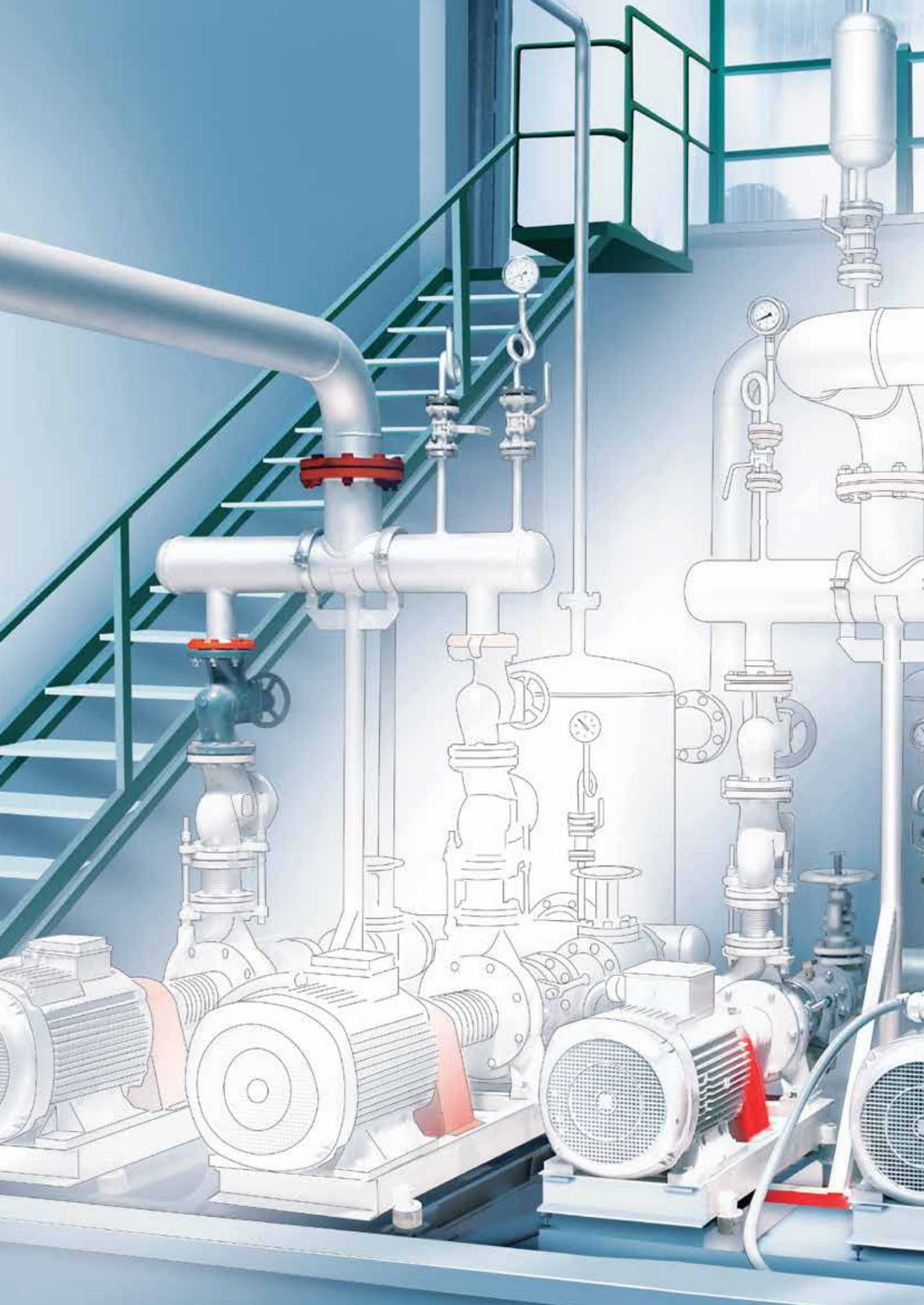




**ENERGY EFFICIENCY TODAY
FOR A BETTER WORLD TOMORROW**





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01

Standart
Yaşamı Korum! Save Life!





ENERGY SOURCES, CONSUMPTION AND PUMPS





› Energy Consumption in Turkey and Around the World

The world's energy sources are not unlimited!

If we do not fundamentally change the way we use energy, we will be unable to meet the energy needs, not only of future generations, but of people alive today.

Let's take a brief look at how energy consumption in Turkey has developed during the recent past.

» In 2010, Turkey consumed 28.7 million tons of petroleum, an increase of 1.7% over 2009 consumption. Based on these numbers, Turkey accounted for 0.7% of worldwide petroleum consumption.

» In 2010, Turkey consumed 39 billion cubic meters of natural gas. On this basis, natural gas consumption in Turkey increased by 9.2% over the previous year. In 2010, Turkey accounted for 1.2% of total global consumption of natural gas.



In parallel with ongoing rise in global temperatures, our ecosystem is losing its defenses against external effects. The negative impacts of global energy usage on the environment demand immediate action.



Our resources are running out, and the only solution is "efficiency"!

» Accounting for 0.5% of global coal production, in 2010, Turkey's coal output was unchanged. But coal consumption increased by 7.4%.

» Globally, in 2010, there was a 15.5% increase in consumption of renewable energy. With an increase of 88.1% Turkey accounted for 0.6% of global renewable energy consumption.

» Turkey accounted for 1.5% of worldwide consumption of hydroelectric energy, with consumption of hydroelectric energy in Turkey growing by 44.3%.

A photograph of an industrial refinery or chemical plant at sunset. Several tall, cylindrical distillation columns are visible, some with red and white horizontal stripes. The sky is a mix of blue, orange, and purple. The scene is illuminated by the warm light of the setting sun, with some artificial lights visible on the structures.

> The Role of Pumps in Modern Life

“ We need pumps in virtually every aspect of modern life. We use pumps in the transfer of numerous liquids, including water, chemical fluids and petroleum. Pumps perform a variety of functions in businesses, buildings, homes and industry. ”

Pumps are responsible for transporting drinking water from water treatment plants to urban areas and for the discharge of waste water. They have an important role in ensuring the comfort of building residents.

Pumps play a crucial role in the combi boilers in our homes, the transfer of drinking water and waste water in our apartment buildings and housing complexes, our workplaces' fire-safety systems and numerous other everyday places.



Even though most of us never notice them, pumps are part of every minute of our lives. We need pumps to keep our homes and offices at the ideal temperature, to take a shower, even to drink a cup of tea.



> Pumps and Energy Consumption

Did you know that pumps account for roughly 20% of worldwide energy consumption? There are numerous systems that require pumps, and these systems consume large quantities of electricity in order to operate.

In short, the efficiency of pumping systems is a good indicator of what kind of world we will leave behind for future generations.

In other words, pumps represent one of the most important opportunities for energy conservation.



A world map with a dark blue background and a network of glowing blue lines connecting various points across the continents, symbolizing global connectivity or energy networks.

> Pumps and Energy Conservation

“ According to estimates, two-third of the pumps in use today consume 40% more energy than necessary. If we think about the number of pumps everywhere around us, it is reasonable to say that the potential energy savings are of an extremely large order of magnitude. ”

If pumps that consume more electricity than necessary were replaced with a more energy efficient solution, savings equivalent to 3% - 5% of world electricity consumption could be achieved. And that amount is roughly equivalent to the amount of energy consumed by one billion people in a year! Pump and motor technologies optimized for energy efficiency can recover the electricity consumed by pumps and reduce energy waste.

> Time to Take Action for Energy Conservation



If we don't act now, it could be too late.



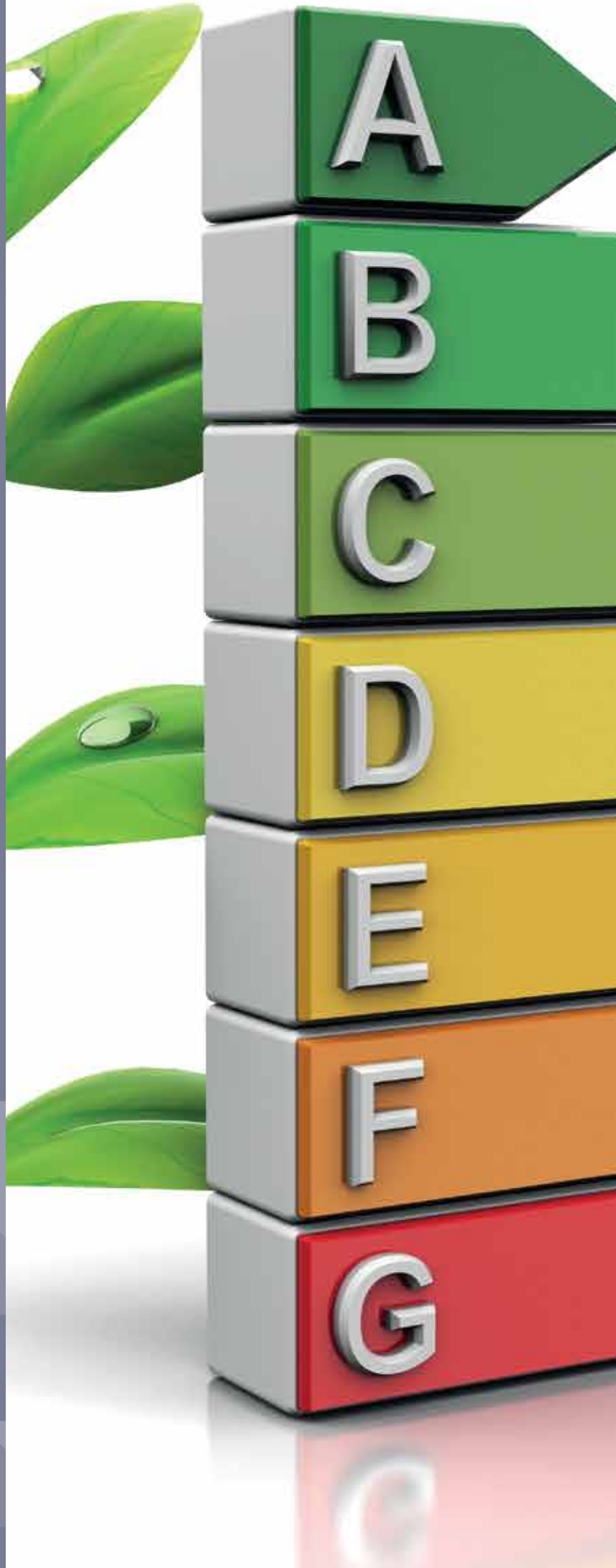
In keeping with our philosophy, "Save Life," we continuously work to reduce our carbon footprint and develop energy efficient pumps and technologies. Among our objectives are increasing the efficiency of our pumps and reducing their CO₂ emissions.



To be responsible, to consider the future and to act on the basis of an innovative perspective... Guided by these values, the creative solutions and ideas that we develop make us one of the world's most trusted pump producers.



02





**ERP DIRECTIVE
& 2010
REGULATIONS**



> Energy 2020

20%

Legal frameworks and regulations are being put into place in Europe and around the world to make energy systems more reliable and sustainable.

We can outline the energy and climate change targets for the year 2020 established by European Council as follows:

Reduce the emission of greenhouse gases by **20%**

Increase the share of renewable energy sources to **20%** of total energy production

Reduce energy consumption by **20%** through increased energy efficiency

Within the framework of the Eco-design regulation, the EU is targeting 2020 energy savings of 40 TWh from water pumps and 24 TWh from circulators (European Commission, Directorate-General for Energy, 2010). In this fashion, it is estimated that, by 2020, Europe's carbon emissions will have been reduced by 29 million tons. Within this scope, the Eco-design regulation contains legal provisions regarding products' energy consumption and potential for conservation.

The ErP - Energy Related Products Directive, which is included within the framework of EU regulations, specifies environmentally friendly design standards and requires that producers increase the energy efficiency of their products and reduce their negative environmental impact.

When making decisions, Standart Pompa in particular follows the targets of these regulations and energy policies and, as a company, places great importance on them.

> Eco-design



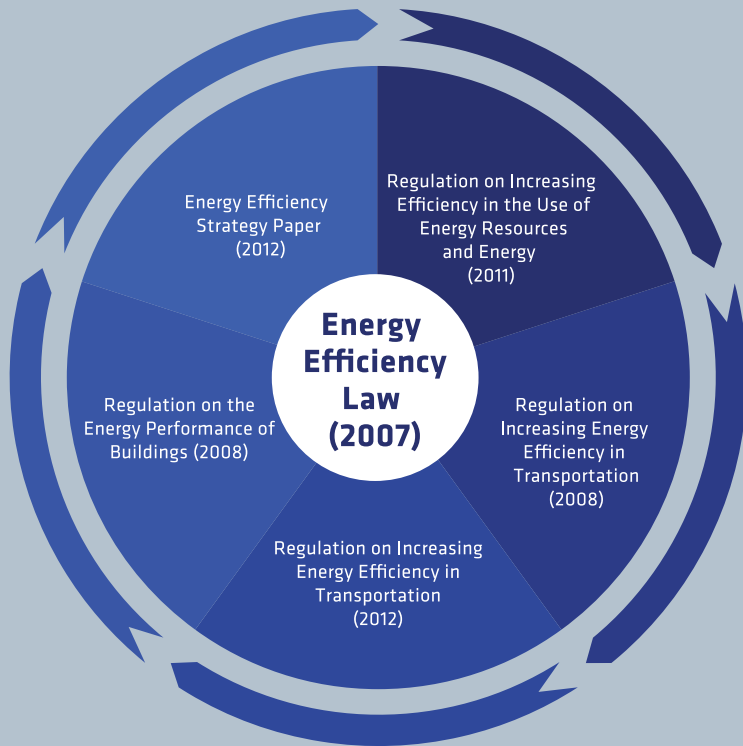
The basis of **Eco-design** is generating maximum benefit using the minimum amount of energy. Eco-design criteria have been established via European Union directives and standards. The 2009/125/EC regulation issued by the European Union has been incorporated into domestic law in Turkey by an ordinance of the Ministry of Science, Industry and Technology.

Standart Pompa continuously monitors the latest developments and ensures their implementation through our internal audits. We seek to further raise this awareness through on-going training. We apply Eco-design criteria both in our products and in our production environment.

By using the right technology, we manufacture in an environmentally friendly manner, designing and delivering products to our customers in the same fashion. Within the framework of Eco-design we offer effective solutions for all the processes from a product's design, through to its use and eventual recycling.

➤ Legal Frameworks and Regulations

These regulations set out the minimum efficiency categories that products must achieve.



Relevant Institutions



Current Regulations

» Water Pumps - Regulation EU 547 / 2012

Required minimum energy efficiency categories for circulators: EEI (Energy Efficiency Index)
EEI_0,27 as of January 1, 2013
EEI_0,23 as of January 1, 2015

» Circulators - Regulation EU 622 / 2012 (Previously EU 641 / 2009)

Required minimum energy efficiency categories for circulators: EEI (Energy Efficiency Index)
EEI_0,27 as of January 1, 2013
EEI_0,23 as of January 1, 2015

» Electric Motors - Regulation EU 640 / 2009

Applicable efficiency indexes for electric motors:
IE4 = Super Premium Efficiency
IE3 = Premium Efficiency
IE2 = High Efficiency
IE1 = Standard Efficiency

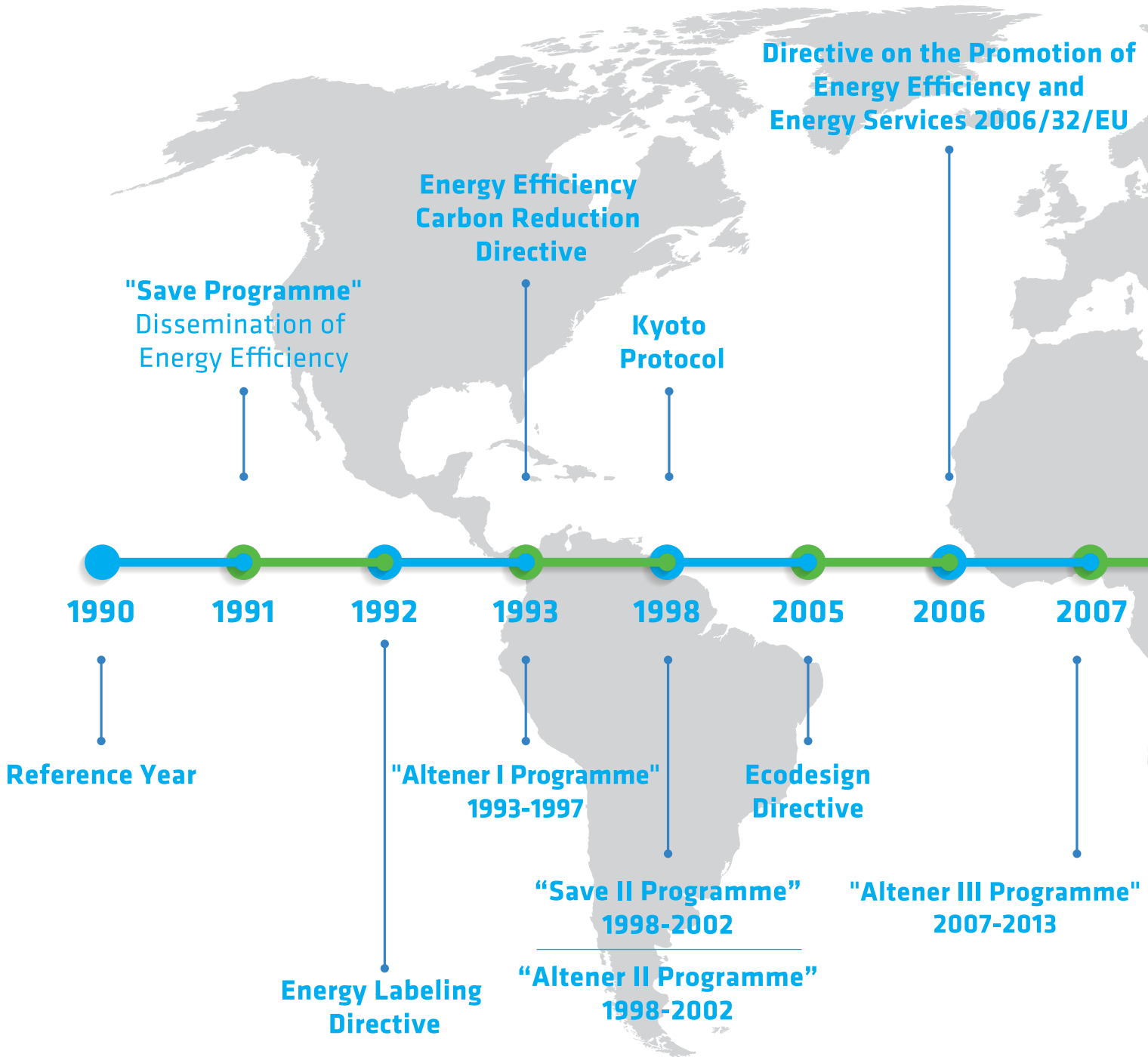
As of January 1, 2015, IE3 or IE2 for Units with Frequency Inverters IE2 P = 7.5 kW – 375 kW
As of January 1, 2017, IE3 or IE2 for Units with Frequency Inverters IE2 P = 7.5 kW – 375 kW

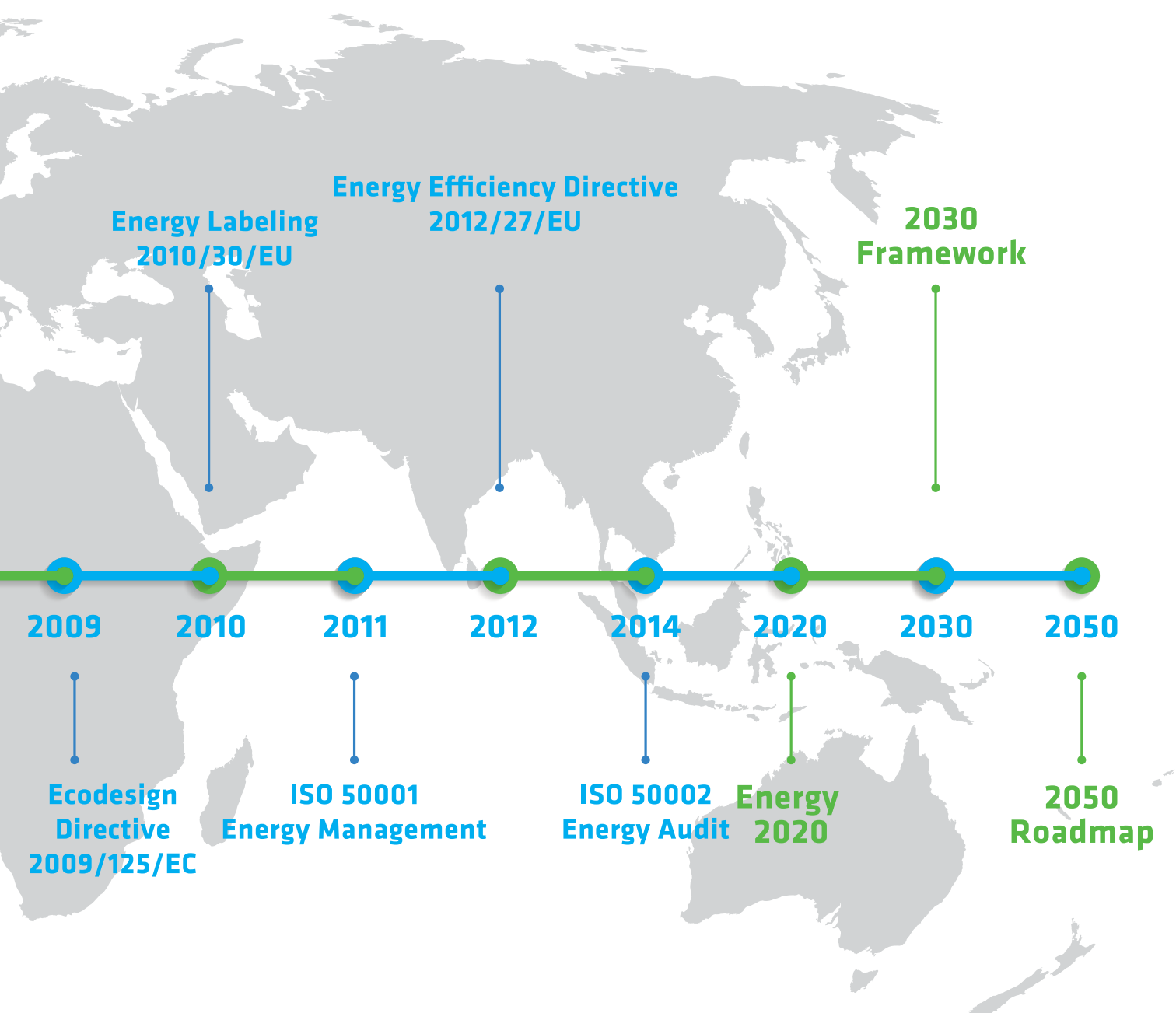
» Regulations currently being drafted:

Waste water pumps - ENER Lot 28
Large water pumps - ENER Lot 29



> ENERGY MANAGEMENT & THE ENVIRONMENT





Energy Labeling
2010/30/EU

Energy Efficiency Directive
2012/27/EU

2030 Framework

2009

2010

2011

2012

2014

2020

2030

2050

Ecodesign Directive
2009/125/EC

ISO 50001 Energy Management

ISO 50002 Energy Audit

Energy 2020

2050 Roadmap

03

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ENERGY MANAGEMENT SYSTEM



> Energy Management System



“ An Energy Management System systematizes the effective use of energy and natural resources. ”

> ISO 50001

In today's competitive marketplace, companies face serious barriers to increasing their profitability. Organizations that develop energy conservation projects and use the energy they need in the most efficient fashion possible, in addition to protecting the environment, also secure important cost savings.

ISO 50001 is based on reducing costs and greenhouse gas emissions and, by defining the systems and procedures required for effective energy management, assists in the establishment of a system.

ISO 50001 is the latest iteration of international standards and procedures and represents the newest and best practices. The standard defines the requirements of an Energy Management System (EnMS).

It assists organizations in developing and implementing energy policies. It defines the most important areas of energy consumption and identifies energy management tools, targets and programs. In order to establish a strong energy management policy,

Standart Pompa recommends pump system studies conducted within the framework of an ISO 50001 Energy Management Program.



> Carbon Footprint

Carbon Footprint is the name given to the measurement, in terms of carbon dioxide, of the amount of greenhouse gases emitted by a person, organization or product.

Greenhouse gases, as defined by the Kyoto Protocol are listed below:

Symbol	Name	CO ₂ Equivalent
CO ₂	Carbon dioxide	1
CH ₄	Methane	21
N ₂ O	Nitroxide	310
HFCs	Hydrofluorocarbons	140 ~1700
PFCs	Polyfluorocarbons	6500 ~9200
SF ₆	Sulphur Hexafluoride	23900

* Chart 1 : Greenhouse gases as outlined in the Kyoto Protocol



The increase in the amounts of carbon dioxide and methane gas in the atmosphere is causing a rise in the earth's surface temperature. For this reason, our carbon footprint is considered the primary cause of global warming. Global warming, simultaneously, is responsible for the melting of the polar ice caps and leads to climate change.



Reduction of our carbon footprint requires that we develop a new energy usage culture. Every individual, product and company has a different carbon footprint and each is responsible for analyzing the impacts of this.

The factors that influence the greenhouse gases a product emits into the atmosphere during its life cycle can be listed as follows:

**•Raw material •Energy Use •Product/Service •Land Use •Transportation •Storage
•Use/Operation •Disposal**

In order to fulfill their responsibilities to the environment, help create a more livable world and ensure that future generations inherit a cleaner world, both individuals and corporations should be aware of their carbon footprints. In order to achieve this, companies should calculate and monitor their carbon footprints.

In the near future, the carbon footprint calculation as set forth in the Kyoto Protocol will start to be audited.

National policies and legal regulations will require that every company calculate its carbon footprint or hire consultants to do so.

The international standards used to calculate carbon footprint are as follows:

•GHG Protocol •PAS 2060 •ISO 14064



“

In Europe, 80% of greenhouse gas emissions are the result of energy usage. For this reason, intelligent energy use is essential for sustainability. In addition to generating significant financial savings, concepts like carbon footprints, energy conservation, renewable energy, energy efficiency and sustainability promote a cleaner, healthier world.

”

04

Standart
Yaşamı Kori! Save Life!





**STANDART
POMPA
&
ENERGY
EFFICIENCY**



> Standart Pompa Eco Series ERP Compliant Technology

Integrated Eco-design Offers High Levels of Energy Efficiency

ECOSNM



ECOSNL



ECOSNT



“ Every aspect of the Standart Pompa Eco Series has been optimized to minimize energy consumption, provide reliable operation and ensure high performance.

Our products and production are designed with an emphasis on energy efficiency.



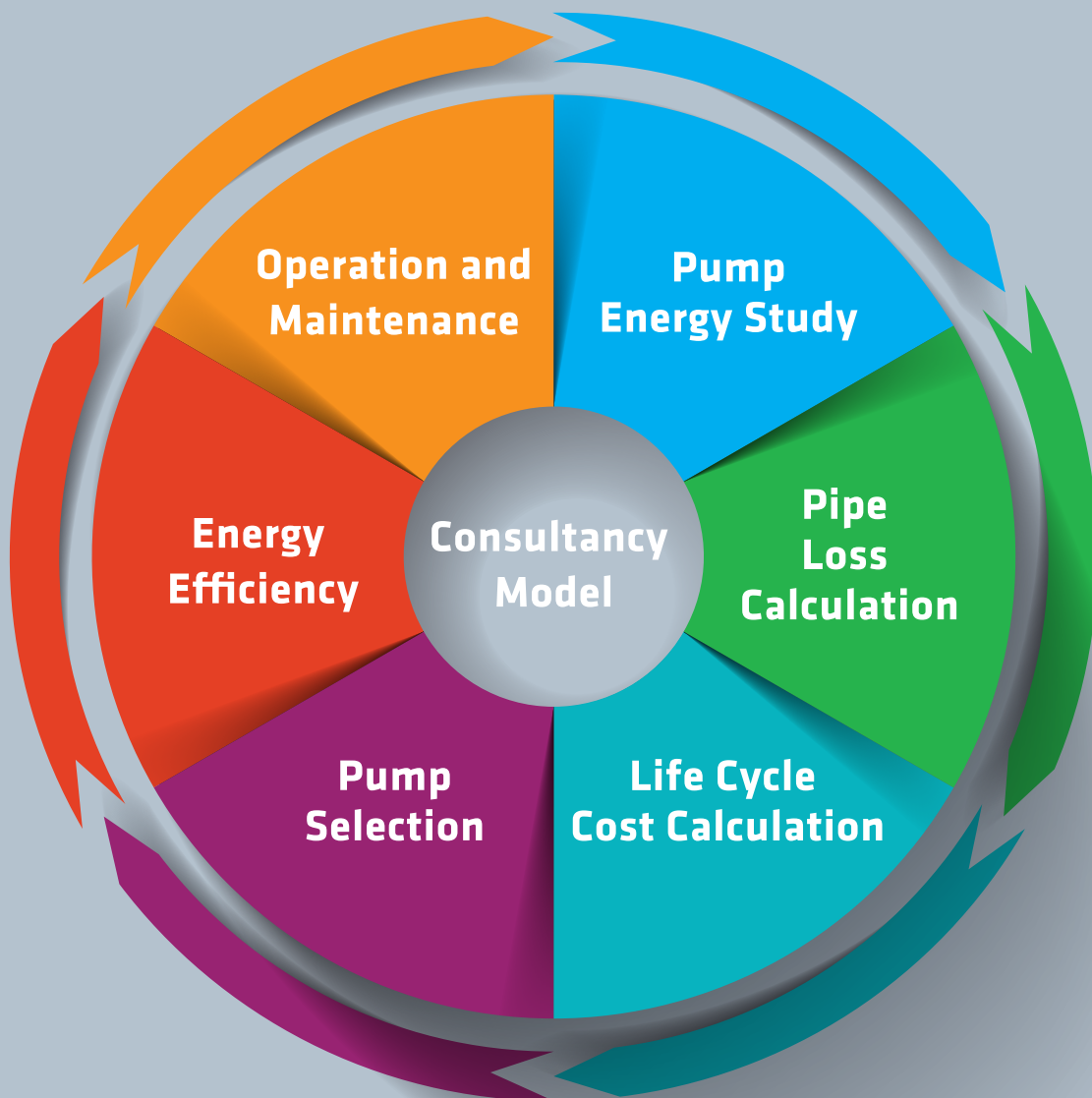


Energy consumption generally accounts for 85% of the lifetime cost of a pump. The Standart Pompa Eco Series delivers energy efficiency that can reduce lifetime cost by up to 40%.



> Energy Efficiency Services

A pump with a high energy efficiency rating provides important opportunities to generate power savings. **Standart Pompa** also provides consulting on a range of topics to help promote efficient energy use and ensure the reliability of your processes.



➤ Pump Energy Study

Energy studies are carried out in two phases: A Preliminary Study and a Detailed Study



Preliminary Study

- » Evaluation of the pump's working environment
- » Site inspection
- » Process evaluation
- » Identification of energy efficiency focal points
- » Preparation of the preliminary evaluation report

Detailed Study

- » Identification of system characteristics
- » On-site pump test
- » Evaluation of the pump-process relationship
- » Development of a recommendation based on measurement results.
- » System and pump improvement recommendations
- » Lifetime cost analysis
- » Pay-back period calculation
- » Determination of annual energy savings
- » Preparation of the detailed evaluation report

> Training Programs

By complementing these studies with training, awareness is raised and significant gains are achieved in terms of effective energy usage and efficient pump operation. The content of these training programs can be tailored to the needs of your personnel and conducted on site by subject matter expert trainers.

Fundamental
Pump Concepts

Operation and
Maintenance
of Pumps

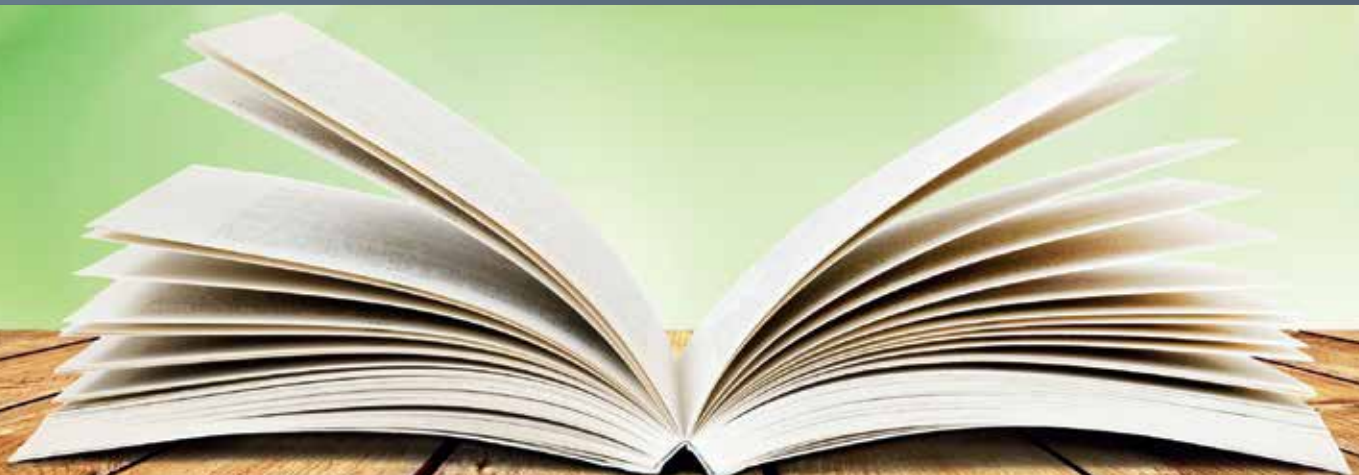
Energy
Efficiency
in Pumps

Facility
Design

Pump
Study

Regulations and
Ordinances
Concerning
Pumps

Energy efficient pump solutions that use just the right amount of energy to get the job done give you the chance not only to save money but also to leave a better world for our children. **Standart Pompa's** experts would be pleased to conduct a free inspection and advise you on the optimal solution for your needs. Just call **+90 (216) 466 8900**.



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