

# INSPIRED SOLUTIONS FOR A CHANGING WORLD



Six simple words.

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INSPIRED SOLUTIONS  
FOR A CHANGING WORLD

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Together they tell us  
everything we need to  
know about what we do.  
And why we do it.



# A CHANGING WORLD

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▶ INSPIRED SOLUTIONS FOR A CHANGING WORLD

CAPE TOWN, SOUTH AFRICA

The world's population is growing, and with it a global middle class will soon surpass four billion people. This profound shift in demographics puts tremendous stress on our water, food, and energy supplies. And they're interdependent—we need water to grow food and generate energy, and we need energy to move and treat water and process food.

At Pentair, we envision a future with safe water, abundant energy, and affordable food that protects the health and vitality of our planet and its people.



It will take great companies to meet this challenge. Those with inspiring culture, industry-leading solutions, longstanding partnerships, and a commitment to high performance.

## PENTAIR IS ONE OF THOSE COMPANIES.

We combine global perspective and deep expertise to develop real solutions that help the world get more food, energy, and efficiency from each drop of water.



# INSPIRED

▶ **INSPIRED** SOLUTIONS FOR A CHANGING WORLD

At Pentair we have a shared belief, passion and calling, coming together in pursuit of a common goal. We are one global team, 30,000 people strong, inspired by our role in the world, our customers, and each other.

## **WE ARE DRIVEN BY PURPOSE.**

We improve the quality of life of people around the world.

## **LED BY VISION.**

We will be the next great industrial company.

## **GUIDED BY PROCESS.**

We achieve our vision through our strategic and operating principles driven by the Pentair Integrated Management System that provides processes, methods, and tools for continuous improvement.

## **UNITED BY OUR WIN RIGHT VALUES.**

We seek to “Win Right”—through a dedication to customer first, accountability for performance, innovation and adaptability, positive energy, respect and teamwork, and absolute integrity.

## **DIFFERENTIATED BY ACTION.**

We set ourselves apart with our inventive thinking, collaborative spirit, disciplined work ethic, and breadth of experts.





Pentair has the resources, technology and values to make a positive impact in the world. Pentair focuses on addressing the challenges of a growing population and the demands it puts on water, food and energy. Our Corporate Social Responsibility programs have brought Pentair's resources to bear in finding and supporting innovative ways to meet societal needs around water, food and energy in ways that have a positive impact beyond our customer base. We don't just help others reduce water and energy use, we do it ourselves.

**100%** 

PENTAIR EMPLOYEES AROUND THE WORLD HAVE RALLIED AROUND **"ENERGY TREASURE HUNTS"**. OVER THE PAST 3 YEARS, THIS EMPLOYEE LED EFFORT HAS REDUCED PENTAIR'S ENERGY CONSUMPTION BY UNIT OF OUTPUT BY 40% FOR OUR MANUFACTURING FACILITIES. THE SOLAR ROOF SYSTEM AT OUR MANUFACTURING SITE IN PISA, ITALY ALLOWS US TO MANUFACTURE ALL PRODUCTS THERE USING **100 PERCENT RENEWABLE ENERGY**.

**500K** 

IN PLACES LIKE THE DEMOCRATIC REPUBLIC OF CONGO, INDONESIA, INDIA, HONDURAS, AND KENYA—WORKING WITH ORGANIZATIONS LIKE ACTION AGAINST HUNGER, SAFE WATER NETWORK, AND WATER MISSIONS INTERNATIONAL—WE'VE HELPED OVER **500,000 PEOPLE GAIN ACCESS TO CLEAN, SAFE WATER**.

**135** 

OUR LAUSANNE, SWITZERLAND, OFFICE HAS ALMOST 90 PERCENT OF ITS EMPLOYEES INVOLVED IN RAISING FUNDS TO BRING DRINKING WATER AND SANITATION TO **135 VILLAGES IN BURKINA FASO**.



# SOLUTIONS

▶ INSPIRED SOLUTIONS FOR A CHANGING WORLD

Our changing world requires bold solutions.  
New thinking. Integrated, innovative ideas.

Pentair invents and manufactures solutions that address some of the world's toughest challenges, with over 75 percent of our products, services and technologies related to food, water or energy.

Collaborating with industrial partners, government, non-governmental organizations, and other companies, we serve a wide variety of customers in the food and beverage, residential and commercial, industrial, infrastructure, and energy sectors.



FOOD



WATER



ENERGY

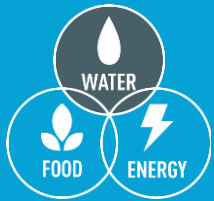
RESIDENTIAL + COMMERCIAL

ENERGY

INDUSTRIAL

INFRASTRUCTURE

FOOD + BEVERAGE



# WATER

WHILE DEMAND FOR CLEAN, SAFE WATER GROWS FASTER THAN THE POPULATION, ONLY **2.5 PERCENT** OF AVAILABLE WATER IS FRESH WATER.<sup>i</sup>

## \$9.6B

WATER UTILITIES LOSE APPROXIMATELY \$9.6B ANNUALLY BECAUSE OF LEAKED WATER.<sup>ii</sup>

## 60%

IN **60%** OF EUROPE'S LARGE CITIES, THE GROUND WATER IS BEING USED FASTER THAN IT CAN BE REPLENISHED.<sup>iii</sup>

## 2B

BY 2050, SOME PREDICT THAT THE NUMBER OF PEOPLE VULNERABLE TO FLOOD DISASTERS WILL INCREASE TO **2 BILLION** PEOPLE.<sup>iv</sup>



**Pentair developed an innovative recycling system for the Minnesota Twins' new ballpark.** It captures and reuses rain water for washing stadium seats and irrigating the playing field, reducing the need for municipal water by over 50 percent while saving the Minnesota Twins 2 million gallons of water annually.



**Following Hurricane Katrina, Pentair was asked by the Army Corp of Engineers to build 11 pumps to help protect New Orleans from flooding during storms and hurricanes.** The pump station is considered the largest in the world.



**Pentair contributed to a desalination solution consisting of Pentair's x-flow membranes to one of the world's largest seawater reverse osmosis plants, which supplies drinking water to more than 450,000 residents in Kuwait City**

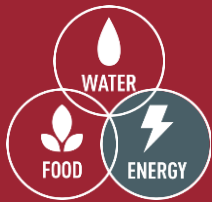
## PENTAIR SOLUTIONS

Pentair is a leader in helping to manage the world's precious water resources. We help businesses and communities better manage and treat their water supply so they can return it safely to the environment or recover and re-use it for other uses.

We help make clean, safe water more available and affordable for drinking, recreation, and business operations.

- Pool equipment
- Water purification & filtration
- Water re-use solutions
- Desalination
- Water & waste water solutions
- Flood control solutions
- Water transmission





# ENERGY

BY 2030,  
WORLD ENERGY  
CONSUMPTION IS  
PROJECTED TO  
INCREASE BY  
**36 PERCENT.** <sup>v</sup>

# 80%

IN THE CHEMICALS  
INDUSTRY, ENERGY COSTS  
CAN REPRESENT 80% OF  
PRODUCTION COSTS. <sup>vi</sup>



In an effort to bring many more energy resources **within reach**, major oil companies are building floating liquefied natural gas (FLNG) ships that produce, liquefy and store the gas before it is shipped to their customers. Pentair provides critical pressure relief products that are installed on FLNG ships to protect their critical equipment, pipes and assets.

# 75%

75% OF THE INCREASE IN  
ENERGY WILL BE MET BY  
FOSSIL FUELS. <sup>vii</sup>

# 1B

1.3 BILLION PEOPLE  
IN THE DEVELOPING  
WORLD LACK ACCESS  
TO ELECTRICITY. <sup>viii</sup>



**The Mangala Development Pipeline in India** requires a constant, elevated temperature above 149°F (65°C) to ensure flow of crude oil over a distance of 400 miles (700 km). Pentair's Thermal Management business engineered and bundled multiple state-of-the-art technologies, delivering a one-of-a-kind, safe, reliable, cost-effective, and energy-efficient system, helping create the world's longest continuously heated and insulated pipeline.

## PENTAIR SOLUTIONS

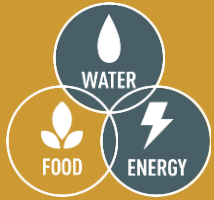
As demand for oil and gas increases, companies and communities across the globe are striving to reduce energy consumption and waste. Pentair makes products that enable safer, more efficient power generation and transmission. We also provide reliable products that can withstand harsh environments, which help increase efficiency, and decrease maintenance and downtime.

- Freeze protection systems
- Temperature management systems
- Hydrocarbon leak detection systems
- Valve flow control systems
- Pressure relief safety systems
- Electrical control enclosures
- Heat management systems
- Oil & gas filtration systems



**Pentair delivers certified electrical control enclosures for LNG.** Pentair launched a new enclosure product to protect electrical equipment in hazardous-locations, where explosive dust and gas are present. The **Hoffman Zonex Enclosures** are designed for operation in temperatures ranging from -58 to 212 degrees F.





# WATER + ENERGY

MANAGING SCARCE WATER SUPPLIES IS CRITICAL TO DELIVERING THE WORLD'S ENERGY NEEDS—**WATER IS USED TO CREATE ENERGY WHILE ENERGY IS USED TO TREAT WATER.**

## 50%

NEARLY 50 PERCENT OF THE WATER WITHDRAWALS IN THE U.S. ARE USED FOR ENERGY PRODUCTION. <sup>xi</sup>



Each year it takes all the energy produced by 20 medium-sized power plants just to fuel America's in-ground swimming pools. Pentair collaborated with the U.S. Department of Energy and EPA to develop Energy Star® industry standards for pool pumps. Since 2005, Pentair's Eco-Select pool pumps have saved 2.1 billion kilowatts—the equivalent of 73,000 homes' energy use for a year. <sup>ix</sup>

## 15%

15 PERCENT OF ALL ENERGY USE IN WATER TREATMENT AND DISTRIBUTION PROCESS IS TO PUMP WATER <sup>x</sup>

## 30%

30% OF OPERATIONAL COSTS AT A TREATMENT PLANT ARE FOR ENERGY. <sup>xii</sup>



Pentair's membrane separation technology for Anaerobic Membrane Bio-Reaction more effectively purifies food and beverage processing wastewater thus producing cleaner water that can be re-used or re-charged and enabling more methane production that can be used for energy. The technology won the Aquatech Innovation Award in 2013.

## PENTAIR SOLUTIONS

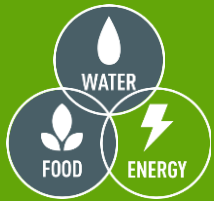
Pentair designs and manufactures advanced technologies for the separation of solids, liquids, and gases, and for the treatment of water and steam. Our high-performance solutions help manufacturers, businesses, municipalities, commercial buildings, and homes efficiently manage water usage and treatment.

- Energy Star®/Energy efficient pool and pump products
- Filtration & separation systems
- Water & waste water treatment
- Biogas Recovery and purification



Pentair's Hydrocarbon Recovery Technology (HRT) provides refiners and gas processors dramatically improved solids control and hydrocarbon recovery from process water streams, eliminating expensive excess processing, chemical additives, and storage tank capacity. With efficiencies of 99.98 percent, this technology produces a sellable product, balancing or outweighing operating and capital expenses.





# WATER + FOOD

IRRIGATION AND FOOD PRODUCTION CONSUME HUGE AMOUNTS OF WATER. AS THE MIDDLE CLASS EXPANDS, DIETS ARE SHIFTING TO SOURCES OF HIGHER PROTEIN, WHICH REQUIRE MORE WATER TO PRODUCE.

## 70%

GLOBALLY, 70 PERCENT OF THE WORLD'S AVAILABLE FRESH WATER IS BEING USED FOR AGRICULTURE. <sup>xiii</sup>



Through our work in aquaponics we're helping a new industry that brings healthy food and high-value jobs to neighborhoods. Designed to be energy efficient and zero-waste, aquaponics uniquely combines conventional aquaculture with hydroponics. Pentair is providing solutions to a new facility in Minnesota that will provide fish and produce to local restaurants, grocers, and schools year round, reducing the transportation footprint, too.

## 70%

GROWING POPULATION AND CHANGING DIETS WILL INCREASE FOOD DEMAND 70 PERCENT BY 2050. <sup>xiv</sup>

## 57%

57% OF THE WORLD'S FISH STOCKS ARE OVER FULLY EXPLOITED AND 17% ARE OVER EXPLOITED. <sup>xv</sup>



The most advanced, efficient, and sustainable food and beverage processing plants in the world partner with Pentair. Our innovative technologies and products help our customers realize significant savings in energy, raw materials, labor, and space. Our technologies are used in many food and beverage applications including beer, juice, milk, dairy processing and the recovery and re-use of CO2 in carbonated beverages.

## PENTAIR SOLUTIONS

Pentair helps efficiently manage food and beverage production to minimize water usage, so that our customers can optimize processes and economies of scale while increasing yield. We also manage and treat water for sustainable food production.

- Irrigation management
- Crop sprays
- Aquaponics
- Aquaculture
- Hygienic pumps
- Enclosures & cabinets
- CO2 Recovery
- Beer & wine filtration



Pentair markets a full range of agricultural spray tips for applying fertilizers, pesticides, and herbicides. Our proprietary technology enables our customers around the globe achieve better chemical efficacy, predictable spray pattern distribution, and reduced drift resulting in improved yields and a better protected environment.



OUR CHANGING WORLD IS AN EXCITING,  
BEAUTIFUL, DIVERSE, CROWDED, AND  
COMPETITIVE PLACE. IT DEMANDS  
SAFE WATER, ABUNDANT ENERGY, AND  
AFFORDABLE FOOD. AND IT INSPIRES US  
ALL TO STEP UP. TO WORK TOGETHER.  
TO PROVIDE SOLUTIONS. **BECAUSE**  
**WHEN WE DO, THE WORLD BENEFITS.**



INSPIRED SOLUTIONS FOR A CHANGING WORLD



## REFERENCES

- i United Nations Environment Programme
- ii Sensus, Water 20/20 Report
- iii World Business Council for Sustainable Development
- iv United Nations University
- v BP Energy Outlook 2013
- vi US Energy Information Administration (EIA)
- vii US Energy Information Administration (EIA)
- viii OECD, International Energy Agency, “World Energy Outlook 2013”  
(Internal Pentair reference)
- x Environmental and Energy Study Institute (EESI)
- xi Environmental and Energy Study Institute (EESI)
- xii UNESCO, The United Nations World Water Report 4 “Managing Water under Uncertainty and Risk”
- xiii World Economic Forum, “Water Security, The Water-Food-Energy Climate Nexus”
- xiv World Economic Forum, “Water Security, The Water-Food-Energy Climate Nexus”
- xv United Nations Food and Agriculture Organization (FAO)