



**Armstrong®**

# OPTIMIZING THERMAL SYSTEMS WITH ARMSTRONG SERVICE

SERVING FOOD, PHARMACEUTICAL  
AND MANUFACTURING INDUSTRIES.

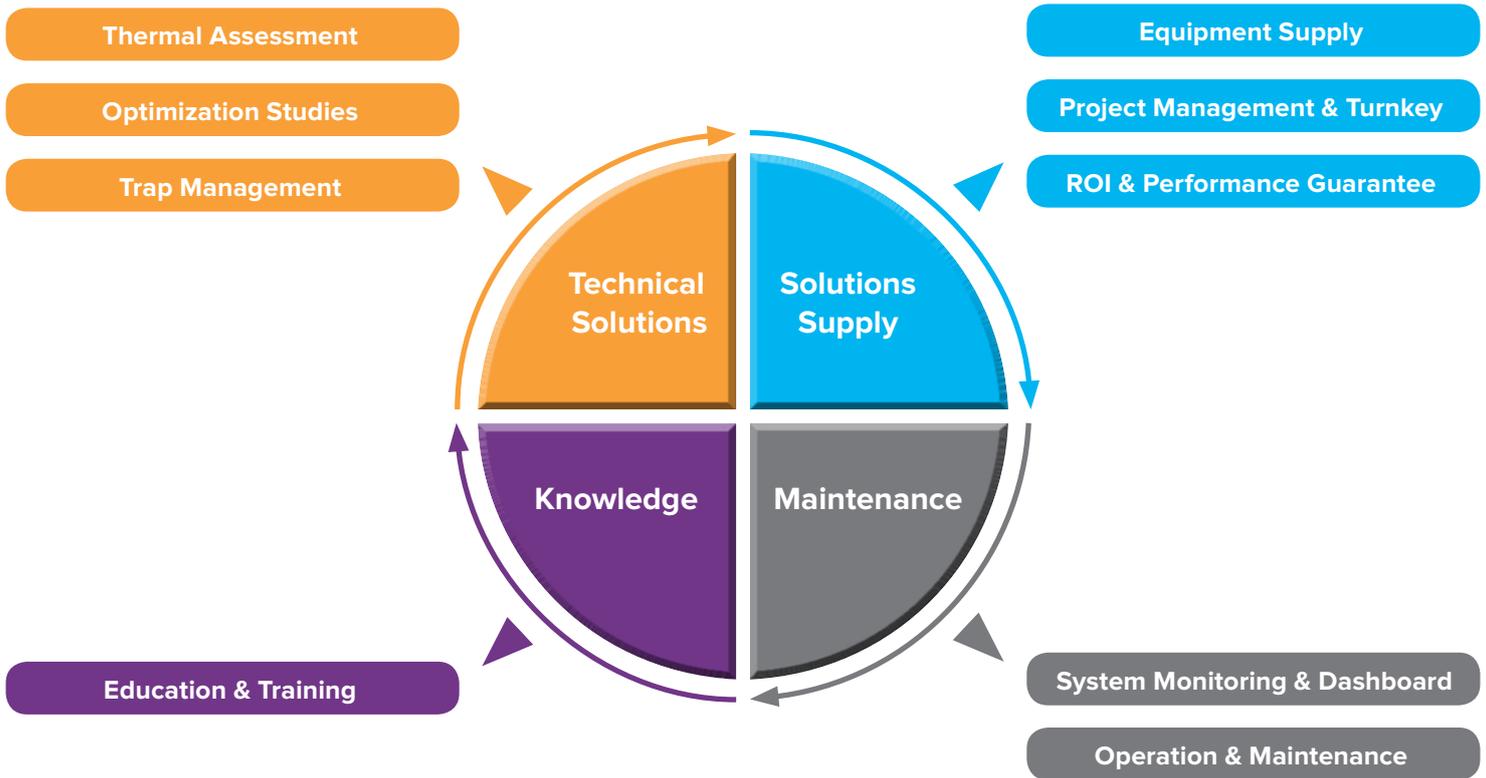
# EXPERIENCE AT THE CORE OF EVERY SOLUTION

Armstrong is a world leader in providing optimization solutions to improve the performance of steam, air, hot water and heat recovery systems.

## ARMSTRONG, GLOBAL LEADER IN ENERGY AND ENVIRONMENTAL MANAGEMENT

- Five Generations of Family Ownership and Leadership.
- Specialists in utility optimization for process, industrial, and institutional facilities.
- Operates 11 manufacturing and assembly facilities located in Europe, North America, China, India, Mexico, Japan and Korea.
- Global network of sales engineers and energy training facilities located in 100 countries.

Armstrong offers productive solutions that are fully customizable and compatible with your existing systems.



We use a unique and comprehensive approach. Our legacy of more than 100 years of experience has provided us with expertise and in-depth knowledge applicable to many industrial disciplines. The engineers and field technicians in our service department have the knowledge they need to offer our clients solutions which are meticulously adapted to their specific needs.

## DID YOU KNOW...

Armstrong International has worked with many Companies to help them in their efforts to improve their thermal systems and make their network costs more reliable.

### Food Industry

- AB InBev
- Bonduelle
- Cargill
- Coca-Cola
- Lactalis
- Mars
- Nestlé
- Unilever
- ...



### Pharmaceutical Industry

- Bracco
- Ely Lilly
- GlaxoSmithKline
- UCB Pharma
- Baxter
- ...



### Other Industries

- Burgo
- DS Smith
- Kimberley Clark
- Michelin
- ...



# THE AVERAGE PAYBACK PERIOD FOR OUR ENERGY-SAVINGS PROJECTS IS 2 YEARS. WE PROVIDE PRODUCTIVE SOLUTIONS THAT ARE COMPATIBLE WITH YOUR SITES' EXISTING SYSTEMS.

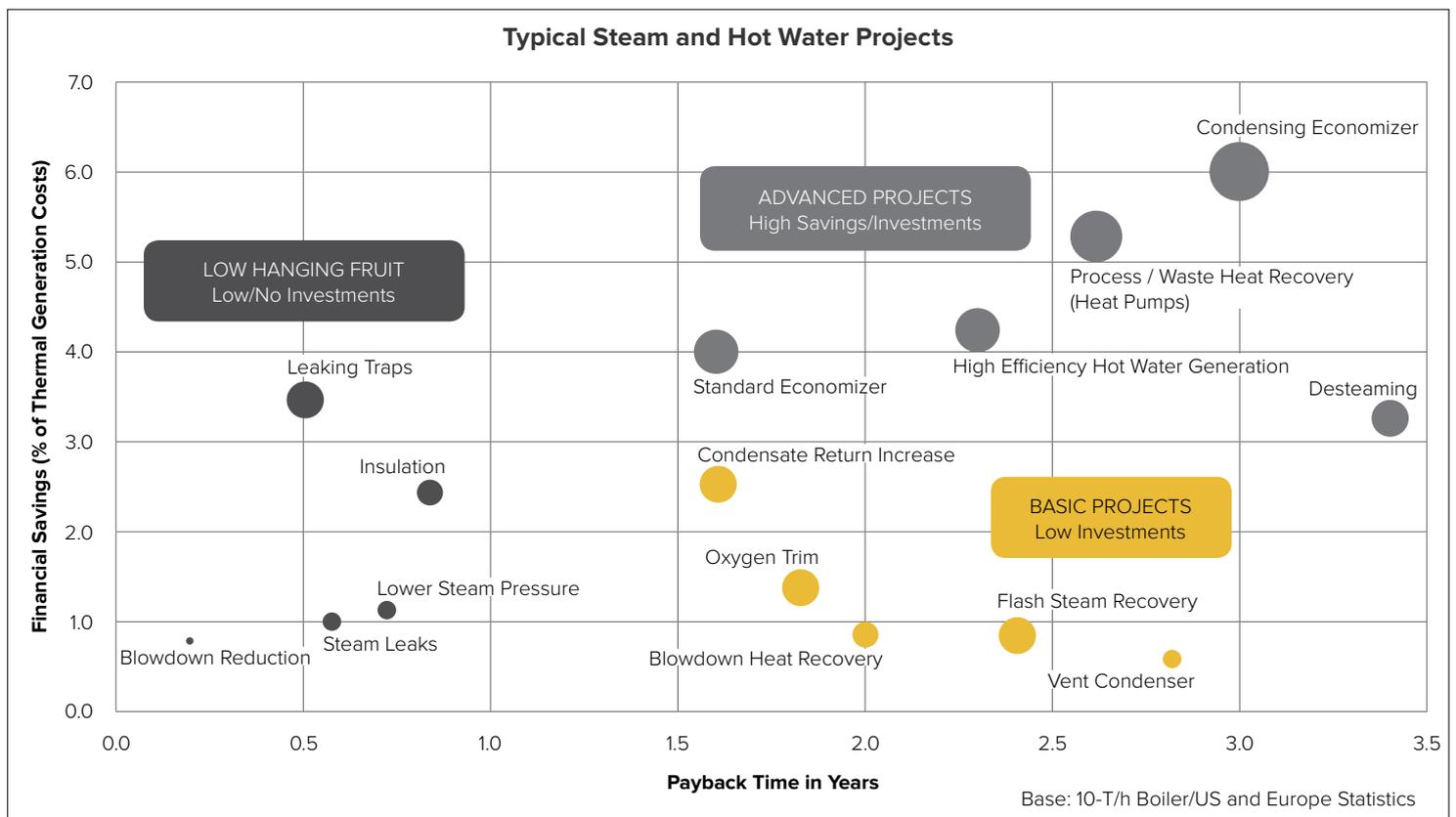
## OUR UNIQUE APPROACH

- Walk-through
- Thermal Assessments
- Optimization Projects implementation



- On-site visit to identify the issue
- Dedicated engineered studies to propose the best solutions
- Implementation of the Armstrong solution

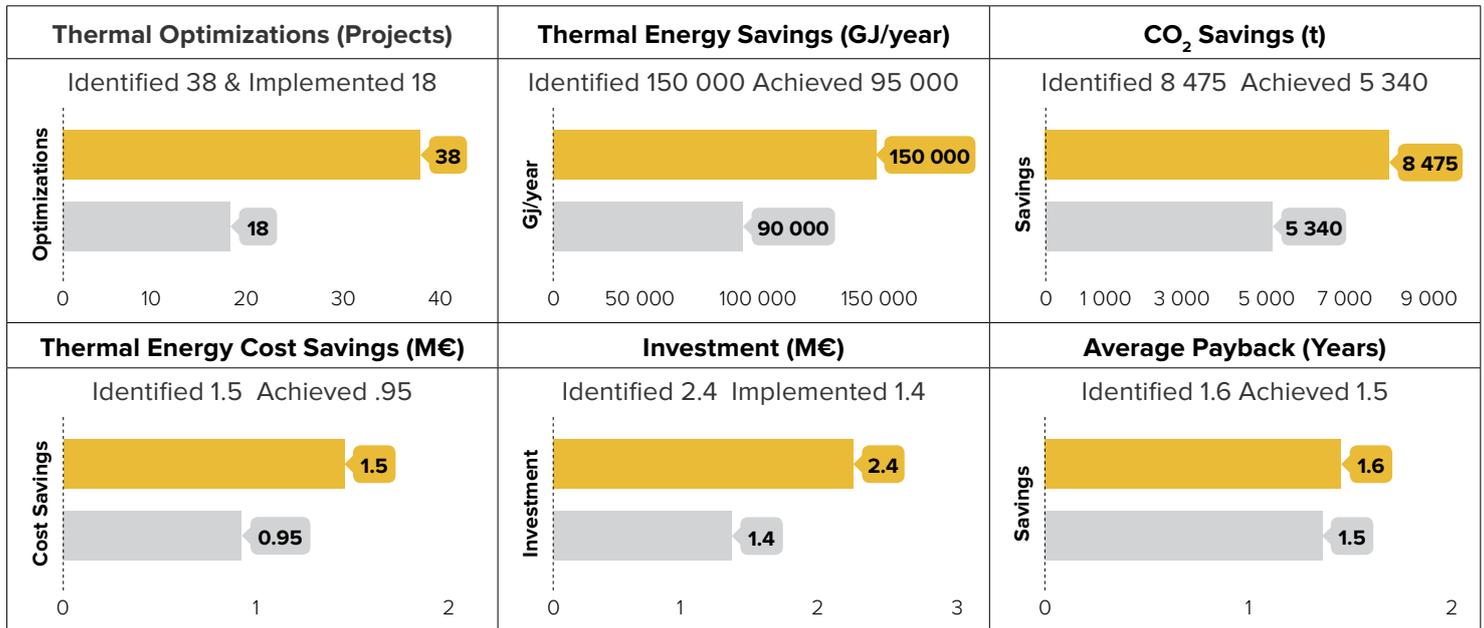
## TYPICAL THERMAL SYSTEMS OPTIMIZATIONS THANKS TO ARMSTRONG SERVICE



# 350 PROJECTS THROUGHOUT EUROPE WERE PERFORMED BY THE ARMSTRONG SERVICE TEAM FOR MORE THAN 15 YEARS.

## IDENTIFIED AND IMPLEMENTED FIGURES FOR YOUR FOOD THERMAL UTILITIES

(results after 5 years of analysis for different plants of the same group)



## INTELLIGENT SOLUTIONS ENGINEERED FOR QUALITY, PRODUCTIVITY AND EFFICIENCY

### Safety & reliability

- Steam and condensate networks reliability.
- Reduce occurrence of steam and condensate leakages.
- Avoid water hammering and increase systems safety.
- Eliminate condensate losses to the drain.
- Handling steam peaks demands.



### Quality

- Ensure good Steam Quality for process application.
- Monitor steam Dryness.
- Solving heat exchangers stalling issues.
- Deal with condensate contamination risks.
- Implement KPI to monitor your systems efficiency.



### Energy savings

- Save steam by preheating using waste heat recovery.
- Desteaming.
- Use flash steam from hot condensate to generate LP steam.
- Maximize hot water generation efficiency.
- Heat source / heat sink studies.
- Increase condensate return rate.



## EXAMPLES OF OUR SOLUTIONS

Increase usage of Hot water loop from Cogeneration unit to preheat process water.

Heat recovery on cow water to preheat process water at 50°C.

Recover heat on the cooling water loop from Sterilizers to preheat process water.



Industrial heat pumps helps to improve heat recovery on sterilizers.

Recover heat released on thermal oil cooler to generate LP steam.

# INTELLIGENT PRODUCTS, PROGRAMS AND SERVICES FOR YOUR NEW FACILITIES AND EXISTING PLANTS OF ALL SIZES, WORLDWIDE.

More than a century of sage knowledge and in-depth experience has made us uniquely skilled in designing and producing the rugged, reliable products that successfully reduce emissions and improve energy efficiency for our food & beverages customers all over the world. Our products and packaged solutions consistently deliver best-in-class quality as they work together to create the most intelligent system solutions.

## knowledge not shared is energy wasted



At Armstrong International, one of our greatest strengths is the wealth of knowledge, experience and insight we have derived from more than a century of providing solutions for customers all over the world. Through Armstrong University, we give you access to this unique legacy of in-depth knowledge by providing seminars and online training. Armstrong can even create a curriculum custom-tailored for your organization and delivered at your site, or provided through one of our global learning centers. As a true, sage brand, we are fully committed to sharing all that we've learned to help you make the smartest possible decisions for your company.

## Unique Hot Water generation solutions



Armstrong can solve your problems and prevent them with a complete solution designed for your specific situation and requirements. Your hot water packaged solution will include the innovative, hardworking products and comprehensive services needed to support the complexity of your project—all engineered to provide you with a reliable, long-term solution that demonstrates unsurpassed value and efficiency and improved utility performance.

## Steam System Monitoring



**A fully integrated solution engineered to make your life easier.**

SAGE® helps you increase equipment reliability, efficiency and safety while allowing you to reduce environmental emissions. Whether you want to save time and money by keeping your facility's steam traps running at top efficiency, or you want to ensure happier customers or safer patients by operating, monitoring and reporting hot water system performance in compliance with global hot water safety guidelines. SAGE® is the intelligent solution you need.

## Steam Quality



Armstrong is providing solutions to help you with steam quality for process where direct steam injection is needed. ... culinary steam - EN285 for pharmaceutical market.



**INTELLIGENT SOLUTIONS IN STEAM, AIR AND HOT WATER**

**Armstrong International**

North America • Latin America • India • Europe / Middle East / Africa • China • Pacific Rim  
[armstronginternational.eu](http://armstronginternational.eu)