



intelligence

for energy and utilities

from the sensor to the CEO dashboard

Smart energy. Powering progress

Atos
Worldgrid

Welcome to Atos Worldgrid

These are exciting and challenging times for any organization geared to harnessing the power of the natural resources that society needs. There is, quite rightly, an increased focus on environmental sustainability across society. This is impacting how we source, deliver and consume oil, gas, electricity and water. At the same time, the companies who provide us with these essential resources face both stiffer international competition and a growing body of regulation.

The ability to create up-to-the-minute intelligence right across the chain of operations is fast becoming a critical differentiator. It is what allows you to optimize current processes. It is what allows you to rapidly build meaningful scenarios.

It's what allows you to innovate for a sustainable future - and it is only possible if you are able to manage real-time industrial data flows and business information systems.

It is precisely these requirements which have led us to concentrate our resources in Atos Worldgrid. Expertise is at a premium, and our team is carefully positioned to deliver immediate value in this critical area.

Jérôme de Parscau du Plessix
CEO, Atos Worldgrid

Leading the way



Atos Worldgrid snapshot

- ▶ Established as independent company within the Atos Group in July 2010
- ▶ Over 1,500 specialists helping oil and gas, power and water companies lead the way with IT
- ▶ End-to-end intelligence in real-time – smart from the sensor to the CEO dashboard
- ▶ Bridging the gap between industrial control and business systems
- ▶ Global reach with centers of excellence in Europe, China, India and Latin America
- ▶ Building on over 30 years’ highly specialized industry expertise
- ▶ Respected client portfolio including EDF, BP, CPFL Energia, GDFSuez, EPZ, Fortia, Gasterra, Gasunie, Red Electrica, Nuon, Repsol, Total and Veolia.

ERDF - Managing the largest smart metering project in the world. The Atos Worldgrid solution has been delivered for 35 million smart meters in France for energy-saving and service improvement to both domestic and business users.

Differences and similarities

Oil and gas. Electricity. Water. The expertise and resources needed to produce and manage these resources are highly specialized. Each is subject to distinct and demanding regulation.

Further differences exist both within sub-sectors and from geography to geography. Reach and scope change too: some players in oil and gas are pre-eminent examples of global businesses while in water we find organizations operating at a regional or even municipal level. But for a moment, let's put difference aside, and look instead at what these very special organizations have in common:

- ▶ Firstly, all these players provide the resources which allow society to function. Without fuel, power and water - there is nothing
- ▶ Secondly, all these players work in a reality of extremes - extremes of heat and cold, across oceans and deserts, and with extremes of engineering, from rigs and trans-continental pipelines to nuclear reactors and water purification plants
- ▶ Thirdly, they must all be able to deliver without interruption and in complete safety, irrespective of changing levels of demand and market conditions.

Workers in these sectors face, everyday challenges that most people simply never need to think about.

Standard bearers for sustainability

These essential industries also need to take the lead in environmental sustainability. While every member of society shares the responsibility, it's the energy and utility companies that remain center stage. Citizens and shareholders alike expect them to minimize the environmental impact of their operations. They are also expected to take the lead in innovation, developing the means and materials to allow society to live with reduced environmental impact.

Cost, price and profit

Energy and utility companies have historically been a safe bet for investors. Today, this is less sure. Statutory or market-imposed caps, coupled with dramatic fluctuations in consumption, mean that no profits are easy profits. Add to this the specific pressures faced by each sub-sector, and two critical factors in achieving continued profitability stand out:

- ▶ Driving out cost and increasing efficiency across the current chain of operations
- ▶ Identifying and acting on areas of differentiating innovation.

Both of these are in turn colored by two areas of societal, environmental and economic turbulence:

- ▶ Globalization of opportunity and competition - (although this is nothing new for oil and gas in terms of exploration, production and distribution)
- ▶ Volatility in customer relationships - in both wholesale and retail engagement, the shift towards increased choice of supply for commodity product makes the character of client relationships ever more critical.



Different sectors - different specifics

Despite the powerful shared pressures of process and resource optimization, cost-reduction and environmental sustainability, each sector faces its own specific challenges. Below are just a few of them - and again, each of these can only be addressed by ensuring that information joins up:

Oil

- ▶ No easy oil - challenge of extraction increases cost and risk
- ▶ Competition and differentiation - boundaries blur between International and National Oil Companies
- ▶ Skills shortages and knowledge premium - challenge on achieving/maintaining edge.

Gas

- ▶ Transport through transit countries in the face of geo-political volatility
- ▶ Private sector opportunity squeezed into storage, transport and distribution
- ▶ Exploiting LNG opportunities with shared energy companies.

Power

- ▶ Adopting green energy sources profitably
- ▶ Maintaining aging nuclear and non-nuclear production safely and profitably
- ▶ Renewing aging infrastructure to meet developments in contemporary demand and practice - such as electric vehicles and distributed generation.

Water

- ▶ Managing aging infrastructure
- ▶ Innovating in an industry with traditionally low R&D
- ▶ Establishing and implementing meaningful performance metrics.



One shared imperative

In the light of these pressures, one shared imperative jumps off the page. All companies competing in oil, gas, power and water need a timely flow of real-time intelligence to optimize resource allocation, process execution and the pursuit of opportunity. The quality of this intelligence depends on the ability to manage in real-time industrial data and processes.

The decision-making powers in all these sectors understand engineering.

They understand that science is built on a combined platform of intelligence, imagination, expertise and experience. The ability to harness accurate and timely data is a pre-requisite for successful innovation and sustainability.

These complex industries rely on multiple specialties and on multiple data sub-systems. The meaningful interchange of data in real-time across previously independent systems and processes is becoming the new competitive battleground.

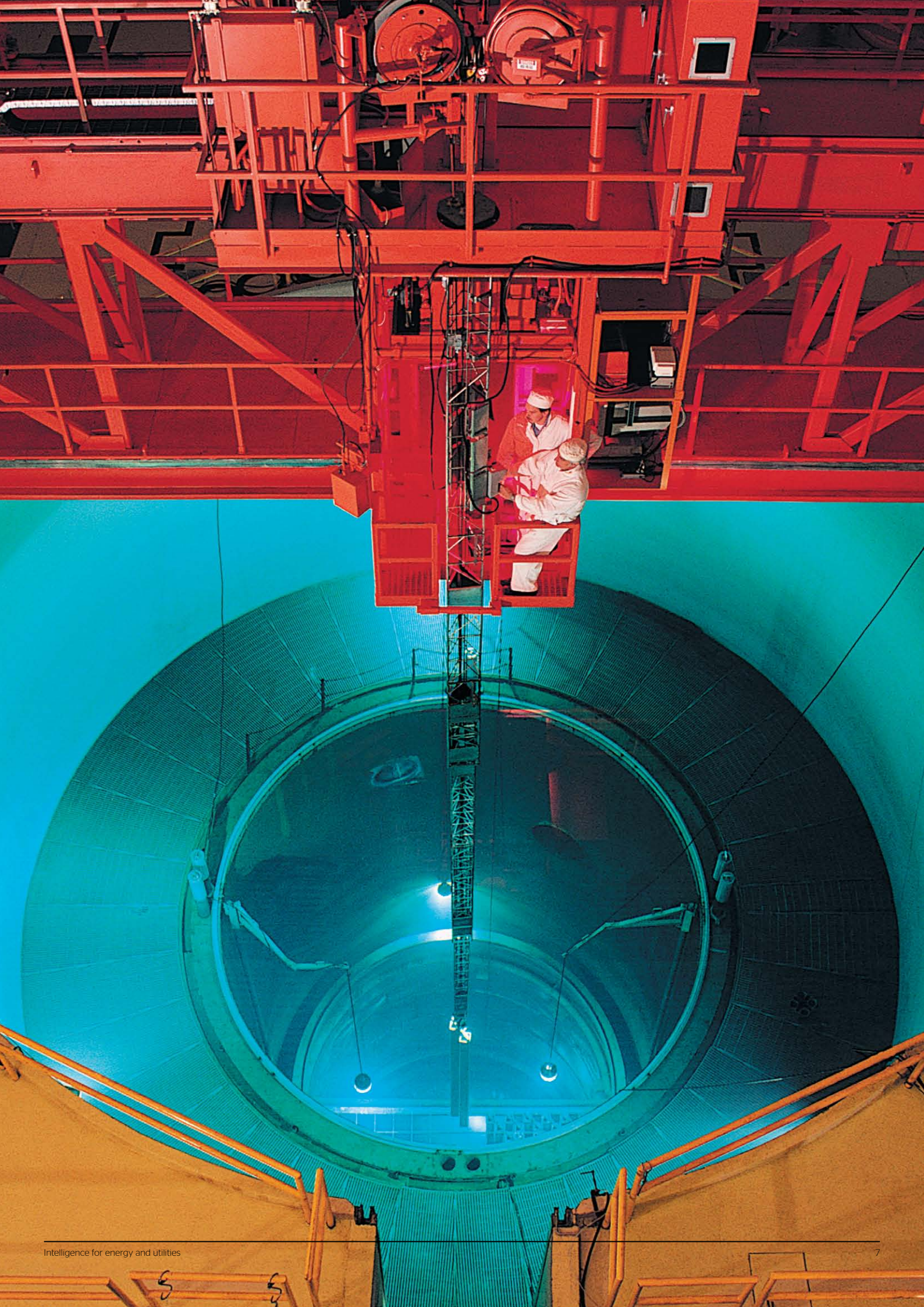
And in this, Atos Worldgrid can equip you for sustainable success.

Real-time information exchange between business sub-systems delivers dramatic results. Consider this example. This is from a rig, but whatever your sector, you will recognize parallels.

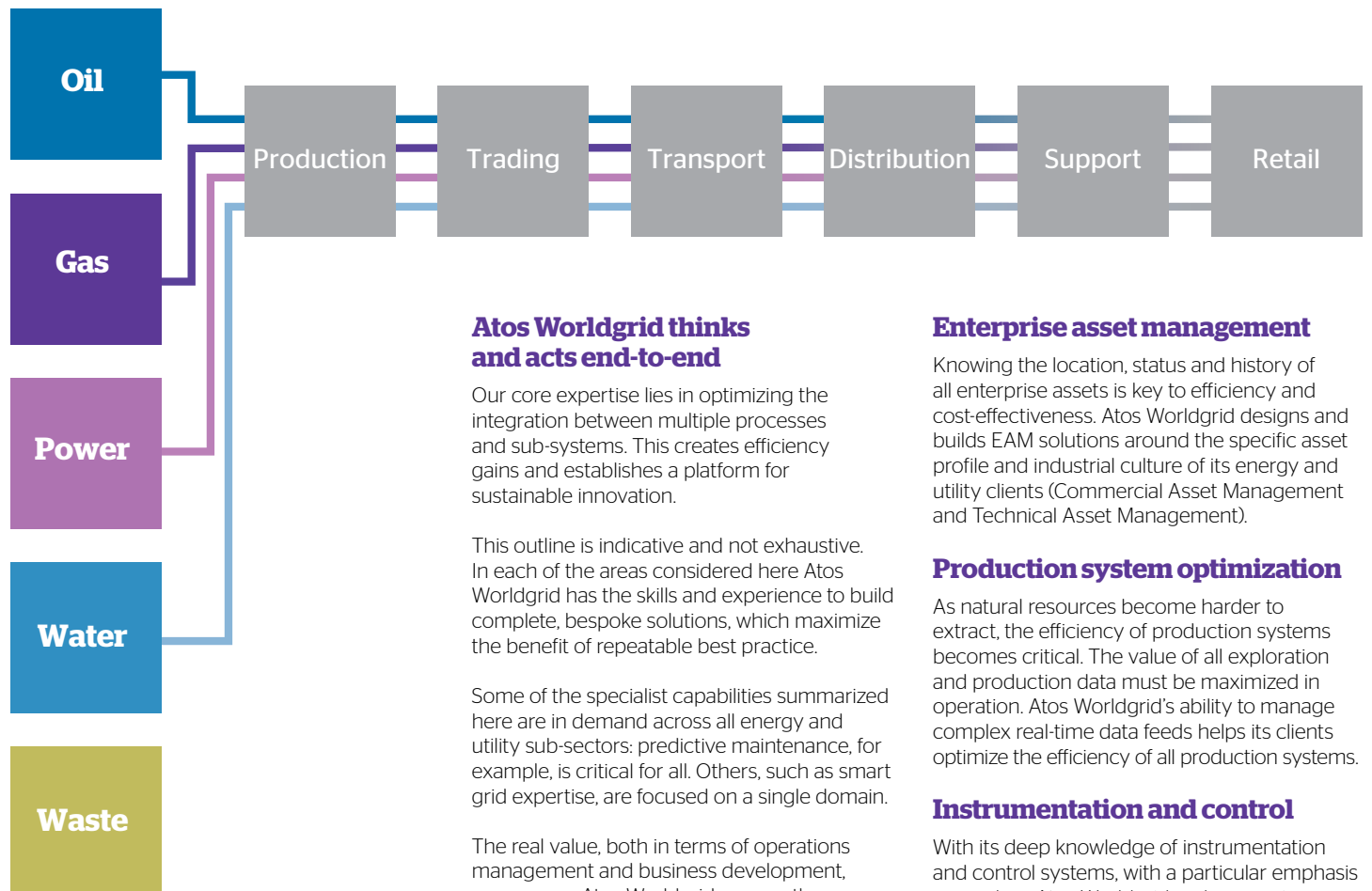
- ▶ **A sensor indicates an increase in heat in a bearing**
- ▶ **Real-time data feeds to the Remote Maintenance process invoke bypass for uninterrupted operation, and inspection and intervention**
- ▶ **Resource Management uses GIS and HR systems to identify nearest available expertise**
- ▶ **Logistics ensures that spares, helicopter, and engineer accommodation on rig are ready**
- ▶ **Documentation and change management activated ready for fix.**

This degree of real-time data integration not only makes it possible to co-ordinate problem resolution in minutes rather than days. Predictive in nature, it ensures continuity and minimizes risk.

SEDIF/VEOLIA - Constant, consistent control and global optimization in water management. For more than seven years, water management in the Paris sub-metropolitan area has been managed 24/7, reducing production costs, minimizing staff overhead, and providing accurate predictive reporting.



Atos Worldgrid in action: control, innovate, sustain



Atos Worldgrid thinks and acts end-to-end

Our core expertise lies in optimizing the integration between multiple processes and sub-systems. This creates efficiency gains and establishes a platform for sustainable innovation.

This outline is indicative and not exhaustive. In each of the areas considered here Atos Worldgrid has the skills and experience to build complete, bespoke solutions, which maximize the benefit of repeatable best practice.

Some of the specialist capabilities summarized here are in demand across all energy and utility sub-sectors: predictive maintenance, for example, is critical for all. Others, such as smart grid expertise, are focused on a single domain.

The real value, both in terms of operations management and business development, emerges as Atos Worldgrid weaves the many disparate real-time data sources into a single, actionable business view.

Security, safety and optimization

Security, safety and optimization run as a common thread through all Atos Worldgrid engagements. No energy or utility company can compromise on security or safety. The ability to design safety and security into all processes is critical and Atos Worldgrid makes this possible through effective, cross-disciplinary systems integration.

Optimization in oil and gas, power and water demands that processes and sub-systems are integrated in real-time. Atos Worldgrid makes this the reality across the organization. We keep the information flow working for everything from the systems used by tanker drivers and the traders to the executive dashboards.

Enterprise asset management

Knowing the location, status and history of all enterprise assets is key to efficiency and cost-effectiveness. Atos Worldgrid designs and builds EAM solutions around the specific asset profile and industrial culture of its energy and utility clients (Commercial Asset Management and Technical Asset Management).

Production system optimization

As natural resources become harder to extract, the efficiency of production systems becomes critical. The value of all exploration and production data must be maximized in operation. Atos Worldgrid's ability to manage complex real-time data feeds helps its clients optimize the efficiency of all production systems.

Instrumentation and control

With its deep knowledge of instrumentation and control systems, with a particular emphasis on nuclear, Atos Worldgrid makes a serious contribution to safe and smooth operational performance and resource optimization.

Simulation

Meaningful simulation is the key to all supply, planning and development. The quality of simulation in all energy and utility sub-sectors is strictly related to the accuracy, breadth and timeliness of multiple data-feeds. Atos Worldgrid makes effective simulation integral to all control and management systems. This becomes an essential resource in both training and contingency planning.

Predictive maintenance

Atos Worldgrid integrates data from specialized high-performance sensors and supervisory and control systems to keep entire processes installation in real-time view. This Condition Based Monitoring helps anticipate and resolve issues before they become problems in all energy and utility sub-sectors. Atos Worldgrid analyses also data offline, using a rules based expert system, to predict a need for maintenance.

GIS integration

Being able to pinpoint assets, events and requirements in space and time is critical across all energy and utility operations. Atos Worldgrid ensures that GIS and associated operations sub-systems are synchronized in real-time.

Smart grid

Power companies must be able to optimize supply and demand with greater intelligence than ever before. By integrating data from multiple generation systems through to individual sources of consumption, resource use is optimized. Atos Worldgrid is expert in smart grid, and ensures that patterns of consumption, transmission, distribution and generation feed the innovation blueprint.

Smart metering

Smart metering is not just about exact reading of meters, it is also about automating interventions and meters management. Advanced Meter Management will become the key to microcontrol of resources at low-voltage network level, adding customer value and reducing environmental impact. Smart meter rollout is controlled through Meter Rollout Automation (MRA). This critical stage dramatically increasing the performance of teams putting meters in place and reducing the cost of large-scale rollouts. It's key to mixed-source models too. Atos Worldgrid is a leading player in smart metering.

Quality monitoring and composition rating

Constant monitoring is critical to safety and performance. Atos Worldgrid delivers the solutions needed to control water purity and gas composition, clearly indicating deviations from acceptable standards and aiding these to be rectified promptly.

eCars and eMobility

Particularly in urban spaces, pressure is on to provide cars and personal transport solutions that are sustainable and practical. Atos' eCar and eMobility solutions help you to migrate fleets of cars to electric vehicles, manage the lifecycle of vehicles, batteries and other components and integrate with charging stations and billing. We are working to deliver Vehicle-to-Grid (V2G) in which electric vehicles can deliver excess power back into the grid.

Mobile workforce management

Your manpower is skilled, risks are high and change is rapid. Ensuring the right people are in the right place at the right time has never been more important for productivity. Atos Workforce Management uses solutions from SAP, Clicksoftware and Syclo to help you improve planning, control fieldwork effectively and create seamless workflow (and robust connection) between back office and field staff.

Waste management

Atos' operational components cover waste tracking, vehicles, fleet management, GIS and collections - the widest range available currently - and can be used to reduce waste management costs by 20%.

Total - optimizing well performance

We integrate real-time performance data from multiple well sub-systems. Intelligent alarms indicate production shortfall, allowing timely corrective action and production optimization.

Capacity planning and scheduling

Skyrocketing demand and intense regulation means that power generation capacity planning is vital. Atos' Planning and Scheduling combines the data inputs from system loading, thermal and hydro capacity. This helps you manage reserves, align capacity with requirements and get ahead of price changes. This can reduce fuel consumption by around 0.5%.

Fuel planning

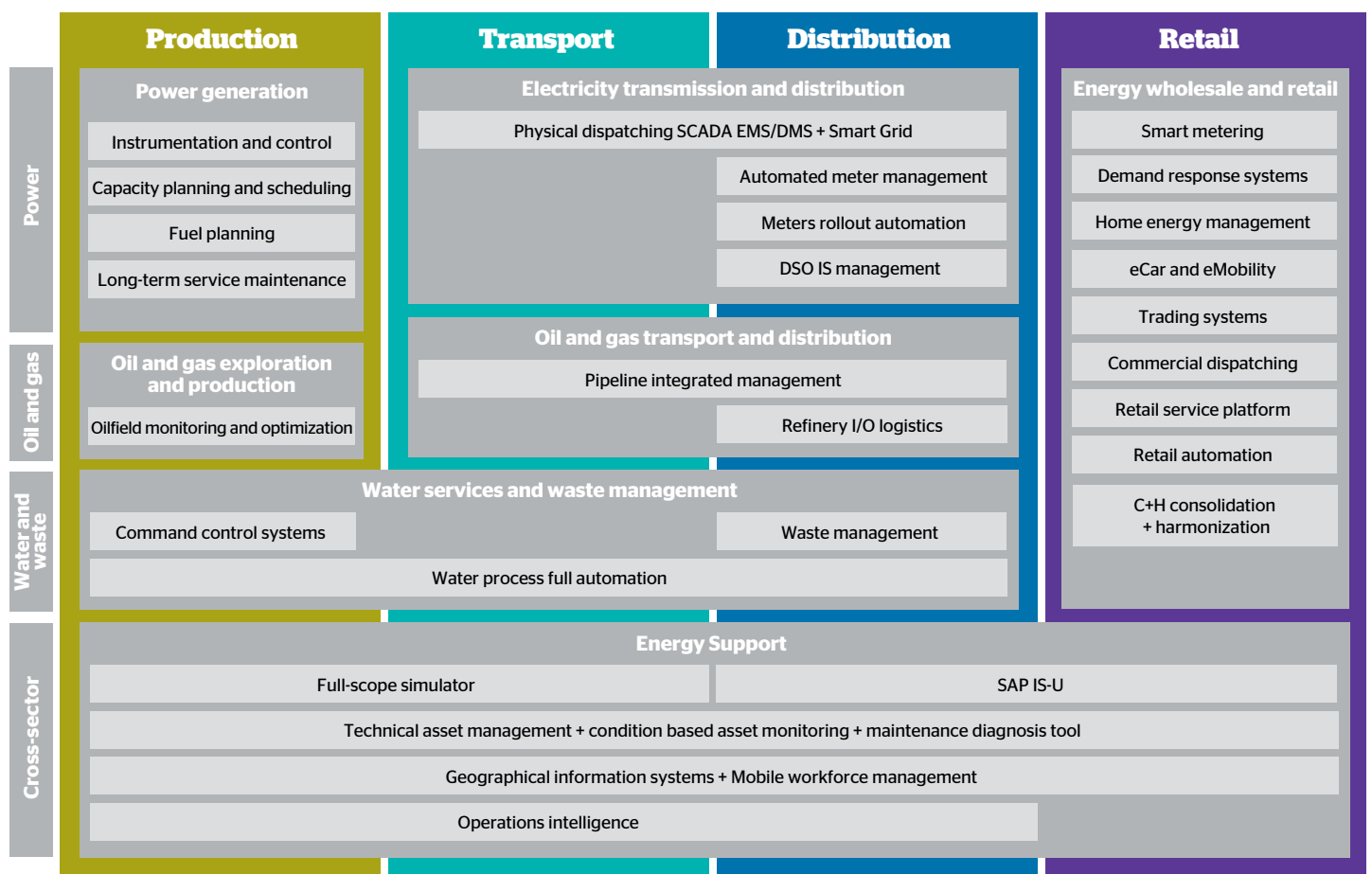
Our Fuel Planning solution complements this, giving power generators a complete, centralized way to monitor and plan fuel procurement. You can reduce manual input steps and processing time, share data and set validation controls more effectively. Fuel and CO₂ certificate costs can be reduced by about 2% using the Fuel Planning solution.

CPFL Energia - automating key processes with Geographic Information Systems (GIS)

By integrating GIS and Technical Systems from 4 different vendors, Brazilian CPFL Energia optimized its operational efficiency. We implement, support and maintain this high complexity solution with a 24x7 service level.

Atos Worldgrid: capabilities and approaches

Atos Worldgrid energy and utility specialists are ready to help you optimize the integration of real-time data from production and distribution systems right through to smart metering and smart CRM.



We use a mix of off-the-shelf and bespoke solutions (the high reliance on heritage and bespoke systems within the energy and utility sectors makes customization the norm).

We maximize the efficiency gained by applying best practice. To this end, we are committed to open innovation within the limits of client confidentiality.

Atos Worldgrid is already a pole of world expertise. Although it is a recently formed company, it builds on over 30 years of demonstrable expertise.

The scenarios illustrated on the previous pages give a good idea of areas of Atos Worldgrid expertise. The table provides a more itemized display of the company's component skills.

Fortia - Enabling Fortia* to negotiate for 15 TWh of power annually. Atos Worldgrid solutions covering key commercial processes deliver significant cost savings, and increase the strength of the consortium negotiating position.

*Spanish consortium of 18 industrial companies.

Atos Worldgrid and Atos

Atos Worldgrid and its mother company Atos complement each other for your benefit:

- ▶ Atos Worldgrid specialists are focused on project-based engagements with industry-specific focus.
- ▶ Their activity is, in turn, coordinated with the long-term provision of generic IT and business services provided by Atos.

This combination brings three clear advantages to our clients, who gain:

- ▶ Direct access to a concentrated pool of premium industry expertise
- ▶ The certainty and scale that comes from working with a multi-billion-Euro, global IT services leader that can draw on the expertise of tens of thousands of insightful people
- ▶ The opportunity to exploit top-tier Business Process Outsourcing services, specifically in billing and loyalty management

This distinctive aggregation of skills and resources positions the combination of Atos Worldgrid and Atos to take the lead on the most demanding, long-term engagements. We will keep a keen eye on the obligation to fulfill fixed term, end-to-end contract engagements on time and on budget. At the same time, we will seek to establish service relationships, in which value and innovation can be sustained to mutual benefit in the long-term.

“For energy and utility companies, sustainability is not simply an environmental issue. As well as minimizing environmental impact, your business must be socially and economically sustainable too.”

Meet the team

As Atos Worldgrid gathers momentum, our ability to replicate solutions successfully across sectors and geographical boundaries will increase. This is already happening. Our role, for example, as the prime contractor in the world's number one smart metering project (from initial 300 000 smart meters up to 35 million), is a good indication of this ambition.

The combination of specialist industry knowledge with exceptional IT and process skills remains the key to our proposition. We are a magnet for the best brains in the business, ensuring that our skills are ready to serve our clients with flair and with clinical efficiency.

Our vision is clear. We are committed to turning the power of real-time, integrated information to the benefit of our clients in oil and gas, power and water. This ability to optimize the relationships between process and sub-systems across the value chain enables you to:

- ▶ **Control** - creating a reliable foundation for well-substantiated action and development
- ▶ **Innovate** - driving efficiency and optimization in existing operations and seeking out new opportunities
- ▶ **Sustain** - keeping in tune with changes in society, with maximum respect for the environment and in a manner which leads to continued business wellbeing.

We are a growing company. We are eager to engage with you, helping identify priorities for process optimization, and preparing a program for ongoing integration across the value chain. We relish practical challenge. We are keen to reveal the new insights, which will remain latent within your business until we put our integration skills to the test.

Next steps

Open dialogue is always the place to start. We are always happy to welcome guests to our centers of excellence for energy and utilities, where you will be invited to attend to a real working session in smart metering, in real-time instrumentation and control, or the very latest in client management.

Alternatively, we can always bring a roadshow to you, giving you the opportunity to share ideas with Atos Worldgrid experts, and get a glimpse of the energy and utility futures we are building.

About Atos

Atos is an international information technology services company with annual revenues of EUR 8.7 billion and 78,500 employees in 42 countries. Serving a global client base, it delivers hi-tech transactional services, consulting, systems integration and managed services. Atos is focused on business technology that powers progress and helps organizations to create their firm of the future. It is the Worldwide Information Technology Partner for the Olympic Games and is quoted on the Paris Eurolist Market. Atos operates under the brands Atos, Atos Consulting, Atos Worldline and Atos Worldgrid.

About Atos Worldgrid

Atos Worldgrid is an Atos business unit delivering sophisticated integration projects and real-time smart energy solutions to Energy and Utilities companies across the power, water, oil & gas value chains. With 1,500 engineers and over 30 years experience, Atos Worldgrid operates in more than 15 countries. It has in particular equipped 70 nuclear power plants with its supervision and command & control software in France, UK, Russia and China and delivered the world's largest smart metering system.

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