Yarmouk **Water Company**

Focused on performance

VEOLIA WATER

Veolia Water has managed the Yarmouk Water Company since September 2011. In this time Veolia has been able, with the existing staff, to introduce significant changes to all departments of the company.

Yarmouk Water Company is now focused on a culture of performance. The transfer and customization of international knowledge and processes and the monitoring of key metrics mean that decisions are now driven by structured and detailed plans based on objective analysis.

A culture change which is in motion has already improved the understanding and dissemination of the key concepts of holistic water management. The company is now engineered to satisfy commercial objectives. This was made possible thanks to the transfer of private sector human resources policies. Responsibilities across the company for management and actions are now explicitly shared within the organisation. Empowered staff knows more clearly what they should do and what is expected of them in their daily work.

AN ORGANISATION REENGINEERED FOR PERFORMANCE

- Structured to focus on business needs
- Using world-class tools and methods
- Managing major projects
- With empowered employees able to implement actions rapidly

LEAD BY A TEAM OF PROFESSIONALS

- With knowledge in all the fields required
- Sharing the daily pressure of work with employees
- Delivering training to use the tools available

TAKING DECISIONS AS A TEAM, BASED ON STRUCTURED PLANS

- Key metrics monitored and information consolidated
- An objective analysis to prioritize options
- Detailed plans prepared based on knowledge and experience

UNDERPINNED BY A CULTURE CHANGE IN TERMS OF:

Developing together a knowledge of water management

Meeting commercial and financial objectives

Clearly defining the division of responsibilities

Teamwork

After a phase of analysis, overall organisation of the company was adjusted, with the underlying objective of improving performance. Departments were restructured to better reflect functions rather than the administrative area.

Formalised job descriptions

As part of an overall human resources strategy, the role of each employee was clarified and their job descriptions formalized on the basis of international practice; written processes for the key functions across the company were created and implemented. Transparent working practices and assignment developed greater trust between staff at all levels. They also allow staff to be more effective in their day-to-day work, knowing what to do and when to do it, without always having to refer to their superiors.

Training needs identified

A large majority of the 1,700 employees have been assessed against a specific standard job description. This was the opportunity to identify needs for training and also, whenever metrics are available, to determine personal objectives so that performance bonuses could be applied.

Incentives based on evaluation of staff

Quarterly incentives have been distributed across all departments according to the evaluation of staff by their managers, but with an obligation to differentiate the performance between employees (for example 5% of the staff will get no incentive while 80% of staff will get 70 JOD, 10% 100 JOD and 5% 120-140 JOD).

On a company-wide basis, new working practices were agreed, then communicated to all staff and implemented. In addition “internal bylaws” stipulating the expectations of the company in relation to its employees were established together with all necessary procedures to transfer staff from public to private sector. Most of the new procedures, for example those to improve time keeping (with the introduction of handprint machines), the safety and security of staff, recruitment, training assignments, staff evaluation and shift-work policy were designed and have been implemented totally or partially.

The net result of these reorganisations and clarification of roles was a significant improvement in communication between colleagues and a better coordination between the various departments. An internal supplier/client relationship now exists between many parts of the company.

Knowledge

As specialists in water management in nearly every part of the world, Veolia employees can draw upon experience from a wide variety of experts. More importantly, the Veolia managers embedded within Yarmouk Water Company have been practicing the water business for many years in a variety of countries.

Time spent by Veolia Senior Managers and Experts in Jordan from September 2011 to December 2012

	Man months
Permanent *7 key staff*	120
Permanent *3 other staff*	42
Specific tasks *30 Experts*	102
Total	**262**

The combined career experience of the permanent Key Staff team totals **137 years.**

The key management team of seven brought over 130 years of experience to Jordan. By combining this knowledge with the specialist input of its internal network of experts, Veolia was able to rapidly see where changes were needed and implement them without delay. This knowledge did not remain in the hands of Veolia; it was passed on to Yarmouk Water Company staff every day.

For the 15-month period up to the end of 2012, the total time invested by Veolia in applying and transferring its expertise to Yarmouk Water Company amounted to over 21 years.

This knowledge helped Veolia to set up the structure, systems, processes and tools that are now the backbone for the company. The on-the-job training is given to staff by managers and is put into practice every day.

Significant time and cost savings have been identified. For example, methodology about how to check and maintain pumps means that staff can now repair a pump that they might otherwise considered replacing.

One core subject, that should become a priority in the day-to-day plans at Yarmouk Water Company, relates to water resource management. With the level of water stress in the north of the country at such a critical level, it is essential that the staff and managers develop their knowledge of how water tables are being supplied and how to protect them.

Examples of topics covered by Veolia experts

- *Technical reporting matrix*
- *Pumps - sizing / return on investment*
- *Wells - capacity analysis / monitoring*
- *Water and wastewater treatment*
- *Electromechanical diagnosis*
- *Human resources reporting and strategy*
- *Job descriptions*
- *Recruitment procedure and forms*
- *Training procedure and reports*
- *Health and safety*
- *Employee handbook*
- *Compensation and Benefits*
- *Cash Management Policies*
- *Collection Revenues by Point of Payment*
- *Financial and Accounting Policy*
- *Procurement Policy and Procedure*
- *Accounting job descriptions and procedures*
- *Cash Collection & Deposit Procedure*
- *Customer Service Procedures*
- *Transport and vehicle strategy*
- *Water tanker coupon policy*
- *House connection strategy*
- *Hydraulic modelling*
- *Hydraulic engineering*
- *GIS expertise*
- *Tendering Expertise*

Service

Yarmouk Water Company customers have experienced one of the major transformations that Veolia and the YWC staff have achieved: the invoicing and payment of their water bill.

Supplying safe water is of course the first priority. However, ensuring that the water supplied is paid for is the only way to ensure the sustainable future of water supply at a fair price.

Accurate customer billing

Within just 12 months of taking over operation of Yarmouk Water Company a series of major changes were made, to provide customers with more accurate, printed documents and reassure them of the accuracy of the price they were paying.

Hand-written records manually entered and then reconciled between a series of disconnected IT systems have been replaced by hand-held units that record the meter readings and automatically synchronize at the end of each day with the financial system. When a customer pays, the systems immediately credits the account and a printed receipt guarantees the customer that the payment has been made. All operations from measuring customers' water consumption to reconciling it with invoicing and payment are integrated into one unified system.

In addition, by analysing data from each hand-held unit, it is possible to reorganize meter reading and significantly increase productivity. This in turn meant that commercial staff could be assigned to other cash-generating tasks such as debt recovery and illegal connections.

PREVIOUS SYSTEM	NEW SYSTEM
Meter reading noted manually	Water meters read by new hand-held unit
Customer lines up at the agency for a hand-written note	Invoices to customers issued at their home (door-step billing)
Hand-written payment receipt issued to customer	Printed receipt issued to customer upon payment

Customer experience of invoicing and payment

Back office and front office functions in commercial agencies have been clearly separated to improve productivity and customer service.

Key indicators of improvements in commercial activities

	September 2011	December 2012	Improvement
Water meters read	74.9%	98.5%	31.5%
Incorrect invoices issued	Estimate: over 50%	Less than 1%	98%
Customer invoices issued at home address	0	88%	88%
Outstanding invoices to government departments	2.1 million JD	1.4 million JD	33.3%
Total revenue	**20 million JD**	**22 million JD**	**10.0%**

Less than 1% of invoices incorrect

98.5% of meters read

Efficiency

As an organisation reengineered for performance, Yarmouk Water Company is now more reactive. Introducing new methods and working practices in all departments was a major contribution and has already produced significant, immediate and long-term savings.

Preventive maintenance introduced

The approach to maintenance has changed from being reactive (repairing breakages) to proactive through a strategy of preventive maintenance. This means that operations staff now checks all major equipment on a regular and predetermined basis. Monitoring and analysis of data tells managers what should be checked and when. By cleaning or checking equipment its working life can be prolonged, a minor problem corrected in time, or a part replaced without any interruption to service. This change includes carrying a bigger stock of new parts so that when replacements are needed they are immediately available.

Major software programs used

- **BMFO** *Bulk Meter Flow and Operations open source software*
- **CC** *Call Centre Management System*
- **CDM** *Cash Desk Module*
- **CMMS** *Computerized Maintenance Management System*
- **COBOSS** *Cobol based billing system*
- **DCMMS** *Dorsch Consult Maintenance Management System*
- **FAS** *Financial Accounting System*
- **GIS** *Geographic Information System*
- **GPS** *GPS Tracking Software*
- **LIMS** *Laboratory Information Management System*
- **HHU** *Hand-held Unit Software*
- **WOS** *Water Operations System*
- **WMOS** *Wells Management Operational System*

Purchasing processes now also contribute to saving time and money; framework contracts have been introduced to plan purchases over a period of several months. Suppliers are asked to plan supplies of units at predetermined intervals throughout the year. Ordering a greater quantity results in lower prices and suppliers can plan deliveries to suit their production plan.

Leakage detection methods have been improved, maintenance costs reduced and service interruptions reduced. Rather than waiting for leakages to become visible at the surface and repairing them, operational teams now use modern techniques to search for leaks underground. Small invisible leakages, if left undetected for a long period, will result in a loss of water far greater than a large visible leak at the surface.

Within the organisation of Yarmouk Water Company other important initiatives to improve the effectiveness of the company include:

- Widespread introduction of emails for internal communications, as well as paperless document management systems, to replace oral conversations, internal notes and hard paper copies of correspondences;
- Financial management improvements with the design and implementation of simplified cost centres;
- Vehicle tracking devices with a Web application to follow the route and usage of each vehicle on-screen.

The Information Technology Department, in addition to supporting the implementation, upgrades and maintenance of the various software packages, has also ensured the conformity, safety and security of the key computer hardware. The network linking all the systems between the various locations has also been strengthened through the introduction of microwave technology.

No recruitment
No staff reduction
No additional operational investment

All the above improvements in the efficiency of Yarmouk Water Company and the associated cost savings have been achieved with no additional recruitment, no staff reduction, no additional operational investment and, in most cases, by upgrading existing tools.

Measuring and monitoring

One of the keys to the cultural changes implemented in Yarmouk Water Company is the regular reporting and constant monitoring of a multitude of parameters. These reports have been designed, and are now implemented by YWC staff, in each activity to guide actions every day, to organize and plan and to track the success of new initiatives based on quantifiable data.

New or existing tools have been introduced or reconfigured so that this monitoring principle can be applied to water operations and maintenance management, customer billing and invoicing, customer relationship management (CRM), financial control and accounting, human resources reporting and throughout the company.

Non-revenue water (NRW)
Measuring and monitoring is essential to controlling the level of non-revenue water – water produced but not invoiced. An illegal usage programme has been designed as part of the NRW Reduction Plan.

Non-revenue water reduced

Geographical Information System (GIS)
A GIS system, when integrated into operational databases, provides managers with information on water networks and customer location represented on a detailed map. A complete review of the GIS organization, data-model, database and work processes has been completed. Customers with connections but no billing can now be immediately identified.

Customers easily identified with GIS data

Call centre
Call centre organization, processes and staffing have been improved. The DCMMS software used to record and manage customer questions and requests has been reactivated to serve as a tool to link operations with commercial actions. Customer information is taken by phone and the required work order is sent to Operations automatically. Once the work is carried out information is updated in the system. Follow-up of complaints can be measured.

Clear call centre protocol

Other cost savings
Other savings were achieved thanks to a variety of programmes. An example is the Transportation Strategy which included the fitting of GPS trackers, with a web application recording all vehicle movements, to all company cars to ensure they were being used for business purposes only. Distribution of fuel coupons has been restructured; this has already generated a 30% saving on fuel costs for 2012. A fuel smart card project is in process and, together with GPS tracking, further saving on transportation can be achieved.

GPS trackers have reduced fuel costs by 30%

Examples of cost savings for 2012

- *Fuel costs for company vehicles* **200,000 JOD**
- *Electricity cost* **652,000 JOD**
- *Chlorine purchases* **65,000 JOD**
- *Telephone expenses* **30,000 JOD**

Incentive Performance Indicators

	Minimum Performance Target	Maximum Performance Target	Achieved
IPI1 - AWS = Annual Water Sales (m^3/a)	40.20	42.33	**41.50**
IPI4 - OCS = Operational Cash Surplus (JOD million)	3.97	4.63	**7.52**

Sourcing funding

In addition to its role in overseeing and managing Yarmouk Water Company on a daily basis, Veolia has also helped the Water Authority of Jordan transfer responsibilities to Yarmouk Water Company for delivering on-going projects, putting in place a tool for planning investments and for securing funds to ensure they are viable.

A rational, pragmatic and organised approach to major projects

More than 500 projects have been identified across the company. They are documented, registered and classified by priority and cost/benefit analysis, to make up the mid-term investment plan. 123 million JOD of identified investment has been found, financed and managed. This database is live and permanently updated. It is used to help investment decisions.

Humanitarian assistance

Immediate response to humanitarian requests

The continuing crisis of the growing number of refugees from Syria has put enormous pressure on resources in the region. Yarmouk Water Company has been requested by various humanitarian organisations including UNHCR and UNICEF to provide emergency water supply infrastructure to the major refugee settlements.

The improvements made in the organisation of Yarmouk Water Company have ensured that an immediate response could be made to these requests, to bring materials and a qualified workforce into action.

The future

The fundamentals are in place

The fundamentals are now in place to ensure that Yarmouk Water Company can continue to develop.

Non-revenue water still accounts for around 50% of water produced; there is a major opportunity for the company to invest in the improvements required and see substantial revenue increases. A NRW plan has been prepared for this purpose.

Also, with half of the network made up of small two or four inch pipes there are major distribution issues every summer. Major investments are required to improve this situation.

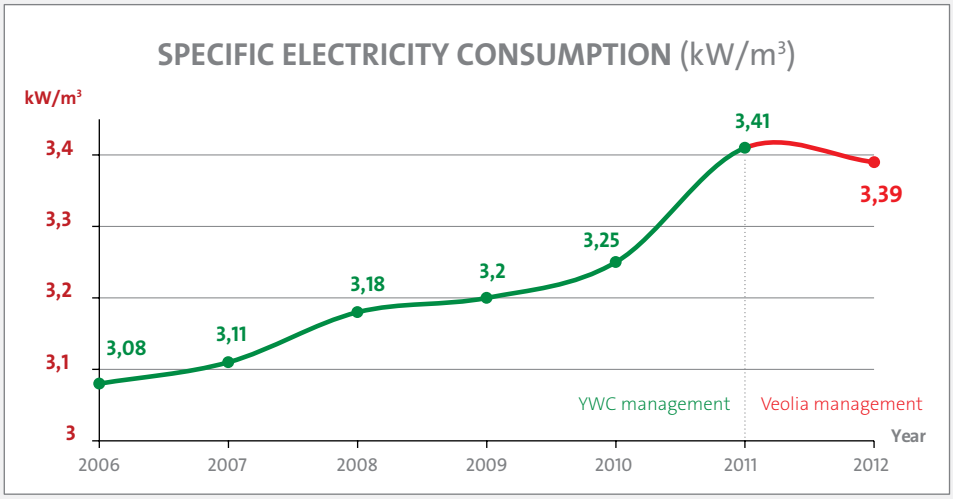
Yarmouk Water Company now has an operational structure to manage the needs of its customers proactively; monitoring and reporting systems that bring constant information to plan for the future; new working practices offering greater transparency and efficiency; a detailed investment plan and identified funding; and the growing professionalism of staff.

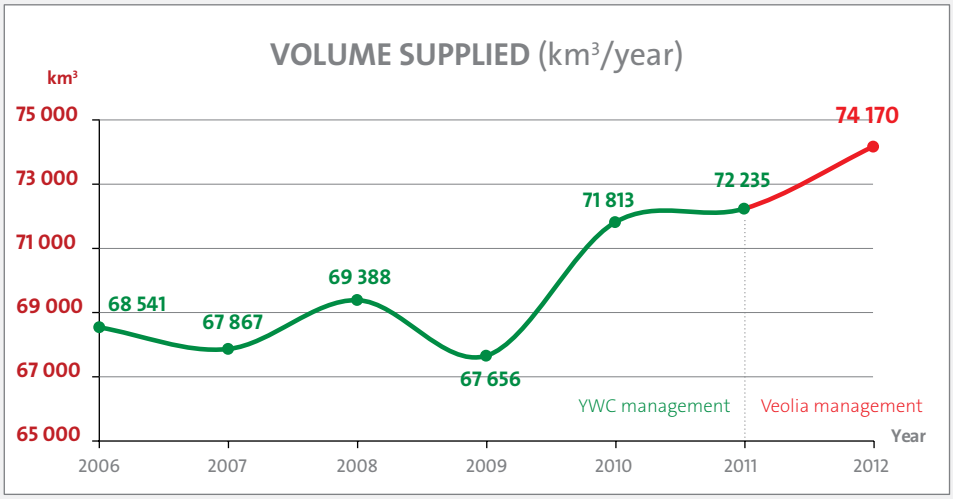
It is essential to capitalize on this new spirit and continue to use the tools and processes now in place. New projects can then be implemented to build on what now exists; many of these potential new projects have already been analysed and plans are awaiting approval.

Agencies funding major projects

AFD *- French Agency for Development*
EBRD *- European Bank for Reconstruction and Development*
EIB *- European Investment Bank*
GIZ *- German Agency for International Cooperation*
IFC *- International Financing Company*
IRD *- International Relief and Development*
KfW *- Kreditanstalt für Wiederaufbau German government-owned development bank*
Oxfam *- UK-based NGO*
SDC *- Swiss Agency for Development and Cooperation*
UNCC *- United Nations Compensation Commission*
UNHCR *- United Nations High Commissioner for Refugees*
UNICEF *- United Nations International Children's Emergency Fund*
USAID *- United States Agency for International Development*
French Ministry of Finance
Spanish Government
Kuwaiti and Saudi funds

EFFICIENCY – *More water using less energy*

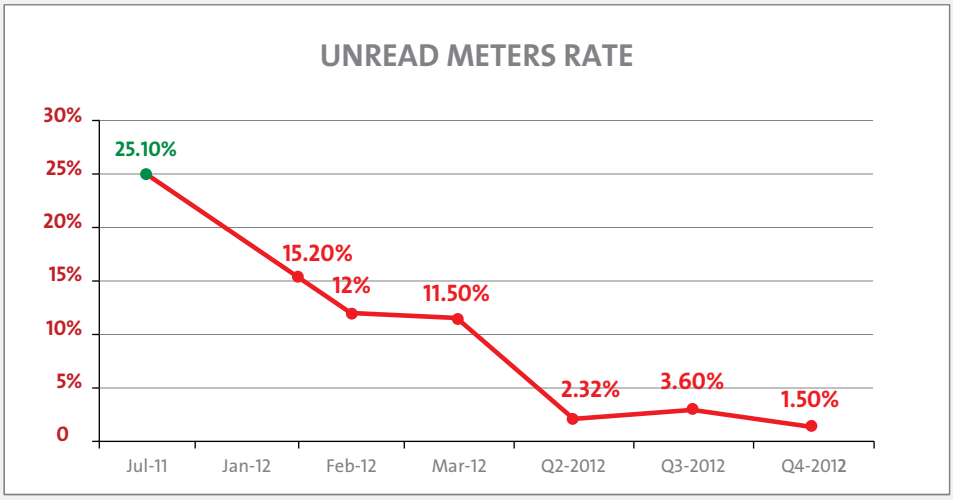




By comparing the management of water production and distribution on one hand, and the electricity consumed on the other we can see the following results for 2012:

- water supplied increased by **2.68%**
- power consumed reduced by **0.59%**

SERVICE – *New meter reading process*

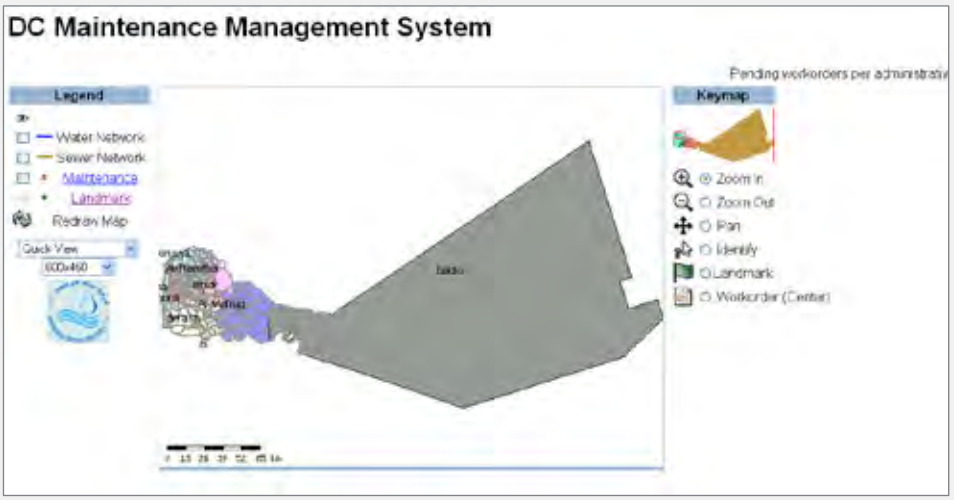


The introduction of hand-held units meant that more meters could be read and accurate readings taken. Virtually all meters are now read.

EFFICIENCY – *Operations and maintenance uses recognized management software*

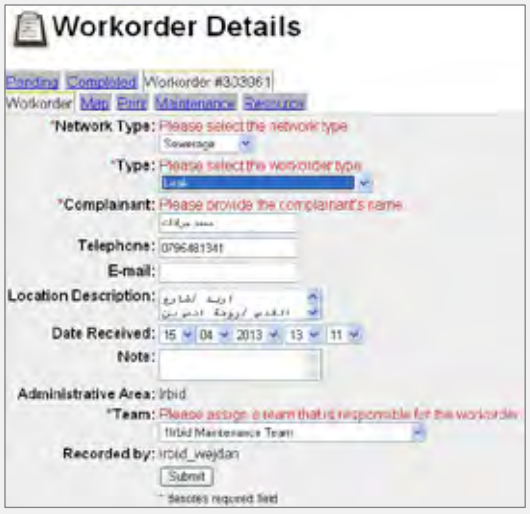
Water Operations System (WOS) is a software application that collects, processes, maintains all data and information related to water. It generates technical reports in various outputs to support decision-making.

- Manages all properties involved in water service operation.
- Monitors and records water service cycle, from production to end-customer, all produced water is monitored.
- Monitors water networks, lines and connections to help maintain a healthy network at a lower cost.
- Observes water quality in conjunction with YWC labs.
- Tracks costs throughout the water service cycle: fuel, electricity, and fleet.
- Observes the performance of pumps and network.
- Monitors water availability to end-customer.



MONITORING – *Call centre software records and manages customer requests*

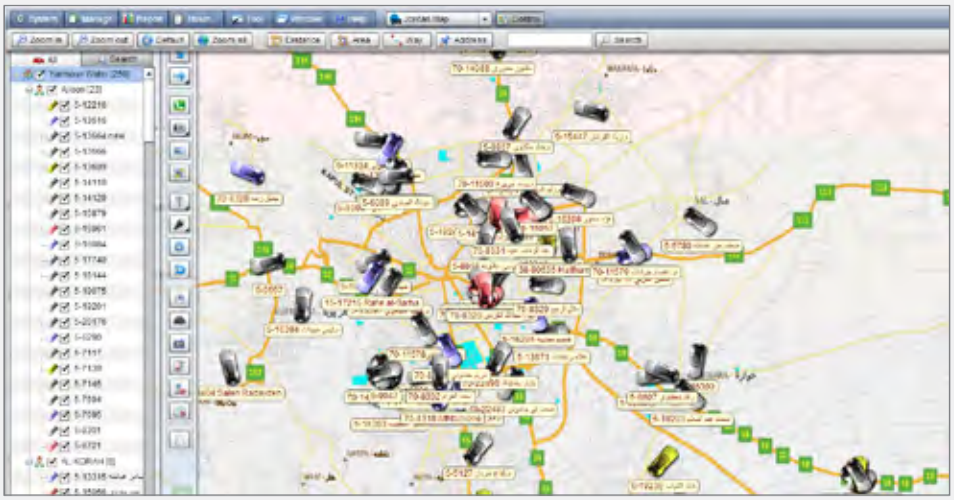
The DCMMS software links operations with commercial actions. Customer information taken by phone is sent to Operations as a work order. Once the work is carried out information is updated in the system.



MEASURING AND MONITORING
Geographical Information Systems

The GIS system provides managers with information on water networks and customer location as represented on a detailed map. Customers with no billing, with sewage connection but no water connection or customers that are in an incorrect category can be immediately identified by comparing GIS maps with Google Maps. Work orders are prepared and passed on to field staff to take action with customers.

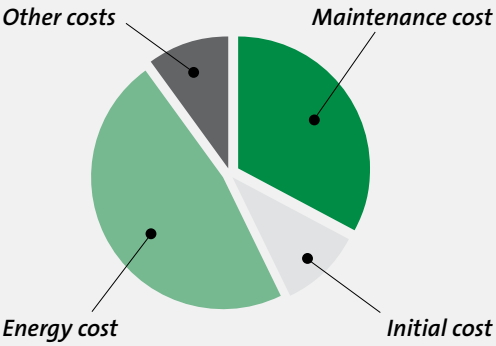
GPS software to track company vehicles

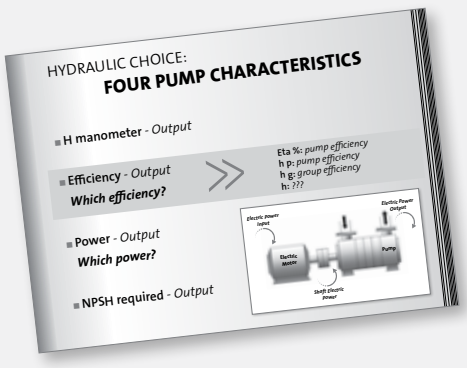


By fitting GPS trackers to close to 300 YWC vehicles and linking this to a web application, vehicle movements are recorded and major savings on fuel costs achieved.

KNOWLEDGE – *Making the right choices*

Life Cycle Cost





Choosing the right equipment and understanding the implications of these choices is essential to efficient management of a water network. For example, the operational efficiency of a pump will depend on finding the right balance between a variety of technical requirements. This is an extract from a training manual used by Veolia experts.

Veolia Water, is a leading global water and wastewater technology company and provider of a full range of services including engineering, project management, design-build, and maintenance services.

Veolia Water provides water service to 100 million people and wastewater service to 71 million. Its 2012 revenue amounted to 12.1 billion euros.

Yarmouk Water Company, formerly Northern Governates of Water Authority (NGWA) is the water and wastewater concession serving 1.6 million inhabitants in Irbid, Jerash, Ajloun and Mafraq regions in the north of Jordan. The company was created in January 2011, is 100% owned by Water Authority Jordan and has 1,700 employees.

VEOLIA
WATER

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