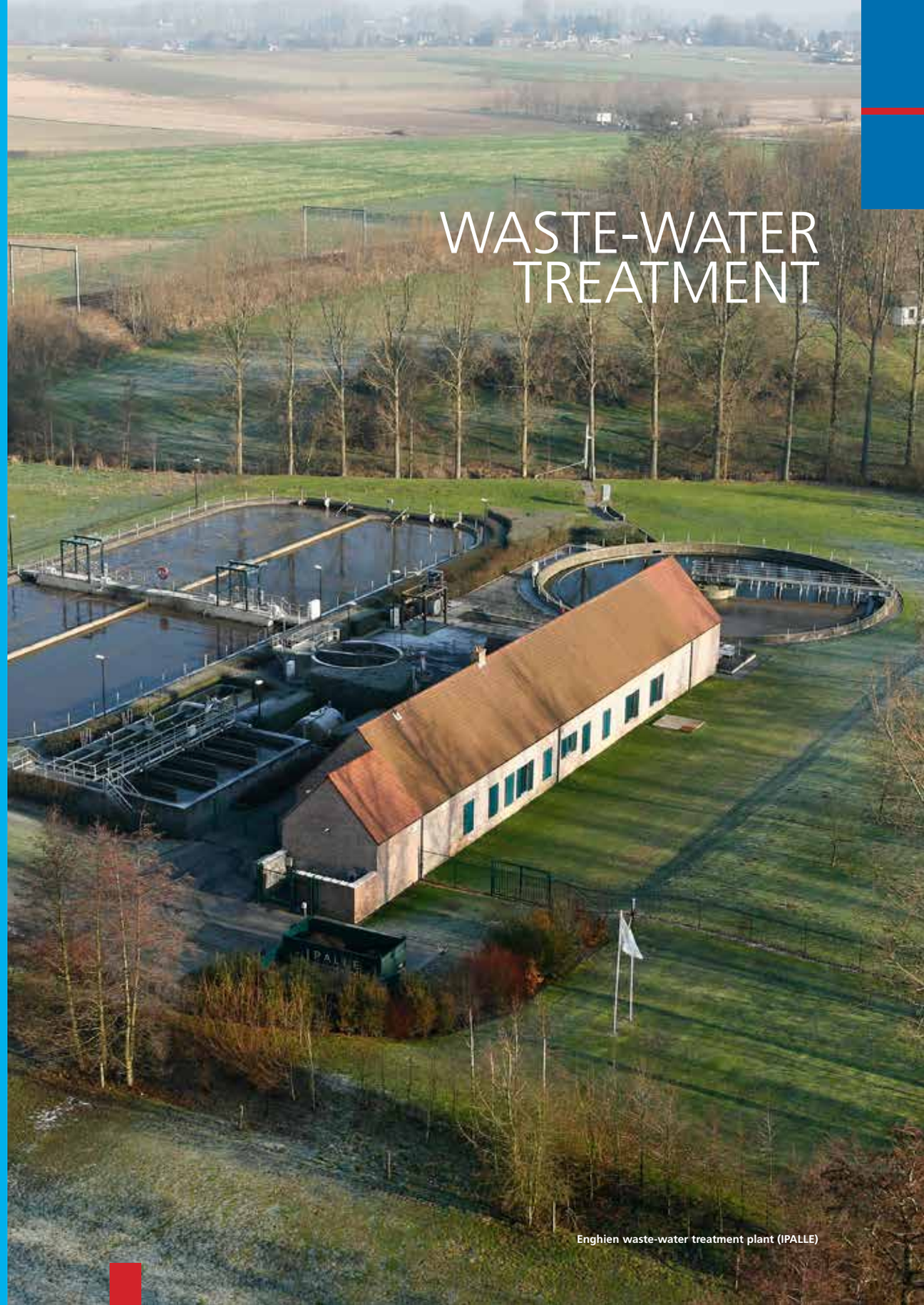


Graph 7. Change in number of lead connections remaining to be replaced (2006-2011) and forecast (2012-2013) – Aquawal members

Lead connections are disappearing from Walloon housing little by little. This is an indirect consequence of the Drinking Water Directive issued by the EU in 1998 (98/83/EC), which sets a mandatory maximum lead content of 10 µg/l as of 25 December 2013.
To achieve this, all contact between water and lead must be eliminated. That is why water distributors are routinely replacing all of these connections.

Some 56,000 remained in the Walloon Region at the end of 2011. So, in the course of the year, about 17,000 service connections were replaced, which is a marked rise compared with previous years.
However, even if all these connections are gradually eliminated, building owners must still replace all lead water pipes that are still present inside their properties.

WASTE-WATER TREATMENT



Enghien waste-water treatment plant (IPALLE)

European waste-water treatment obligations and the indicators set up

Urban waste-water treatment and management policies are governed in particular by European Council Directive 91/271/EEC concerning urban waste-water treatment. The obligations set forth in this Directive concern the collection and treatment of waste water from circumscribed identified agglomerations in Wallonia. The level of treatment required depends on the size of the agglomeration and the type of receiving water.

This Directive sets the following compulsory deadlines: 1998 for agglomerations of 10,000 or more population-equivalents and end 2005 for agglomerations of 2,000-10,000 p.e. As defined in the Directive, an agglomeration means an area where the population and/or economic activities are sufficiently concentrated for urban waste water to be collected and conducted to an urban waste-water treatment plant or to a final discharge point.

When it comes to agglomerations of less than 2,000 p.e., the Directive requires appropriate treatment of the waste water if a collecting system exists. By "appropriate treatment", the Directive means "treatment of urban waste water by any process and/or disposal system which after discharge allows the receiving waters to meet the relevant quality objectives and the relevant provisions of this and other Community Directives".

This fundamental distinction in the approach to treating waste water can lead to very variable situations in terms of the facilities in place. Agglomerations of 2,000 and more population-equivalents must effectively be equipped with collecting systems and WWTPs whereas the infrastructure required for agglomerations of less than 2,000 p.e. will depend on the receiving environment.

Finally, at a time when the European Commission has reminded a number of Member States, including Belgium, of their responsibilities when it comes to treating the waste water generated by agglomerations of 2,000 p.e. and above, the indicators reflecting the treatment situation must comply with the parameters used by Europe in order to be able to determine the said agglomerations' compliance.

So, the previously used notion of "sewerage level" or sewer coverage level, i.e., the ratio of the length of existing sewers over the total required sewerages length, has been replaced by the indicator of collection rate, which is defined as the proportion of the load of an agglomeration that is collected by the existing network of urban collectors (the sewers). This is thus no longer a pipe length ratio, but clearly a pollution load ratio.

Besides this aspect of waste-water collection, it is of course important to consider the waste water's conveyance to treatment plants via collectors and then its treatment. Analysis of the agglomerations' degrees of compliance is based on the combination of all these components using the "collected-treated" ratio indicator.

Institutional aspects

Waste-water treatment is financed and co-ordinated by the public water management company *Société Publique de Gestion de l'Eau* (SPGE), which delegates the facilities' implementation and operation to seven approved treatment bodies (OAA in French). All of the approved treatment bodies are intermunicipal companies.

Map 3 presents the various approved treatment bodies' operating zones (OZs).

Map 3. Approved treatment bodies' (OAA) operating zones

The general planning of waste-water treatment is enshrined in treatment plans by sub-catchment area or PASH (*Plans d'Assainissement par Sous-bassins Hydrographiques*). It relies more particularly on the SPGE's investment programmes, which are subject to Walloon government approval.

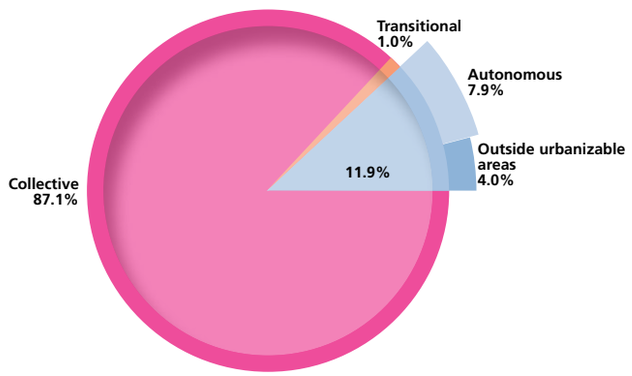
The PASH define three treatment schemes, as follows:

1) **Collective treatment**: This scheme is characteristic of areas that have (or will have) sewers/collectors connected to an existing or planned public waste-water treatment plant.

2) **Autonomous treatment**: This scheme is characteristic of areas where the residents themselves are responsible for treating their waste water, whether individually or in small groups.

3) **Transitional treatment**: This scheme is characteristic of areas where more specific analysis is necessary to redirect them towards one of the two foregoing schemes.

The following figure illustrates these schemes' distribution in Wallonia.



Graph 8. Distribution of the population according to the three treatment schemes set in the General Waste-water Treatment Regulations (RGA in French) — 2011

The PASH are currently being revised. This revision began in 2011 and will continue over the next few years.

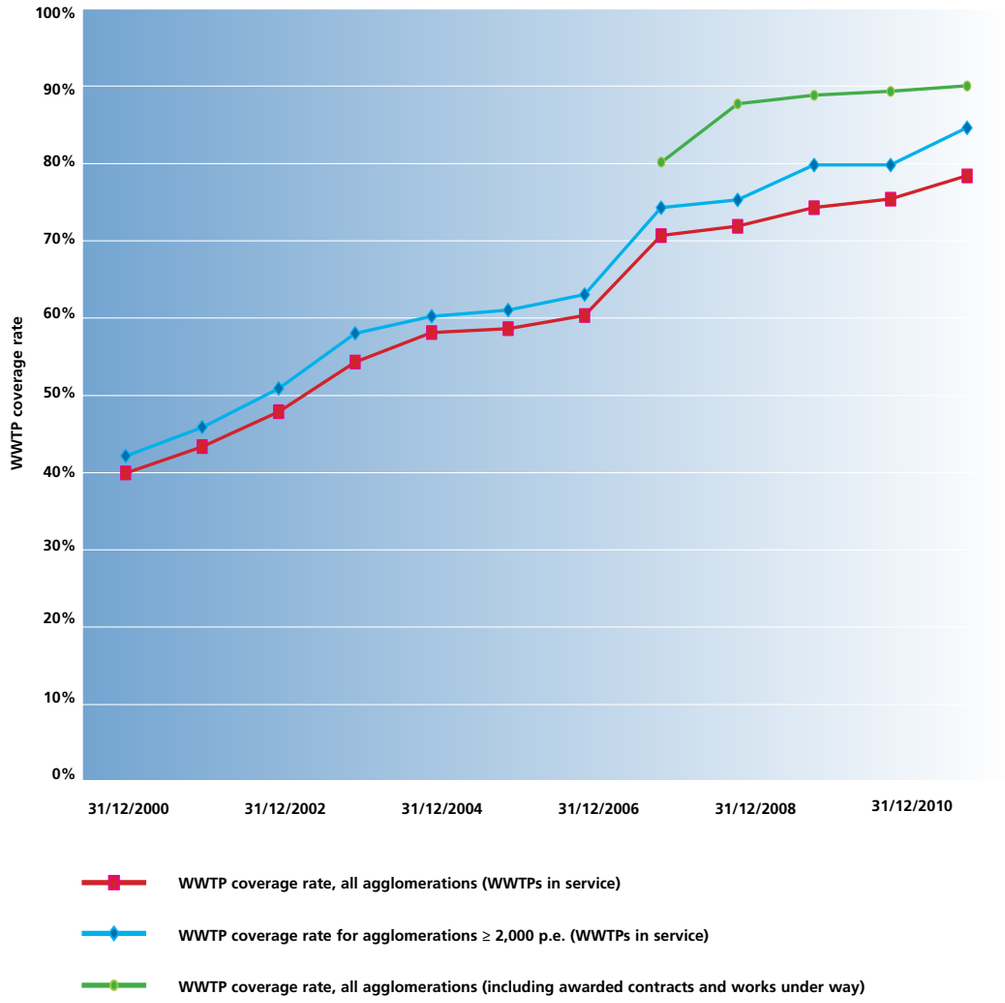
Technical assets

Wallonia has invested massively in waste-water treatment in the past few years and is continuing to do so. The result is a waste-water treatment plant coverage rate of 78.9% on 31/12/2011 for the entire territory of Wallonia. Just as a reminder, this rate is the ratio of the nominal capacities of the existing WWTPs over the sum of the nominal capacities of all the WWTPs ultimately planned to operate in the Walloon Region.

This same coverage rate is 84.4% for agglomerations of more than 2,000 p.e. alone. These data are shown in Table 11 and Graph 9. The coverage rate concerns the WWTPs that contribute wholly or in part to treating the waste water of at least one agglomeration of 2,000 or more p.e.

TECHNICAL ASSETS	All agglomerations	Agglomerations ≥ 2,000 p.e.
Number of existing collective WWTPs	403	191
Number of collective WWTPs planned	829	211
Existing collective WWTP capacity	3,504,473 EH	3,320,508 EH
Planned collective WWTP capacity	4,479,389 EH	3,932,226 EH
Coverage rate	**78.2%**	**84.4%**

Table 11. Number of WWTPs and their capacity on 31/12/2011

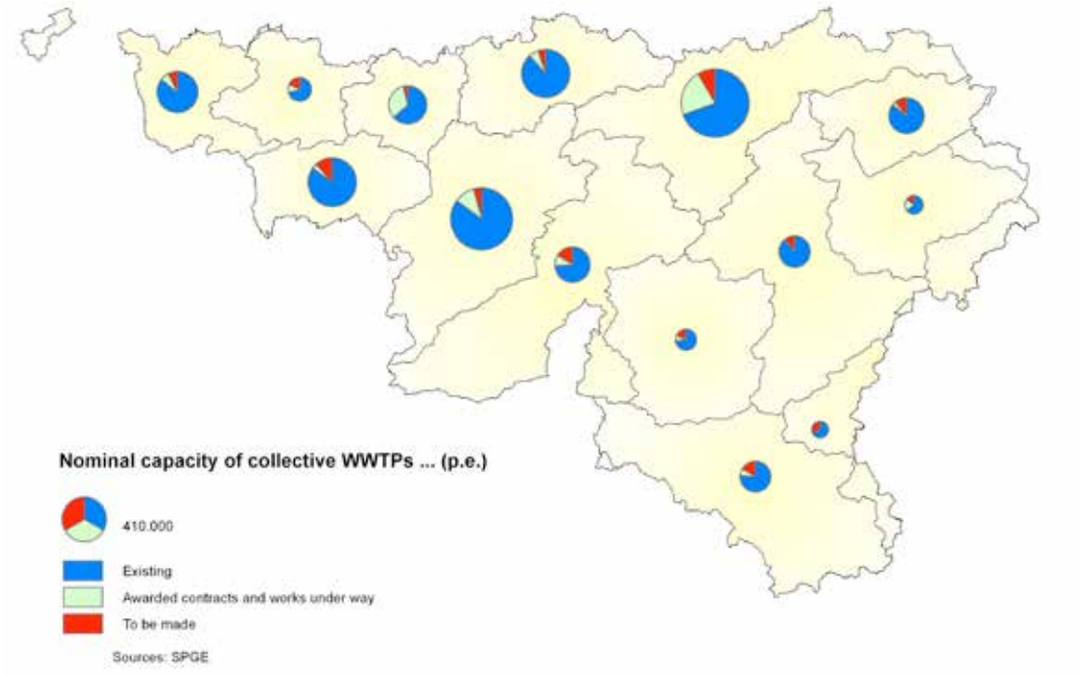


Graph 9. Waste-water treatment plant coverage rates, 2000-2011

Similarly, if we consider all the waste-water treatment plants being built or for which contracts have been awarded, Wallonia's "broadened" waste-water treatment plant coverage rate is 89.8%, and even 96.0% for agglomerations of more than 2,000 p.e.

It is important to mention that the way this rate is computed has been changed to allow for a standardised WWTP nominal capacity based on 60 grams of BOD_5 per day and per capita. In previous years, this capacity used to vary between 40 and 60 grams of BOD_5 per day and per capita, depending on the local context. As a result, the coverage rate in 2011 is slightly less favourable than in previous years.

Map 4 shows the situation by subcatchment area at the end of 2011.



Map 4. Nominal capacites of WWTPs by subcatchment area on 31/12/2011

The best equipped subcatchment areas are currently those of the Ourthe and Dyle-Gette. The bulk of the ongoing investments is currently going to the Meuse-aval (downstream) subcatchment area.

The sewer network consisted of 16,665 km of sewers and 1,750 km of collectors at the end of 2011 (Table 12).

SEWER NETWORKS	All agglomerations	Agglomerations ≥ 2.000 p.e.
Total length of existing sewers (km)	16,665	11,997
Total length of existing collectors (km)	1,746	1,456

Table 12. Lengths of drainage and collection networks, 2011

Compliance with Directive 91/271/EEC

Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment, or Directive 91/271/EEC for short, required the waste water of all agglomerations of more than 10,000 p.e. to be collected and treated by 1998. The same was required for agglomerations of from 2,000 to 10,000 p.e. by 2005. The European Commission deems this obligation to be met when 98% of the waste water is collected and treated, provided that the uncollected part does not exceed 2,000 p.e. in all.

On 31/12/2011, the mean collection rates for Wallonia's agglomerations were 98.5% for agglomerations of more than 10,000 p.e. and 96.9% for agglomerations of between 2,000 and 10,000 p.e.

The mean collection and treatment rates are 81.8% and 73.7%, respectively (Table 13).

COMPLIANCE OF AGGLOMERATIONS	Agglomerations ≥ 10,000 p.e.	Agglomerations between 2,000 and 10,000 p.e.
Number of agglomerations	39	126
Agglomeration size	2,678,100 p.e.	503,700 p.e.
Mean collection rate	**98.5%**	**96.9%**
Mean collection and treatment rate	**81.8%**	**73.7%**

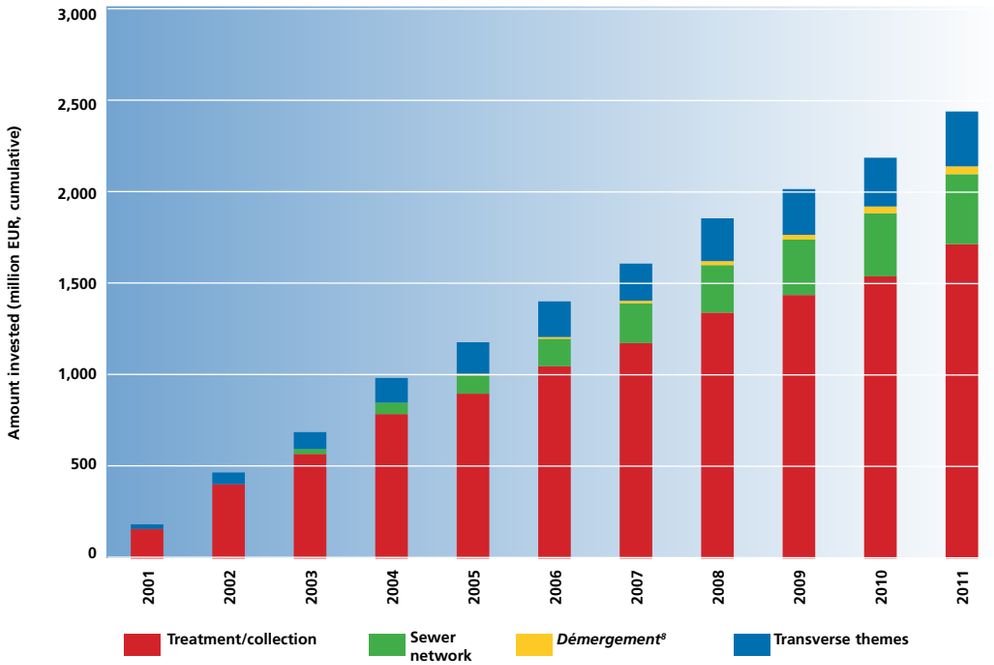
Table 13. Compliance of agglomerations — 2011

As we can see, the waste-water collection rate (that is to say, the drainage phase) meets the European target for agglomerations of more than 10,000 p.e. and has practically reached the target for agglomerations of 2,000-10,000 p.e. The bulk of the investments still to be made thus effectively concerns treatment.

Investments

To achieve the targets of the relevant European Directives (91/271/EEC, 2000/60/EC, and 2006/7/EC), SPGE establishes five-year investment programmes.

The amounts invested (cost of the work) since the SPGE was created are shown in Graph 10.



Graph 10. Waste-water treatment investments over 2001-2011

All in all, SPGE has deployed a budget of the order of 2.4 billion EUR in the waste-water treatment and collection sector over the past eleven years, or an average of 220 million EUR a year. The mean collection and treatment rates, for their part, are 81.8% and 73.7%, respectively (Table 13).

[8] Drainage operations and pumping of water from settled mining areas

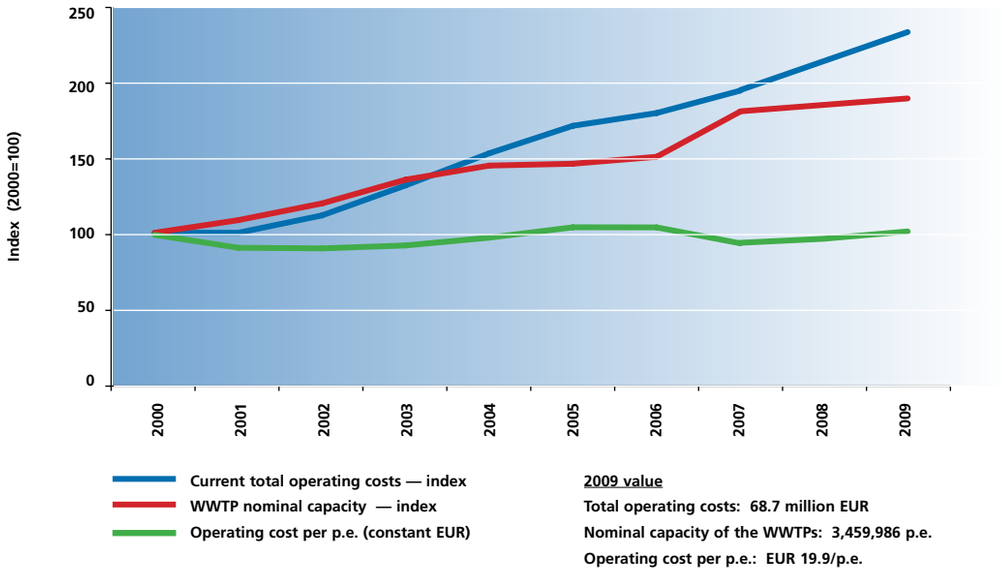
Operation and employment

Table 14 shows the jobs generated by waste-water treatment and démergement operations by operator as of 31/12/2011.

DIRECT EMPLOYMENT IN WASTE-WATER TREATMENT	
Operator	**Employment generated by waste-water treatment and démergement (FTE)**
AIDE	245.00
AIVE	69.00
IBW	86.70
IDEA	107.00
IGRETEC	110.50
INASEP	89.27
IPALLE	76.95
SPGE	42.00
Total	**826.42**

Table 14. Employment generated directly by waste-water treatment and démergement

Waste-water treatment thus generated directly more than 800 jobs in Wallonia. To these direct jobs one must add indirect jobs (in subcontracting) and knock-on effects on employment (jobs generated by the increased activity linked to this direct and indirect job creation).



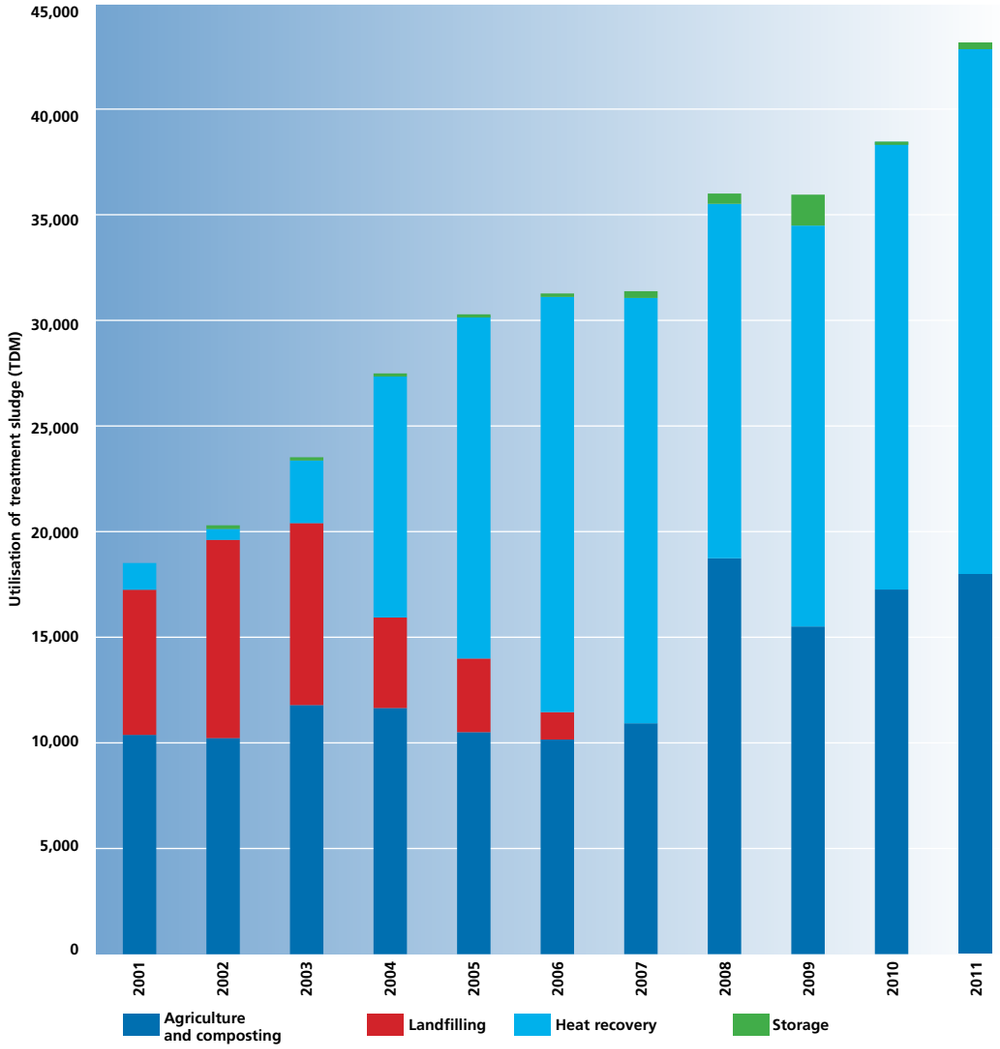
Graph 11. Total and unitary treatment works' operating costs, 2000-2009

Besides labour, the operation of the treatment works is another major component of the operating costs. Given the rise in the WWTP coverage rate, the total operating costs have risen commensurately. They were 68.7 million EUR in 2009. However, the unitary operating costs, in constant euros, remained the same as in 2000 (Graph 11).

Production and recovery of waste-water treatment sludge

Treating waste water produces sludge. This sludge can be either placed in landfills or used in agriculture or as fuel.

Graph 12 shows the trends in the amounts of sludge produced and their utilisation since 2001.

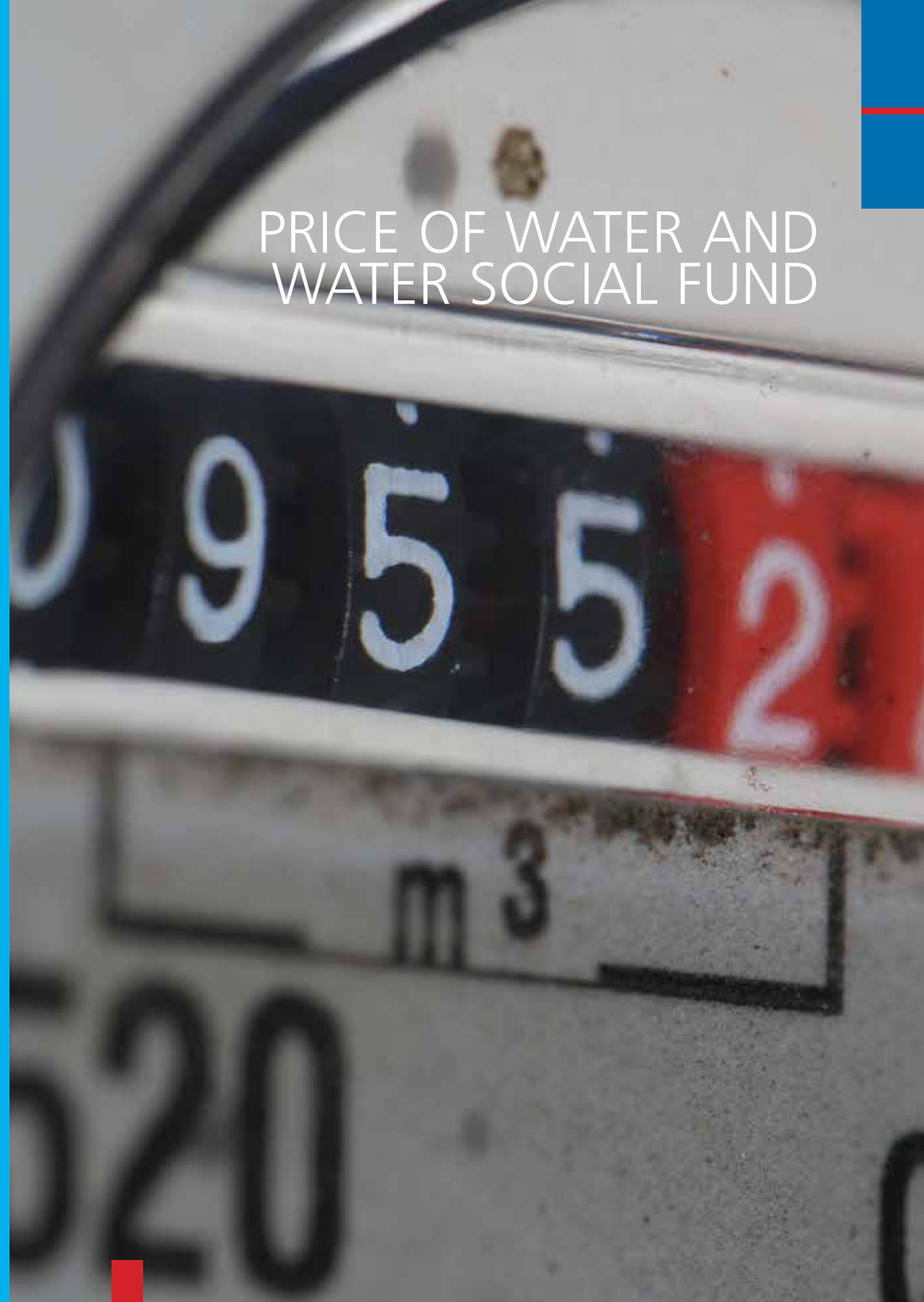


Graph 12. Treatment sludge utilisation trends (2001-2011)

Sludge production has increased greatly in parallel with the growth of the waste-water treatment plant network. What is more, whereas in 2001 close to one-third of the annual sludge output was still landfilled, no sludge is landfilled anymore, and hasn't been since 2007. The totality is recovered, in the interest of sustainable development.

So, a total of 43,000 metric tons of dry matter (TDM) of sludge was produced in 2011 and all of this output was recovered: 56% was used to generate heat and 43% was used in agriculture.

PRICE OF WATER AND WATER SOCIAL FUND



The price that users pay for water is a subject that cuts across the anthropogenic water cycle. Since 1990, users effectively pay a single water bill covering the production-distribution of drinking water and waste-water treatment.

Since 2005, a single rate structure applies to all of Wallonia's users. This structure is based on the notion of the true cost of water. This means that the entire anthropogenic water cycle is financed by the price of water. There is thus a true cost of distribution (TCD), computed on the basis of the producers-distributors' costs, and a true cost of treatment (TCT), calculated from SPGE's Financial Plan. The Water Social Fund fee and 6% VAT are then added to these two parameters.

The single rate structure applied in Wallonia is as follows:	
Invariable portion:	20 x TCD + 30 x TCT
0-30 m³ a year:	½ TCD + Water Social Fund + VAT
30-5,000 m³ a year:	TCD + TCT + Water Social Fund + VAT
5,000-25,000 m³ a year:	0.9TCD + TCT + Water Social Fund + VAT
More than 25,000 m³ a year:	tTCD + TCT + Water Social Fund + VAT with $0.5 \leq t \leq 0.9$

Which indicator for the price of water?

It is not easy to come up with a water price indicator that is 100% relevant. Indeed, it is very tempting to want to compare water distributors on the basis of the true cost of distribution (TCD) only. However, the TCD depends very heavily on the volume of water sold. Given the large share of overhead inherent in water distribution, the lower consumption falls, the higher the TCD becomes. Consequently, the TCD alone cannot be used.

That is why we use a second indicator, the mean billed amount per user, which allows for mean consumption levels, for the production-distribution part. If a distributor has an advantage in computing its TCD because of a high consumption level, this will be offset by taking the mean water bill into account.

What is more, a water price indicator indicates only the cost of water for users. In no event does it reflect a company's managerial efficiency. The price effectively depends on the context (network density, necessary investments, source and treatment of water, etc.) and the quality of the service provided.

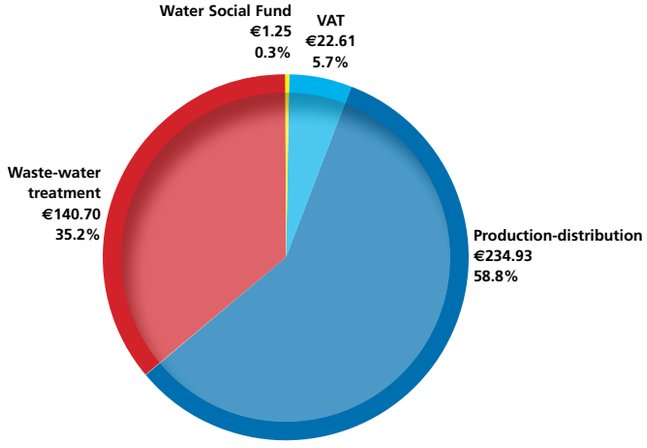
The price that users pay for water is a subject that cuts across the anthropogenic water cycle. Since 1990, users effectively pay a single water bill covering the production-distribution of drinking water and waste-water treatment. Since 2005, a single rate structure applies to all of Wallonia's users. This structure is based on the notion of the true cost of water. This means that the entire anthropogenic water cycle is financed by the price of water. There is thus a true cost of distribution (TCD), computed on the basis of the producers-distributors' costs, and a true cost of treatment (TCT), calculated from SPGE's Financial Plan. The Water Social Fund fee and 6% VAT are then added to these two parameters.

Water price indicators

Table 15 gives the water price indicators by operator as they stood on 31/12/2011.

PRICE OF WATER			
Operator	**TCD**	**Mean bill per user (production-distribution part)**	**Bill for 100 m3 (incl. all fees & taxes)**
AIEC	€1.8400	€184.31	€355.26
AIEM	€2.1700	€215.42	€391.99
CIESAC	€1.8155	€200.91	€352.53
CILE	€2.3600	€263.15	€413.14
IDEA	€0.4965	€4,108.11	€205.73
IDEN	€1.9518	€216.86	€367.70
IECBW	€1.9200	€261.05	€364.16
INASEP	€2.1800	€191.71	€393.10
Régie des eaux de Chimay	€1.3600	€105.46	€301.84
Régie des eaux de Saint-Vith	€1.5500	€209.39	€322.98
Service des eaux de Burg-Reuland	€1.4900	€217.91	€316.30
Service des eaux de Limbourg	€1.8400	€728.75	€355.26
Service des eaux de Rochefort	€2.1900	€230.16	€394.21
Service des eaux de Theux	€2.0900	€245.93	€383.08
Service des eaux de Trois-Ponts	€2.0200	€206.98	€375.29
Service des eaux de Waimes	€2.1660	€227.54	€391.54
SWDE	€2.2504	€238.02	€400.94
Mean	€2.2374	€248.24	€399.49
TCT	€1.4070		
Water Social Fund	€0.0125		

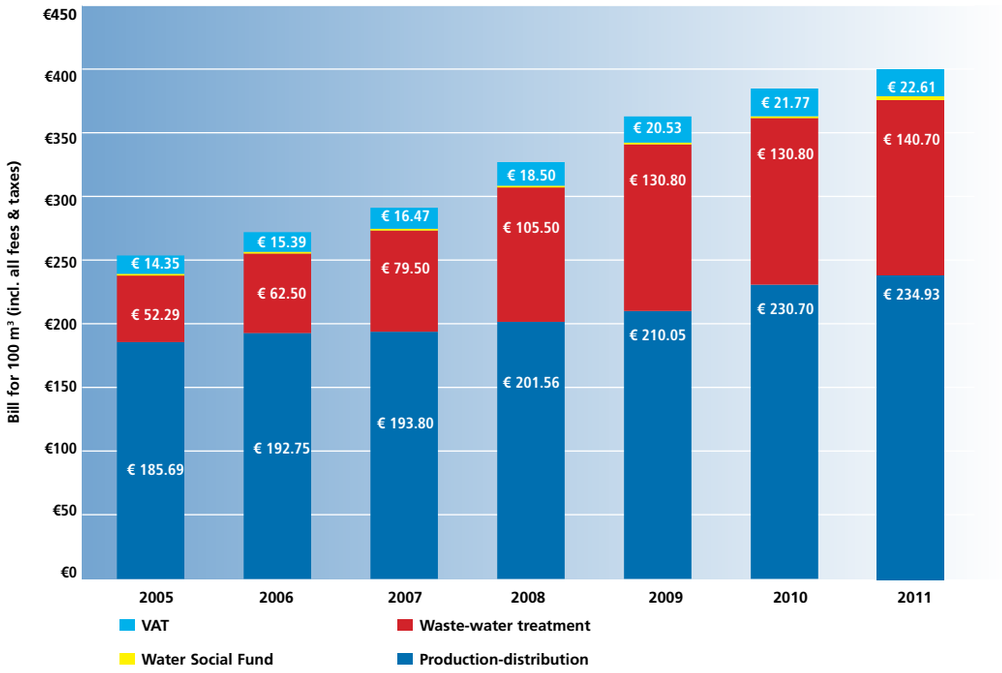
Table 15. Water price indicators by operator — Aquawal members



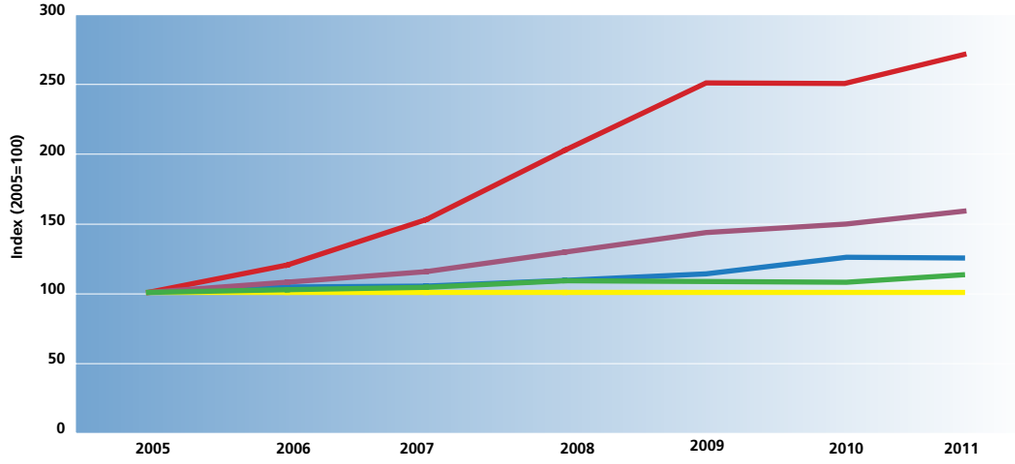
Mean total invoice for 100 m³ on 31/12/2011: €399.49

Graph 13. Composition of a bill for 100 m³ — Aquawal members

A water bill for 100 m³ stood, on average, at about €400 (or €4 per cubic metre of water) at the end of 2011, with the following breakdown: €235 (59%) for production-distribution (TCD), €141 (35%) for waste-water treatment (TCT), and the remainder for the Water Social Fund and VAT (Graph 13).



Graph 14. Water price component trends (2005-2011) — Aquawal members



2011 index (2005 = 100)
Production-distribution: 126.5
Waste-water treatment: 269.1
Water Social Fund: 100.0
Total bill: 157.6
CPI (consumer price index): 114.5

Graph 15. Water price component trends (2005-2011 — index) — Aquawal members

The price has been rising for several years (Graphs 14 and 15). The mean total bill for the consumption of 100 m³ has risen 57% since 2005. The cost of living, represented by the consumer price index, increased 14% over this period. It should be noted that the population's income follows the consumer price index closely, and thus rose 14% over this same period.

The true cost of distribution rose at the same rate as inflation between 2005 and 2008. In 2009 and 2010 it rose faster than inflation whilst in 2011 it rose more slowly (+1.8%) than the consumer price index. In contrast, the true cost of treatment, which had tended to rise much faster than inflation since 2005, stabilised in 2010 and then rose again (+7.6%) in 2011.

It should also be pointed out that certain industries are not subject to the same rate structure as regards the TCD because they pay an industrial waste-water tax instead. The amount of this tax was set at 8.9242 euros per computed pollution load unit in 1990 and has not changed since.

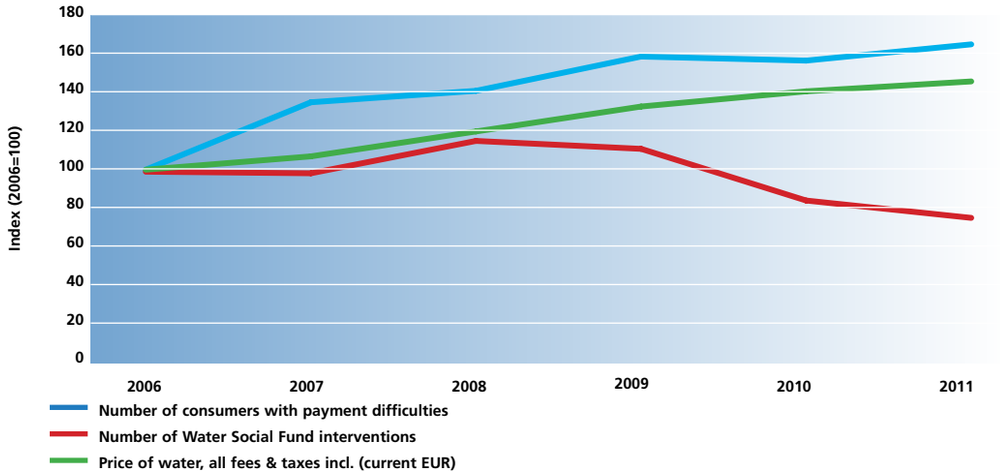
Water Social Fund

The Water Social Fund is a facility for helping the most underprivileged households to pay their water bills. SWDE set up the fund in 1996 and it was subsequently spread to cover all of Wallonia (with the exception of the region's German-speaking part) in 2004. This system gets the water distributors, SPGE, and municipal administrations to participate via social services ("CPAS"). It is financed by a fee of 0.0125 euro levied on each cubic metre of water distributed. Table 16 show the trends in the Water Social Fund's interventions between 2005 and 2011.

WATER SOCIAL FUND				
Year	Number of consumers with payment difficulties	Number of interventions	Total amount of aid	Mean intervention amount
2005	–	8,991	€ 1,259,93	€ 140.13
2006	76,202	9,816	€ 1,408,526	€ 143.49
2007	103,054	9,733	€ 1,484,250	€ 152.50
2008	107,623	11,421	€ 1,816,256	€ 159.08
2009	121,282	11,008	€ 1,971,079	€ 175.02
2010	119,660	8,312	€ 1,927,432	€ 231.89
2011	126,136	7,407	€ 1,650,055	€ 222.56

Table 16. Water Social Fund intervention trends (2005-2011)

The number of consumers with payment difficulties (that is to say, the number of users who do not pay within the summoned deadline) rose 65% in five years. This trend closely followed that of the price of water, which rose 46% over the same period (Graph 16).



Graph 16. Numbers of consumers with payment difficulties and Water Social Fund interventions between 2006 and 2011

However, the number of the social fund's interventions followed a different trend. It rose between 2006 and 2008, but more slowly than the number of households experiencing payment difficulties. This was reflected in the increasingly larger mean amount of financial aid granted each year. Since 2009 the number of interventions has fallen. This drop in the number of interventions is linked to both a higher intervention ceiling and the use of all of the available drawing rights.

GLOSSARY

BOD_5: Five-day biochemical oxygen demand. The amount of oxygen needed by aerobic organisms to break down the organic matter in a litre of water incubated at 20°C for five days in the absence of light; also determined biochemically. This parameter is used to evaluate the biodegradable organic fraction of waste water's pollution load.

Nominal capacity (of a WWTP): Number of p.e. for which a WWTP is scaled. This number allows for the current population, future population, and economic activity that discharge their waste water into the public sewers.

TCT (True Cost of Treatment): Component of the price of water that is supposed to be used to cover the cost of treating the waste water.

TCD (True Cost of Distribution): Component of the price of water that is supposed to be used to cover the cost of producing and distributing drinking water.

Consumer with payment difficulties: A consumer whose case is sent to social services because upon expiry of the deadline by which he/she has been summoned to pay, the consumer has still failed to pay all or part of his/her water distribution bill.

Network density: Mean number of water meters per kilometre of trunk main.

P.E. (population equivalent): The population equivalent is a theoretical concept based on a large number of measurements that expresses the pollution load of an effluent (regardless of the source of the pollution) per capita and per day.

Unmetered volume per meter (UV/M; "IVNEC" in French): This index is the ratio, in cubic metres and by water meter, of the unmetered volume of water over the number of water meters.

Linear unmetered volume (LUV; "ILVNE" in French): This index is the ratio, in cubic metres per day and per kilometre, of the unmetered volume over the length of the trunk mains.

PASH: *Plan d'Assainissement par Sous-bassin Hydrographique* or Sub-catchment Area Treatment Plan.

Service connection: The portion of pipes connecting the main conduit located under the roadway to a building. The service connection ends at the water meter.

Primary efficiency or input/output ratio with transit: Ratio, expressed as a percent, of the metered volume plus the volume sold to third parties over the abstracted volume plus the volume bought from third parties minus the volume used to wash the production facilities.

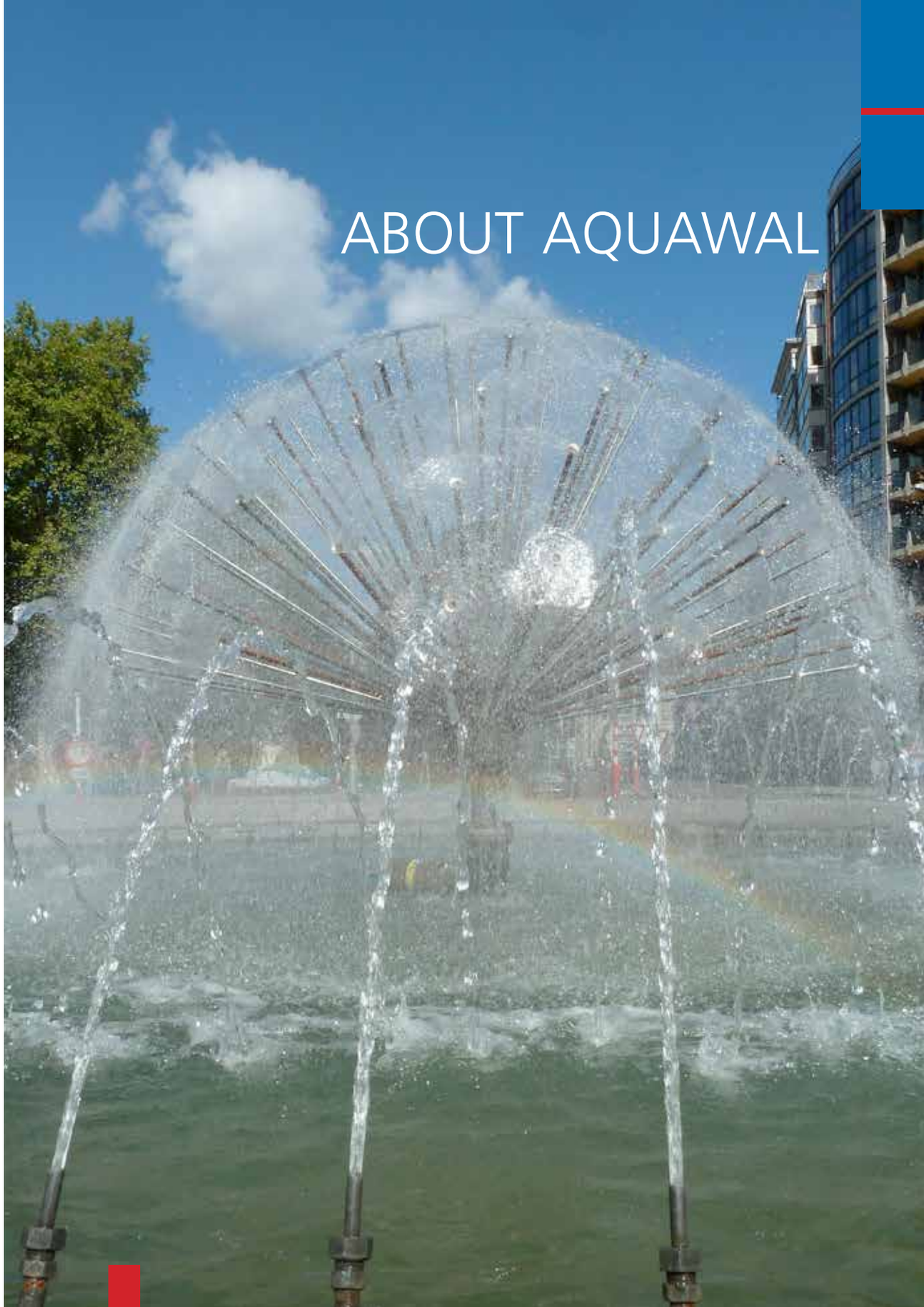
Primary efficiency or input/output ratio without transit: Ratio, expressed as a percent, of the metered volume over the abstracted volume plus the volume bought from third parties and minus the volumes sold to third parties and used to wash the production facilities.

Sub-catchment area: Natural subdivision of catchment areas (a.k.a. river basins and drainage basins) as defined in Article 7 of the decree on the Water Code that sets the boundaries of Wallonia's sub-catchment and catchment areas.

WWTP: Collective waste-water treatment plant.

Coverage rate: The coverage rate is defined by the relationship between the nominal capacities of the operating waste-water treatment plants and the total nominal capacity of the existing and planned waste-water treatment plants to cover the entire territory of Wallonia.

ABOUT AQUAWAL



A dynamic federation serving its members

Aquawal is the trade federation of public water cycle operators in Wallonia. Its members are the main producers and distributors of drinking water (95% of the production-distribution sector), all the approved waste-water treatment bodies, and the public water management company SPGE.

Tasks

- Ensuring consultation and information between its member companies;
- Representing and defending its members' interests in the various regional, federal, European, and international bodies;
- Communicating with the public at large and specialist groups;
- Conducting scientific and socio-economic studies for its members, policy-makers, and administrative departments;
- Working as a NITRAWAL partner to implement the Sustainable Nitrogen Management in Agriculture Programme ("PGDA" in French) in Wallonia.

Organizational structure

A Management Committee and a Board of Directors

Six Working Committees and a host of thematic working groups:
- Production
- Distribution
- Waste-water treatment
- Administration and Finance
- Communication and Public Relations
- Water, Industry, and Agriculture

Useful links

www.vmm.be: Water statistics in Flanders
www.aquaflanders.be: Benchmark of water producers-distributors in Flanders
www.belgaqua.be: Belgian water statistics
www.vewin.nl: Dutch water statistics
www.eureau.org: European water statistics

Vesdre water treatment plant at Eupen (SWDE)

Water production-distribution companies

A I E C
Association Intercommunale des Eaux du Condroz
www.eauxducondroz.be

A I E M
Association Intercommunale des Eaux de la Molignée
www.aiem.be

C I E S A C
Compagnie Intercommunale des Eaux de la Source de Les Avins - Groupe Clavier

C I L E
Compagnie Intercommunale Liégeoise des Eaux
www.cile.be

I D E A
Intercommunale de Développement Economique
et d'Aménagement de la Région Mons-Borinage-Centre
www.idea.be

I D E N
Intercommunale de Distribution d'eau de Nandrin-Tinlot et environs
www.iden-eau.be

I E C B W
Intercommunale des Eaux du Centre du Brabant Wallon
www.iecbw.be

I N A S E P
Intercommunale Namuroise de Services Publics
www.inasep.be

Régie des Eaux de Chimay
www.ville-de-chimay.be

Régie des Eaux de Saint-Vith (Stadtwerke St-Vith)
www.st.vith.be

Service Communal des Eaux de Burg-Reuland
www.burg-reuland.be

Service Communal des Eaux de Limbourg
www.ville-limbourg.be

Service communal des Eaux de Rochefort
www.rochefort.be

Service Communal des Eaux de Theux
www.theux.be

Service Communal des Eaux de Trois-Ponts
www.troisponts.be

Service Communal des Eaux de Waimes
www.waimes.be

S W D E
La société wallonne des eaux
www.swde.be

VIVAQUA
www.vivaqua.be

Approved water-treatment bodies

A I D E
Association Intercommunale pour le Démergement et l'Epuration des Communes de la Province de Liège
www.aide.be

A I V E
Association Intercommunale pour la Protection et la Valorisation de l'Environnement
www.aive.be

I B W
Intercommunale du Brabant Wallon
www.ibw.be

I D E A
Intercommunale de Développement Economique et d'Aménagement du Territoire de la Région Mons-Borinage-Centre
www.idea.be

I G R E T E C
Intercommunale pour la Gestion et la Réalisation d'Etudes Techniques et Economiques
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Waste-water treatment and catchment protection co-ordinating and financing body

Société Publique de Gestion de l'Eau
www.spge.be

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