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GE Infrastructure Water & Process Technologies Desalination

natural resource



Your source for water in abundance

Water today is more precious than ever. Whatever your need, wherever you are, GE Infrastructure Water & Process Technologies can deliver a reliable, safe supply of fresh water at an extremely competitive cost.

Our desalination systems, based on the latest reverse osmosis technology, can meet any volume or quality requirement. As experts in water technology, we offer end-to-end solutions that encompass:

- Water reuse and conservation throughout your operations
- Optimization of existing water production
- Design and construction of new, highly efficient and environmentally friendly desalination processes

We deliver complete desalination systems designed and built in our own factories and fully integrated by GE engineers. Our services include:

- Start-up and commissioning
- Ongoing technical support
- Operation and maintenance
- Technology upgrades

Proven solutions for a thirsty planet

Growing population and rising demand are stretching water supplies worldwide. Today, about one-third of the world's population lives in countries with moderate to high water stress. If present consumption patterns continue, two of every three people on Earth will live in water-stressed conditions by 2025.† Conservation and reuse alone cannot solve the problem.

Desalination is the most effective way to expand the world's water supply. It creates fresh water from the oceans, brackish waters, and groundwater sources degraded by seawater intrusion.

Safe, affordable, reliable

State-of-the-art reverse osmosis (RO) technology is a major advance over previous-generation thermal desalination. RO systems from GE are highly reliable and produce water at an extremely affordable cost. They are also versatile, fulfilling demand of virtually unlimited size, on any continent, from almost any salt or brackish water source with total dissolved solids (TDS) salinity greater than 5,000 parts per million.

Our RO systems are proven environmentally benign, requiring only the responsible management of brine concentrate discharge. GE desalination systems provide fresh water for a wide range of applications:

- Municipal drinking water
- Power generation
- Industrial processes
- Commercial and institutional uses
- Landscape and agricultural irrigation

In Italy, a GE seawater RO boiler feedwater system helped an electric power plant meet rising demand while improving water quality and consistency, reducing water costs by one-third through energy efficiency, and avoiding replacement of vapor compression equipment that would have been four to five times more expensive.

On Providenciales in the Turks and Caicos Islands (British West Indies), GE helped the local water company increase the potable water supply by replacing two older desalination units with new RO units delivering a combined 2,270 cubic meters (600,000 U.S. gallons) per day. The complete system included ozone treatment to reduce hydrogen sulfide and calcite addition to increase hardness and prevent piping corrosion.

When a country club in Hong Kong was forced by new regulations to find an alternative to municipal water for irrigation, GE installed two new seawater RO systems producing a combined 1 cubic meter (260 U.S. gallons) per minute. The systems delivered a reliable, low-cost water supply.



abundant supply

† Source: United Nations Environmental Program (UNEP), Global Environment Outlook 2000

solutions

as unique as you are



Complete solutions from a single source

GE supplies desalination systems designed specifically for your application. To help plan your system, we analyze your water requirement, test your source water, evaluate your potential for reuse and conservation, and perform a treatment cost-benefit analysis. Your fully integrated desalination process includes:

- Feedwater pretreatment
- The latest RO desalination technology
- Product water post-treatment
- A service and support package to keep your system performing at its best

High-efficiency energy systems

Only GE offers you one-source accountability for your water system and the energy to operate it. Our desalination systems can come equipped with advanced energy sources matched to the demands of the site. Through our GE Energy business, we offer combined-cycle turbine generators and other power sources to ensure that your water system performs reliably and with the greatest possible energy efficiency.

Water and energy systems alike are designed and built by GE in facilities that use Six Sigma quality improvement methodology. Our quality management system is ISO 9001:2000 registered.

Besides building new desalination systems, we optimize existing thermal desalination units. Offerings include chemical treatments, filtration, and other enhancements that maximize efficiency and performance while you make a transition to current RO process technology.

For new systems or old, we tailor support services to your needs and budget. Your range of options includes:

- Basic maintenance and service contracts
- Lifetime supplies of chemicals, membranes, elements and other consumables
- PlantGuard* agreements that supply service and consumables in a single package for one levelized monthly fee
- Complete turnkey contracts delivering "water by volume"



we don't just
promise value

we prove it

People focused on your needs

People working to serve you

Our service representatives and engineers are experts in desalination. They work on your site to solve problems and optimize performance.

Strategic partner that delivers value

GE documents and quantifies results. Under a Value Generation Plan we work as a trusted advisor, helping you build a comprehensive water strategy. We identify your priorities up front, then document how we will provide:

- Maximum operating efficiency
- Low energy consumption
- Effective environmental compliance

Constant innovation, continuous improvement

GE works at the forefront of desalination and innovates constantly to bring you more efficient and reliable solutions. Our USD \$200 million commitment to R&D includes the Global Research Center, which makes discoveries each year that can directly benefit your business. Desalination is a major research emphasis: We are focused on RO membrane technology advances and innovative process chemistries.

Besides desalination, we provide complete water and process solutions for every phase of your operations:

- Treatments that protect production assets, process efficiency and product quality
- Chemistries that optimize boiler and cooling tower performance
- Wastewater treatment systems that improve compliance and drive down costs

In addition, our boundaryless organization gives you access to technologies and services through other GE businesses:

- Flexible financing programs from GE Commercial Finance
- Security and access control systems from GE Security
- Process monitoring solutions from GE Sensing
- Automation and control systems from GE Fanuc
- Integration with GE Energy systems

GE people, solutions and technologies help you prosper today and ensure a successful and profitable future.