



GLOBAL SERVICES



SERVICES TO SOLVE YOUR PROBLEMS AND MAKE YOUR LIFE EASIER

All over the world, customers in industrial and institutional markets alike turn to Armstrong International for intelligent, thermal utility solutions. We're global leaders in energy management, and maximizing your company's efficiency and safety is our specialty. Our experts can help you lower your overall utility expenses, and achieve your goals for reducing energy costs and emissions.

ARMSTRONG IS YOUR THERMAL UTILITY PARTNER

Managing your utility system is crucial for your business, but it can be a serious challenge—especially if your staff doesn't include an energy/utility engineer. You want to focus on your company's core product, not on running utilities, but qualified labor is difficult to find. That's why we're here. Armstrong's experts will help you satisfy the demands of your industry and ensure that your utility system continues to run smoothly, efficiently and safely, day after day.

WE HAVE THE FLEXIBILITY TO TAILOR OUR SERVICES FOR YOUR NEEDS

Armstrong offers custom engineering, long-term or short-term solutions, and turnkey services. We can supply you with one operator tech as well as a complete operations and maintenance staff. Whether it's system design for new construction, or implementing complete system solutions at existing facilities worldwide, our experts can tailor our services to meet your unique objectives.

ABOUT ARMSTRONG INTERNATIONAL

Founded in 1900, Armstrong International is a privately held, fifth-generation, family-owned company. Our unique heritage of knowledge, experience and insight reaches back more than a century, enabling us to serve you in ways no one else can. Often the first to market, Armstrong invented the inverted bucket steam trap and our company has been granted more than 70 patents on exceptional products, technology and software.

THE ARMSTRONG PROMISE

To deliver intelligent system solutions that improve utility performance, lower energy consumption and reduce environmental emissions while providing an enjoyable experience.

OPERATIONS AND MAINTENANCE

Armstrong's complete range of O&M services can be customized for the distinctive needs of your company and industry. Our specialists can provide everything from short-term supervision to ongoing management of your entire thermal utility system infrastructure, to training that helps you manage it yourself, more efficiently and safely.

WE HAVE EXTENSIVE EXPERTISE IN:

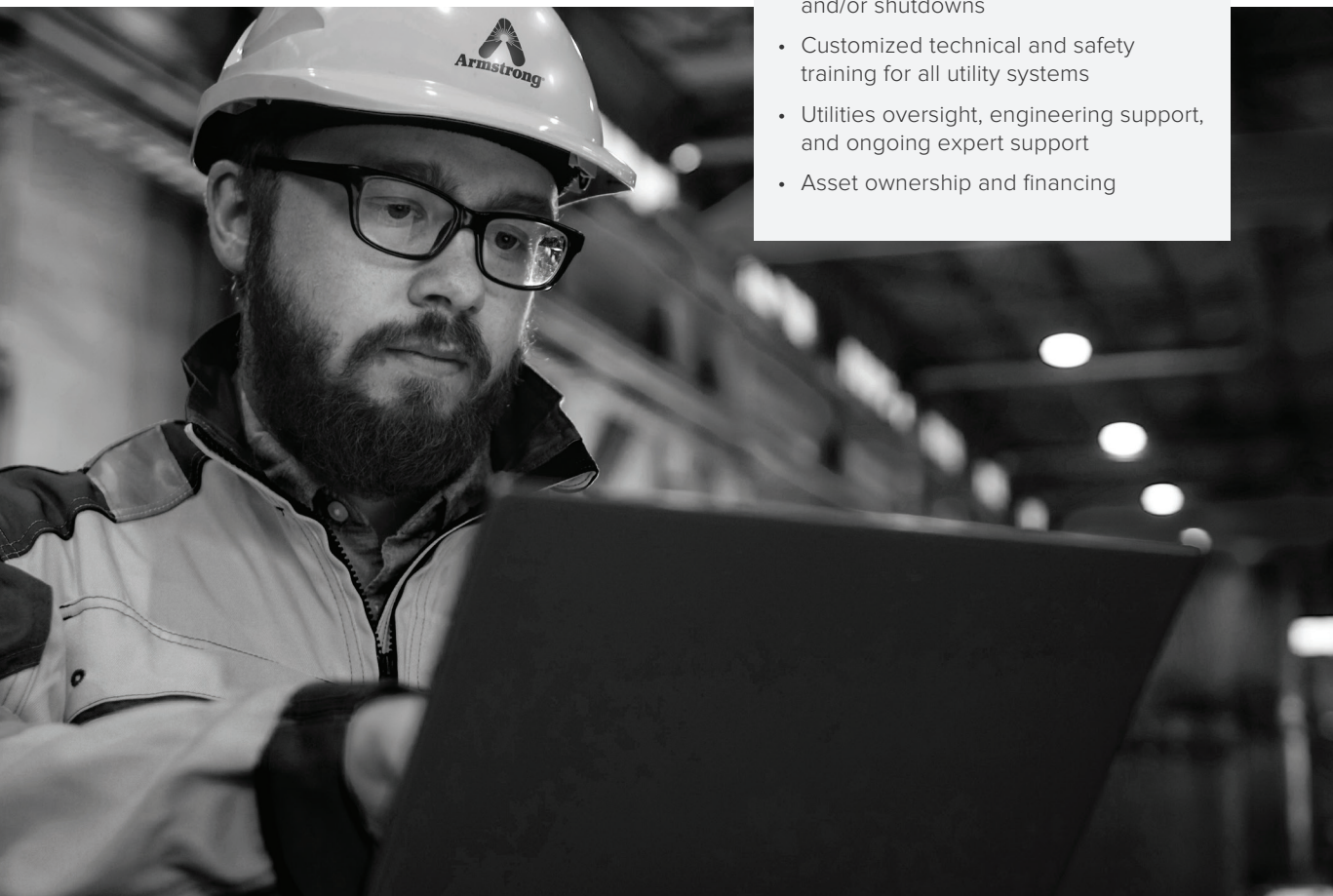
- Steam
- Condensate
- Hot water
- Compressed air
- Generators
- Chillers
- Cooling towers
- Refrigeration
- Wastewater treatment
- Turbines

COMPLETE O&M SERVICES FOR YOUR INDUSTRY

We provide O&M services for a wide and expanding range of industries, such as: food and beverage, pharmaceuticals, hospitality, higher education, hydrocarbon and chemical refining, mining, automotive, tobacco, manufacturing and more.

ARMSTRONG OFFERS:

- Utility system and asset management, operation and maintenance
- Audit and analysis of complete O&M function or specified areas
- Project financing and management
- On-site leadership and/or management of daily O&M activities
- Integrated on-site services for handling O&M function, which may include providing a complete staff or employment of current plant staff
- Short-term O&M labor support
- Development and implementation of site-specific best practices and procedures
- Safe, efficient utility system startups and/or shutdowns
- Customized technical and safety training for all utility systems
- Utilities oversight, engineering support, and ongoing expert support
- Asset ownership and financing



ENGINEERING SERVICES AND TURNKEY PROJECT SOLUTIONS

Armstrong's custom engineering and turnkey services are designed to address your industry's most difficult challenges. We offer site-specific solutions for every area of your utility system, including: steam generation, distribution and utilization; condensate return; flash steam and heat recovery; hot water generation, distribution, and temperature control; water utilization; water and wastewater treatment; electricity utilization; and more.

ASSESSMENTS

This is a preliminary system assessment, or walkthrough, of your facility that allows us to gather important information about your utility system's infrastructure. Once we have identified any immediate opportunities for improvements, such as reducing energy use or correcting safety issues, Armstrong's experts will offer initial recommendations.

AUDITS, STUDIES AND CONSULTING

We conduct a comprehensive, on-site evaluation of your utility system to reveal inefficiencies, identify opportunities for improvement, and uncover the cause of current or potential problems. After analyzing the results, our specialists determine the intelligent solutions that will be most effective in achieving your objectives. Your detailed report will include recommended Energy Conservation Measures (ECMs), schematics, drawings, estimated savings (thermal, water and financial), emissions reductions, and more.

ARMSTRONG'S EXPERTS CAN:

- Benchmark your utilities against the best in your industry
- Identify opportunities for improvements and provide solutions
- Design for energy improvements, including equipment specifications, piping, instrumentation, etc.
- Focus on variations in energy cost
- Identify new technologies and retrofits that can deliver energy savings
- Check availability and reliability of various alternative forms of energy
- Assist in choosing the most appropriate energy/fuel mix for your industry

TURNKEY PROJECT SERVICES AND IMPLEMENTATION

If your company lacks the experienced personnel necessary to accomplish your energy or utility system projects, we can help. Armstrong becomes a member of your team, providing talent, manpower and financial options to help you reach optimization goals affordably and conveniently. Our specialists can engineer the intelligent solutions you need and take full responsibility for implementation.

ARMSTRONG'S TURNKEY SERVICES INCLUDE:

- Implementation of Energy Conservation Measures (ECMs) identified during energy audit and/or study
- Project management, oversight of subcontractors and vendors, and options for financing
- Design and build of new utility systems and plants, or specific improvement projects
- Constructability and installation guidelines, such as equipment layout drawings, pipe routing, system tie-ins and configuration
- Startup, commissioning and training
- Assistance with permitting and regulatory changes, including construction or building permits, changes to facility air permits, and local and regional rebates or incentives
- Integration and installation of Armstrong packaged solutions



PRODUCTS AND SYSTEMS

Armstrong's rugged, dependable, hardworking products, groundbreaking technological tools and complete system solutions all work together to consistently deliver outstanding performance, longevity and value for your company, whatever industry you are in.

BEST-IN-CLASS QUALITY

The unwavering reliability, safety and efficiency of Armstrong products is ensured by our stringent quality control and rigorous support of our global quality assurance, supply chain, and manufacturing, engineering and maintenance teams. Our products are backed by Armstrong's distinctive technical support, and our digital monitoring technology enables us to perform real-time evaluations on many products.

CUSTOM-ENGINEERED PRODUCTS AND MANUFACTURING

Armstrong's manufacturing strength and flexibility allows us to design and build exceptional, long-lasting equipment to meet your exact needs. We offer machining, assembly, hydro and pneumatic testing, positive material identification, functional testing and fabrication, and more. Armstrong products are available in a wide variety of metals and alloys, including steel, stainless steel, copper and aluminum.

- Many Armstrong International facilities have received ISO 9001:2015 certification.
- The ASME "U" stamp and PED 2014/68 / CE are available on our heavy-duty Series 6000, unit heaters, door heaters, insect heat treatment and tank heaters. All Armstrong products sold in Canada have a Canadian Registration Number where the application requires it.

PRODUCTS FOR ALL AREAS OF YOUR UTILITY SYSTEM:

- Package solutions, complete with all necessary Armstrong and non-Armstrong products and components
- Steam and condensate management (traps, tracing, condensate recovery, strainers, liquid drainers, pressure and temperature controls, air and gas vents, and more)
- Steam quality monitoring
- Hot water generation, distribution and precision temperature control, for industries and institutions
- Steam and hot water system monitoring and reporting technology
- Flow measurement
- Humidification
- Heat transfer (coils)
- Refrigeration

EDUCATION AND TRAINING

Armstrong University gives you easy access to online courses, training and seminars, as well as on-demand webinars and other industry-specific learning opportunities to help you address tough, everyday issues.

CUSTOMIZED ONLINE COURSES

Armstrong University can customize an online curriculum for your organization, to be delivered at your site or one of our global learning centers, whichever is most convenient.

INTRODUCTORY, INTERMEDIATE AND ADVANCED COURSES

Choose from more than 145 online courses in steam, humidification, hot water, water treatment, refrigeration, flow measurement, environmental health and safety, and more. Courses that qualify for Continuing Education Units (CEUs) are also available. Our coursework was developed by energy and thermal utility system specialists and leading technical experts with over 2,000 years of collective, practical experience.

GLOBAL LEARNING CENTERS

Armstrong has Learning Centers in: Three Rivers, Michigan (USA); Liege, Belgium; Beijing, China; Nagoya, Japan; and soon in Guadalajara, Mexico. Many of Armstrong's representatives throughout the world operate their own learning centers. Armstrong locations in India, Korea and other parts of the world have portable demonstration capabilities that allow us to bring the seminar to you.

KNOWLEDGE NOT SHARED IS ENERGY WASTED®

One of Armstrong International's greatest strengths is our wealth of knowledge, experience and insight, derived from more than 100 years of providing thermal utility solutions for customers all over the world. As a true, sage brand and we're fully committed to sharing all that we've learned to help you make the smartest possible decisions for your company.





INTELLIGENT SOLUTIONS IN STEAM, AIR, AND HOT WATER

Armstrong International

North America • Latin America • India • Europe / Middle East / Africa • China • Pacific Rim

armstronginternational.com