



Possibility in every drop

GRUNDFOS NET ZERO JOURNEY

Sam Soo

Area Managing Director, IND South Asia

Focus Countries:

Singapore/Thailand/Indonesia/Vietnam/Malaysia



Opening Speech and Grundfos Introduction

GRUNDFOS 

Possibility in every drop

Welcome onboard Grundfos Net-Zero Journey



Grundfos


Technology
Innovation

Grundfos
Net Zero Journey

Sustainability



A global water solution company ...

 **1945** when it all started

 **#1** pump manufacturer in the world

 **16+ M** units produced per year

 **20,000** employees

 **100+** companies worldwide

 **34.4 bDKK** net turnover in 2023

... and the most global pump company in the world



Domestic Building Services

for Installer customers and
Distributor channel partners



Water Utility

for municipal, groundwater and irrigation
end-users and channel partners



Commercial Building Services

for distributors, installers and contractors,
consultants and specifiers,
and facility management companies



Industry

for Food & Beverage, Mobility,
Pharmaceuticals, Electronics, our channel
partners and Industrial Manufacturing OEMs

Industry APAC in short

500+

E2E INDUSTRY EMPLOYEES

211,000

UNITS SOLD IN 2023

5,400+

CUSTOMERS

2

PLANTS

PRESENT IN

13 COUNTRIES

Sales Area

Japan | East Asia | South Asia | Oceania

Industry Plants

Hamamatsu, Japan | Miaoli, Taiwan

Key Focus Verticals

Semiconductor | Food & Beverage | Mobility | Pharmaceutical | Energy



A Snapshot of INDUSTRY in South Asia



332

mDKK TURNOVER (2023)

31,000+

UNITS SOLD
IN 2023

5

COUNTRIES WITH
LOCAL SALES OFFICES

1800+

CUSTOMERS

Sales Area

Indonesia | Malaysia | Singapore | Vietnam | Thailand

Key Focus Verticals

Semiconductor | Food & Beverage | Mobility | Pharmaceutical and more...





Sustainability is at the heart of everything we do

Climate action

Decarbonising the flow of water through energy-efficient pump and water solutions.

Water action

Reducing our footprint and enabling efficient water management and water reuse.

Circular business

Embedding circularity throughout the product life cycle, from design to next-life offering.

Water access

Providing access to safe water for people in need through water solutions and partnerships.



We have a long-term commitment to net-zero



Approved Science Based Net-Zero
Targets



SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

By 2030
50% emission
reduction in operations

25% emission reduction
across value chain

By 2050
>90% emission
reduction in operations

>90% emission reduction
across value chain

We have a strong focus on customer needs ✕

FOOD & BEVERAGE



MOBILITY



SEMICONDUCTORS



PHARMACEUTICALS



and more...



and more...

VERTICALS

CUSTOMER

What if





Our strategic Brand foundation

Endline

Possibility
in every
drop

Promise

To respect,
protect
and advance
the flow of water

Purpose

We pioneer solutions
to the world's
water and climate challenges
and improve
quality of life for people

An aerial photograph of a vibrant turquoise river flowing through a dense, lush green forest. The river is surrounded by rocky banks and creates white rapids as it moves through the trees. The overall scene is serene and natural.

Thank You!



GRUNDFOS 

Possibility in every drop

Thunpisitpon Khumnopkunchok

Sales Engineer , IND South Asia - Thailand



**Grundfos
Net-Zero
Journey
+
Business
Opportunities
in
Sustainability**

GRUNDFOS 

Possibility in every drop



Sustainability and our approach to climate action at Grundfos

GRUNDFOS 

Possibility in every drop



**Climate action
& impacts**



**Population &
urbanisation**



**Natural
resources**



**Digital
transformation**

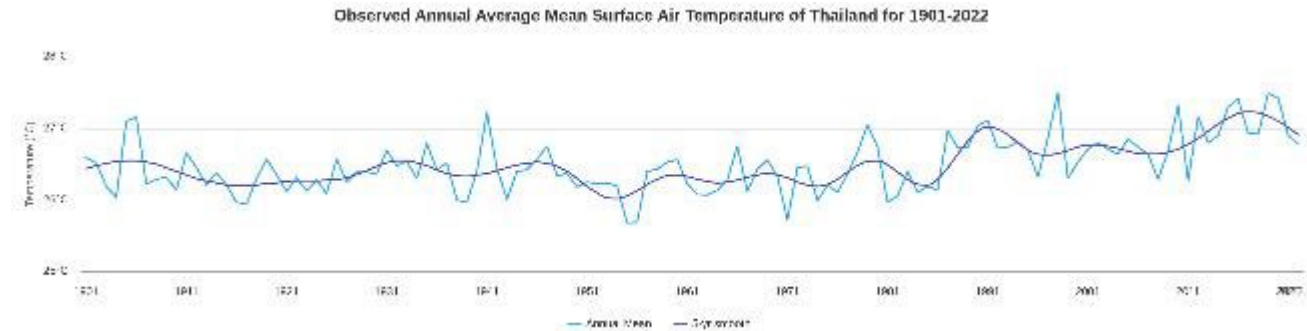
**Our
world the
day after
tomorrow**

Impact of Climate Change in Thailand in 100 years



Biodiversity
Heatwave
Floods
Typhoon
Heavy Rainfall
Energy Transition
Deforestation
Coastal Erosion

Rising Trend of Annual Temperature in Thailand



Heatstroke kills 61 in Thailand so far in 2024

Thailand hit with more flooding amid heavy rains

Against the tide: Thai 'floating temple' defies coastal erosion



WATER AND ENERGY
ARE STRONGLY CONNECTED,
**WE NEED A GLOBAL
AGENDA FOR BOTH**





Science Based Targets provide a clearly-defined pathway for companies to reduce greenhouse gas (GHG) emissions, helping prevent the worst impacts of climate change and future-proof business growth.

Why SBT and What is the meaning of “Science Based Targets”?



SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION



...We All Play An Active Role To Secure



POLITICIANS

MUST LEGISLATE TO
SECURE OUR WATER
& USE OF HIGH
EFFICIENCY
PRODUCTS



CITIES

MUST IMPLEMENT
AVAILABLE
SOLUTIONS



COMPANIES

MUST PRIORITISE
RESPONSIBLE WATER
& ENERGY
SOLUTIONS



PEOPLE

MUST
ACKNOWLEDGE THE
VALUE OF WATER &
USE OF ENERGY

REDUCTION OF
DISCHARGE OF CO2
BY USING HIGH
EFFICIENCY
PRODUCTS &
SOLUTION

Thailand Net-Zero Emissions towards 2065



Thailand Climate Change Master Plan



Climate Change Resilient Plan towards 2030 and 2050



Risk maps and assessment of local biodiversity and resilience



Integrated adaptation plan with carbon emissions and biodiversity linkage



Climate change plan implementations to national social, environmental and governance initiative



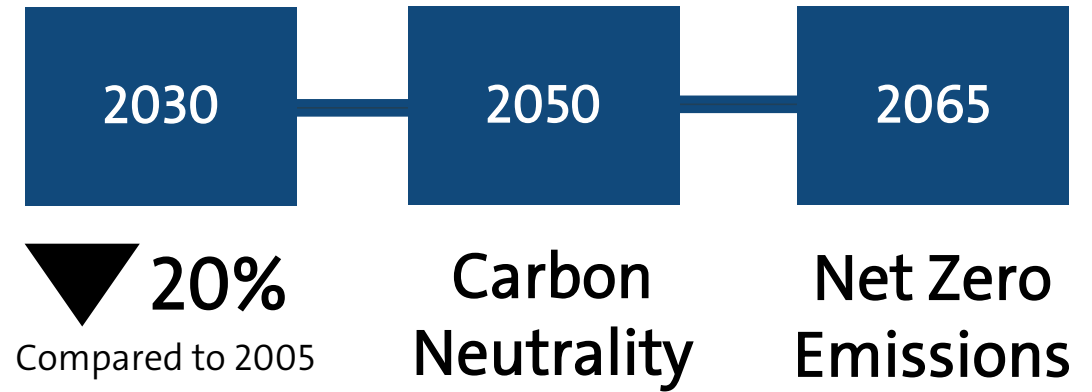
Thailand 20-Year Energy Efficiency Development Plan



Identify potentials for energy saving in the industrial sectors



Energy efficiency implement with focus on re-integrated equipment and energy efficiency resources standards



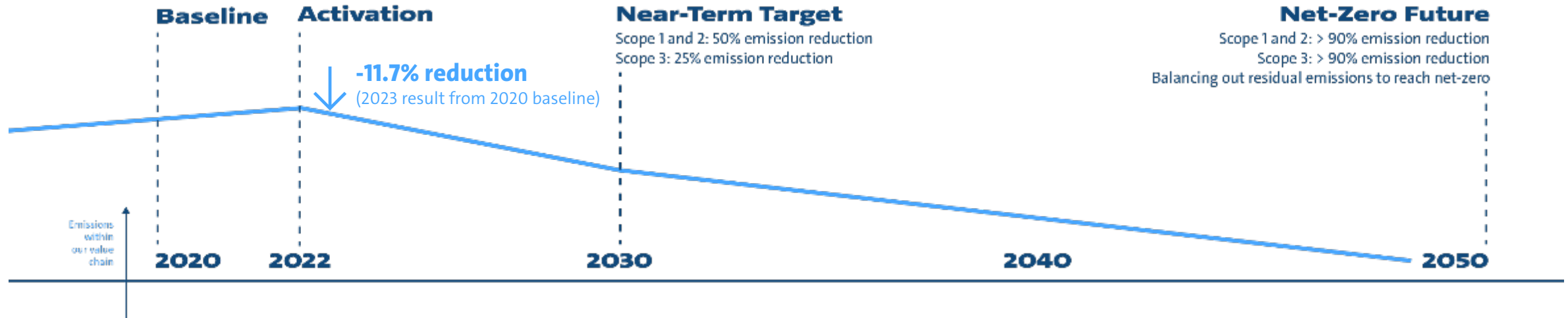


Our purpose is to pioneer solutions to the world's water and climate challenges and improve quality of life for people

Poul Due Jensen
CEO and Group President

We are the first water solutions company with a validated science-based net-zero target

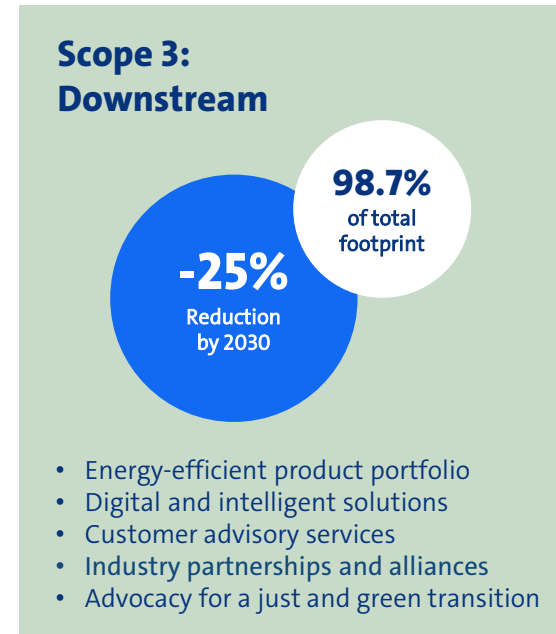
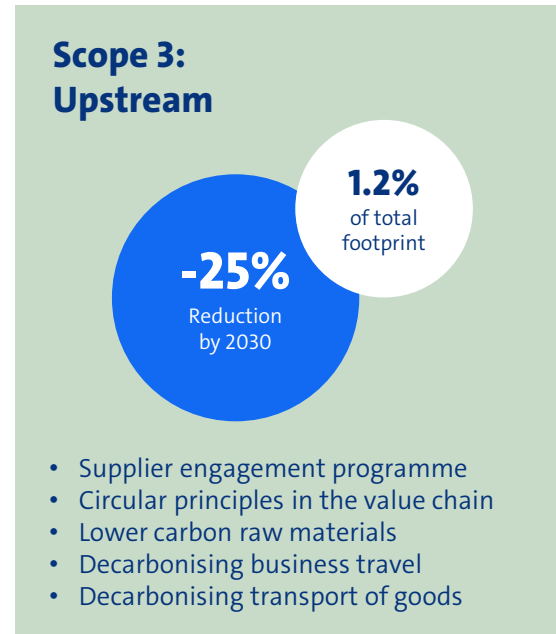
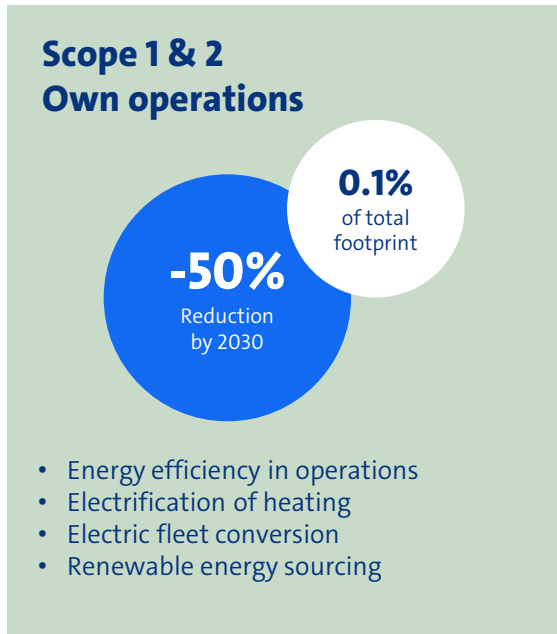
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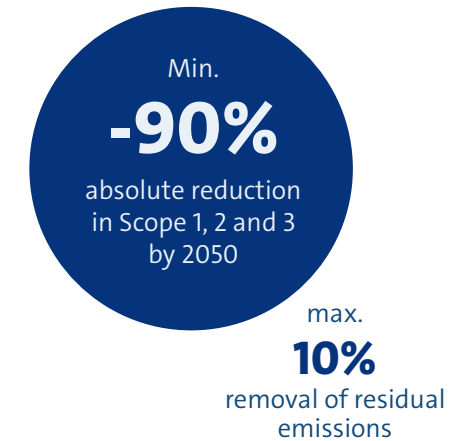
Our science-based net-zero journey



Decarbonisation roadmap towards 2030 and beyond.



Net zero by 2050



Baseline (2020):
119,720,000 tCO₂e



SBT: A Commitment from APAC based companies



With more business activities in APAC, the Asia based company play an important role in contributing to the SBT.

Global companies also have operations in APAC and SBT will be extended to their operation in APAC.



SBT Opportunities in Thailand



Int. Companies

76



Sites

180+



Thai Companies

18



Sites SQF

12M



Mobility



Autoliv



Semicon & Electronics



Food & Beverage



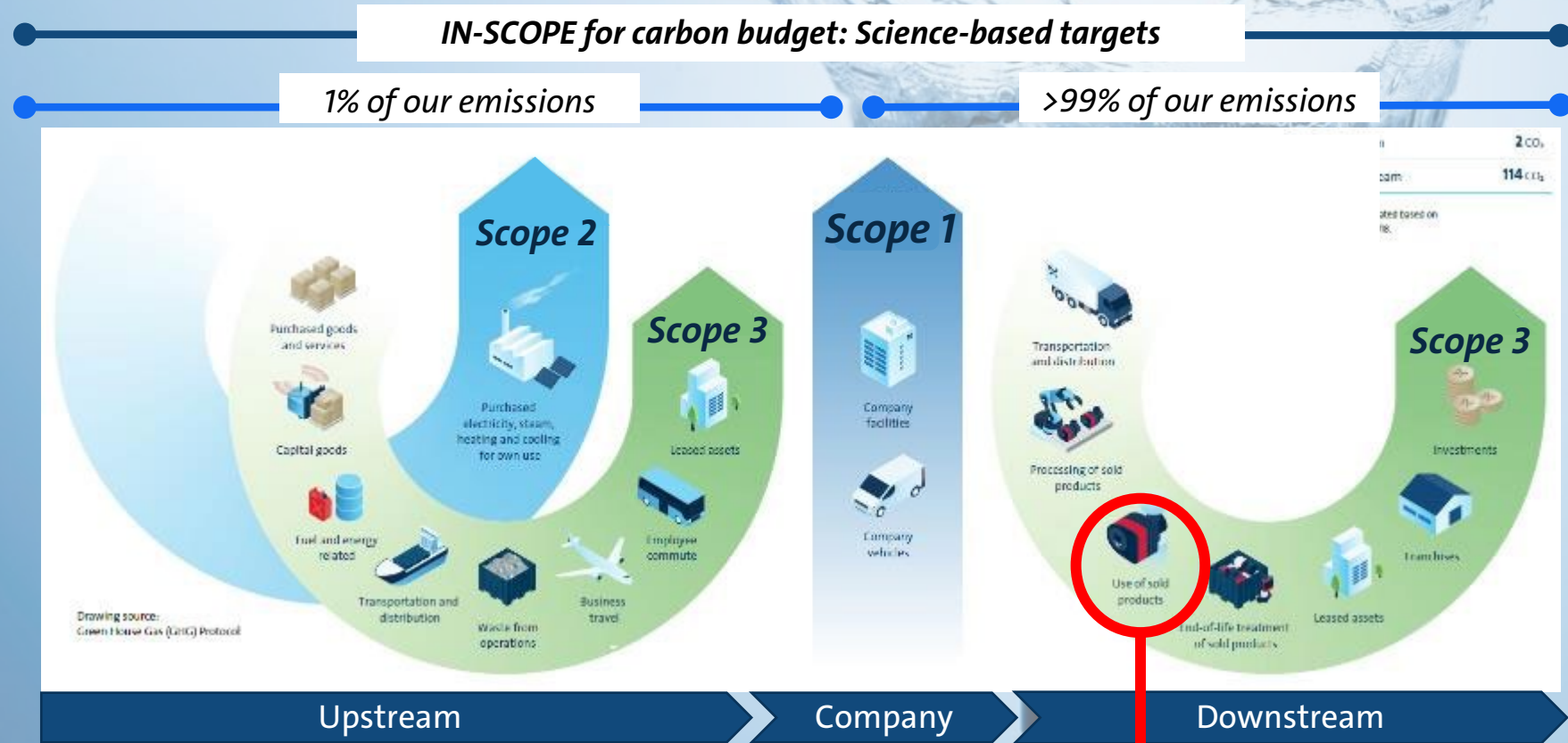
Chemicals & Pharma



SBT : What is in-scope of a Science Based Targets?



What is our **ROLE** in the scope as a Manufacturer/Distributor or as a supplier to our customers?



Use of Sold Product

- GHG emissions from electricity consumption during the lifetime of the product
- Estimated to be 99% of Grundfos' total emissions in SBT scope



**Intelligent e-pumps
and system design
can reduce the
pumps' energy
consumption with an
average of**

37%

Source: Grundfos calculation based on data in "European Commission, 2018. Ecodesign Pump Review" report.

Industry uses a lot of energy – with significant environmental impact

38%

of the global total energy use comes from the industrial sector*

10%

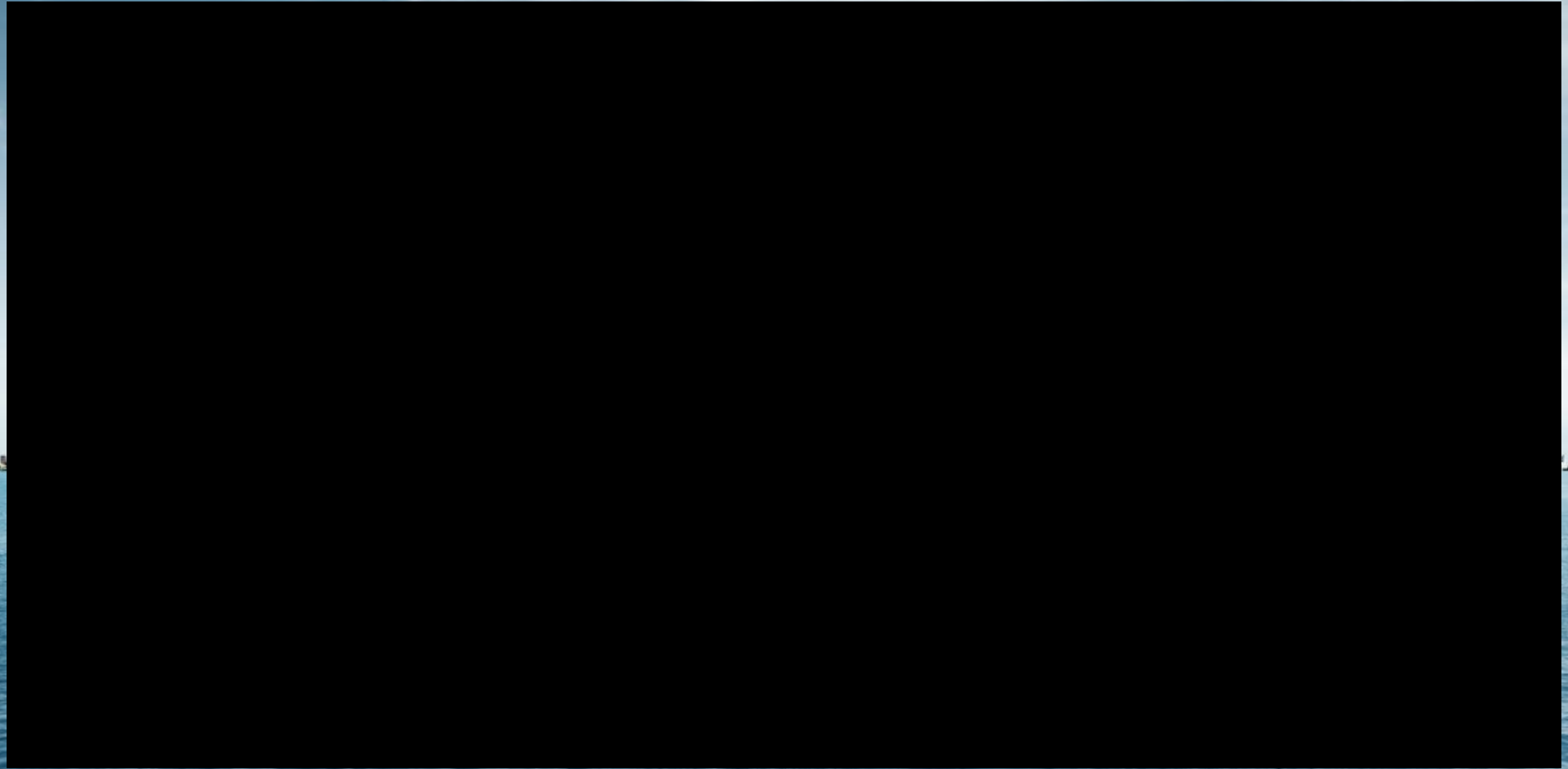
Of the energy consumed by Industry is related to pumps and pump systems

By 2030 Energy consumption in Industry is expected to grow by

35%

Source: International Energy Agency's (IEA) Energy Technology Perspectives 2020 report, Internal expert assessment, Grundfos

SBT Opportunities : Future of Asia





ACCOUNT FOR A MASSIVE 10% OF THE
WORLD'S ELECTRICITY CONSUMPTION



SBT : One Offering Portfolio



Grundfos Solutions Offering on Sustainability Co-creation with You!

Standard High Energy
Efficiency Products (S)



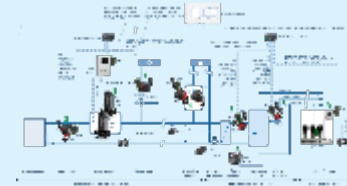
E-Products for different
Applications (E)



Intelligent SOLUTIONS
(i-Solution) (I)



Digital Solutions
(D)



Network &
Interface



Professional Service &
Solutions (S)



System Analysis &
Optimisation





**PUMP SOLUTIONS ARE CENTRAL TO
OVERCOME THE GLOBAL WATER & ENERGY
CHALLENGES**

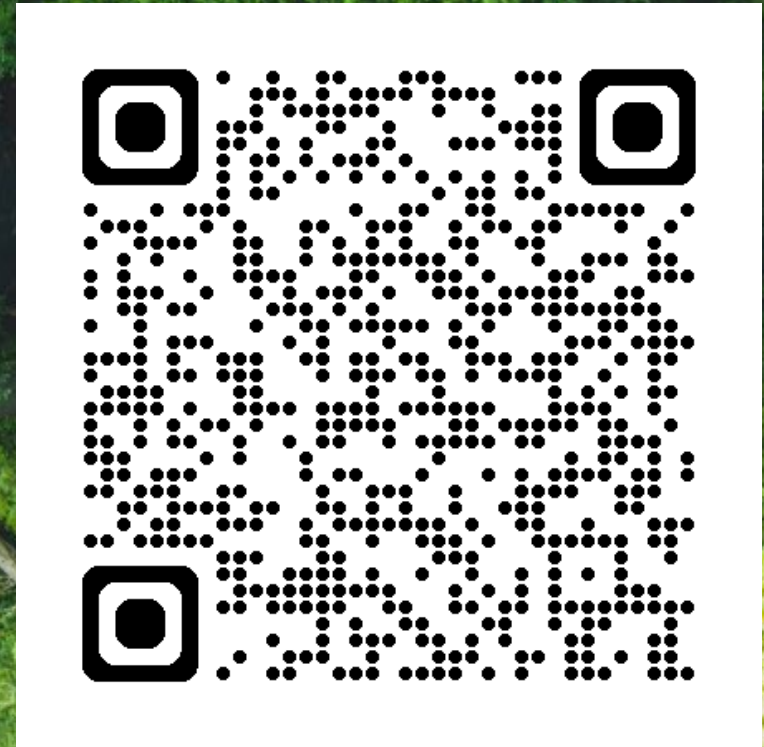
**ACCOUNT FOR A MASSIVE 10% OF THE
WORLD'S ELECTRICITY CONSUMPTION**

**ONLY WITH MORE ENERGY EFFICIENT
PUMP SOLUTIONS CAN THIS NUMBER BE
REDUCED SIGNIFICANTLY**



**For more information,
please scan:**

**Thanks for your
participation!**



Kittaned Pornchotesuriyawut

Sales Manager , IND South Asia



**Grundfos
Innovation
to Energy
Efficient
Solutions**

GRUNDFOS 

Possibility in every drop

Agenda



- What comprises of Grundfos iSOLUTIONS?
- Innovative solutions to optimize pumping systems





**Intelligent E-pumps
and system design
can reduce the
pumps' energy
consumption up to**

37%

Source: Grundfos calculation based on data in "European Commission, 2018. Ecodesign Pump Review" report.

Grundfos iSOLUTIONS helps you to overcome these challenges while increasing reliability and system performance



Grundfos iSOLUTIONS helps you **optimise** your water reuse or decentralised water treatment system more **effectively and cost-efficiently** while at the same time securing the right water quality and reducing overall TOTEX.

Common challenges in pumping system:

- Oversized pumps
- Uncontrolled pumps
- Pumps with low efficiency (Total efficiency)

Grundfos iSOLUTIONS



CONTROL

Hydro-MPC
Control MPC
Control DC
LC231/241



COMMUNICATION

Modbus RTU/TCP
Profibus / Profinet
BACnet
LON
Ethernet IP
3G/4G

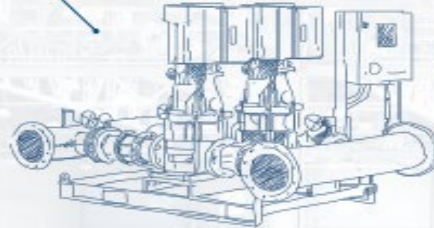


INSTRUMENTATION

Pressure
Level
Flow
Temperature



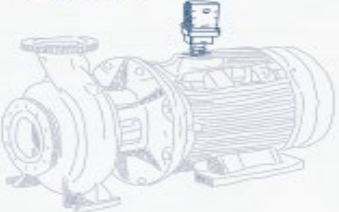
E-PUMPS



Digital Services

GMH

Unbalance / Misalignment
Rotating Mechanical Looseness
Vibration
Temperature
Magnetic Field
Bearing Wear
Electrical Faults



GIM

Vibration
Temperature
Dry Running
Cavitation
Water Hammer
Unbalance
Motor Speed



Grundfos Pumps

We have the largest portfolio in the market



CR



NB(G)/NK(G)



MACHINE
TOOLS



DOSING &
DISINFECTION



BMS

And much more...

Pump as a Service



RENTING/RENTAL

Pay a monthly fee to use one of our pumping systems. We include transfer and commissioning, maintenance, guarantee and also the uninstall service and the return when the contract is over.

GRUNDFOS ENERGY EARNINGS

Forget about investments! We invoice you a monthly fee depending on your energy savings. When the contract is over, pumping equipment will belong to you.

FLOW/PRESSURE-AS-A-SERVICE

Pay a monthly fee and Grundfos will ensure the Nominal Flow or Pressure agreed with you. No matter the equipment we need for that. During the given period of time, Grundfos will maintain and guarantee the equipment. When the contract is over, pumping equipment will belong to you.

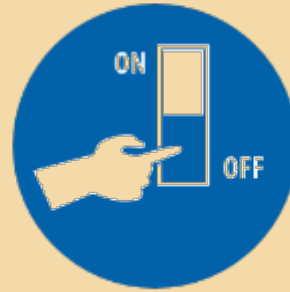
3 ways of optimizing a pumping system

- 1) Improvement in overall efficiency
- 2) Matching pump operation to user demand (Load Profile)
- 3) Protection & Monitoring

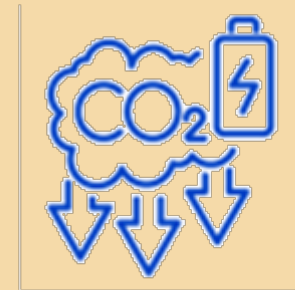
1) Product Improvements



The **NEW** MGE – What's **NEW**?



SAFE TORQUE OFF (STO)*



HIGH EFFICIENCY (IE5)



BLUETOOTH



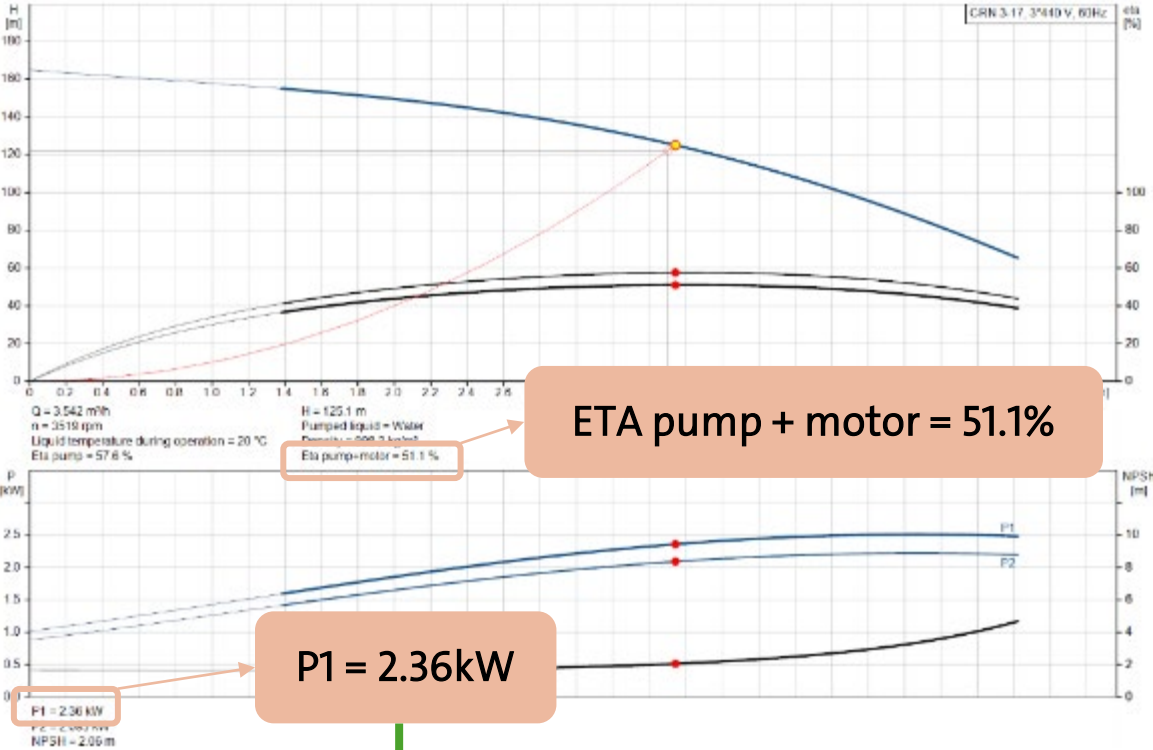
IN-BUILT MODBUS

*All 3 phase MGE will come with STO. 1 phase is not available

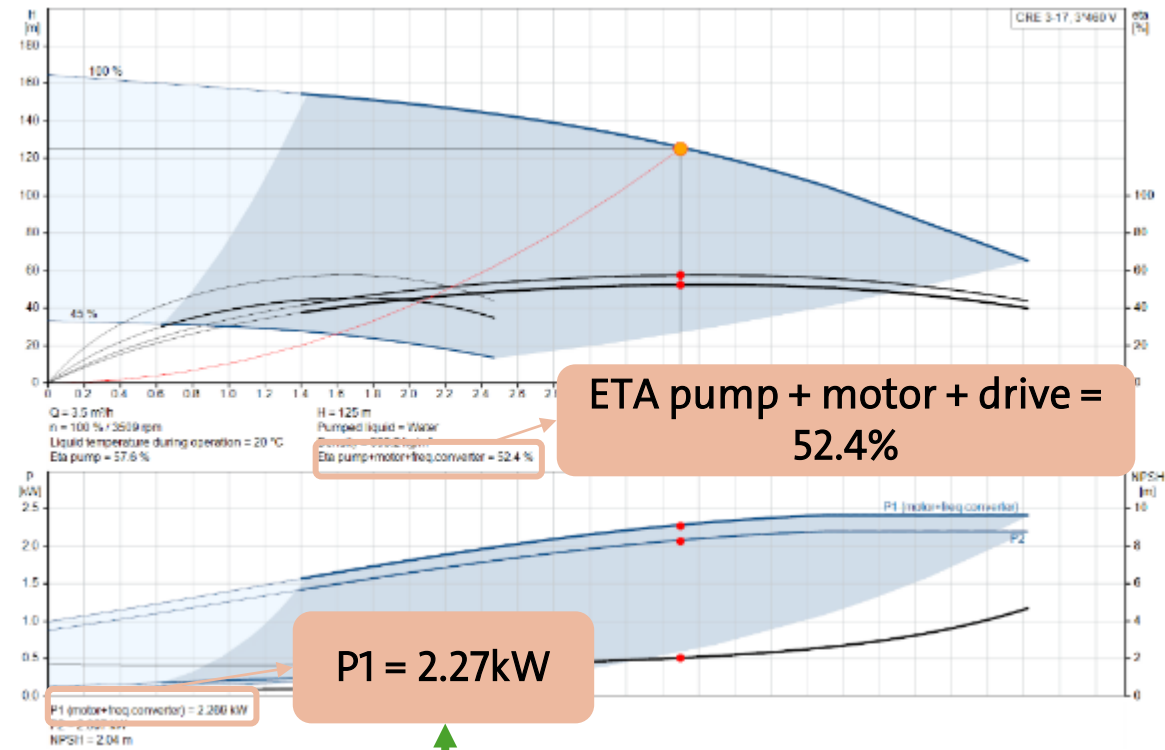
Example: CRN 3-17 vs CRNE 3-17



CRN 3-17



CRNE 3-17



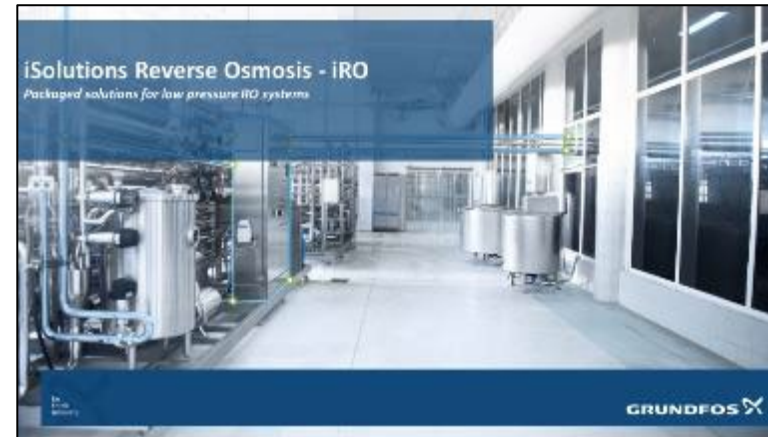
5% savings in electrical consumption

2) Optimized pump control



Industrial Heating – iBoilers

- Optimized control by maintaining the level in the boiler



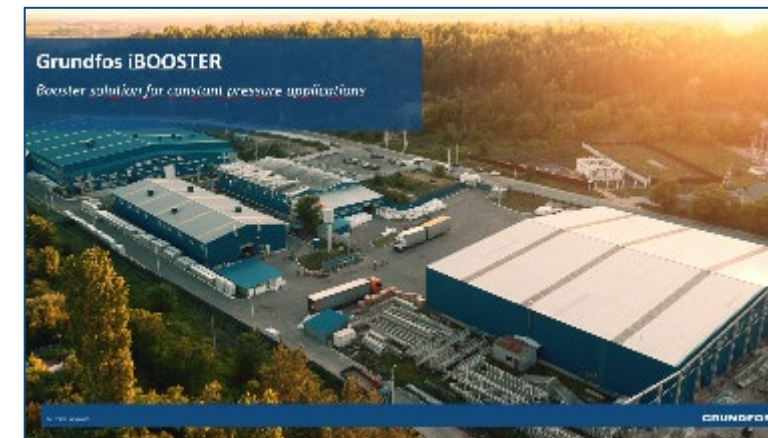
Water Treatment - iRO

- Optimized control by maintaining the efficiency of the membrane



Industrial Cooling

- Optimized control by maintaining the temperature in cooling towers



Boosting / Wash & Clean

- Optimized control by maintaining the pressure in booster systems

Industrial Heating

Control Mode: Constant Level

How to Control:

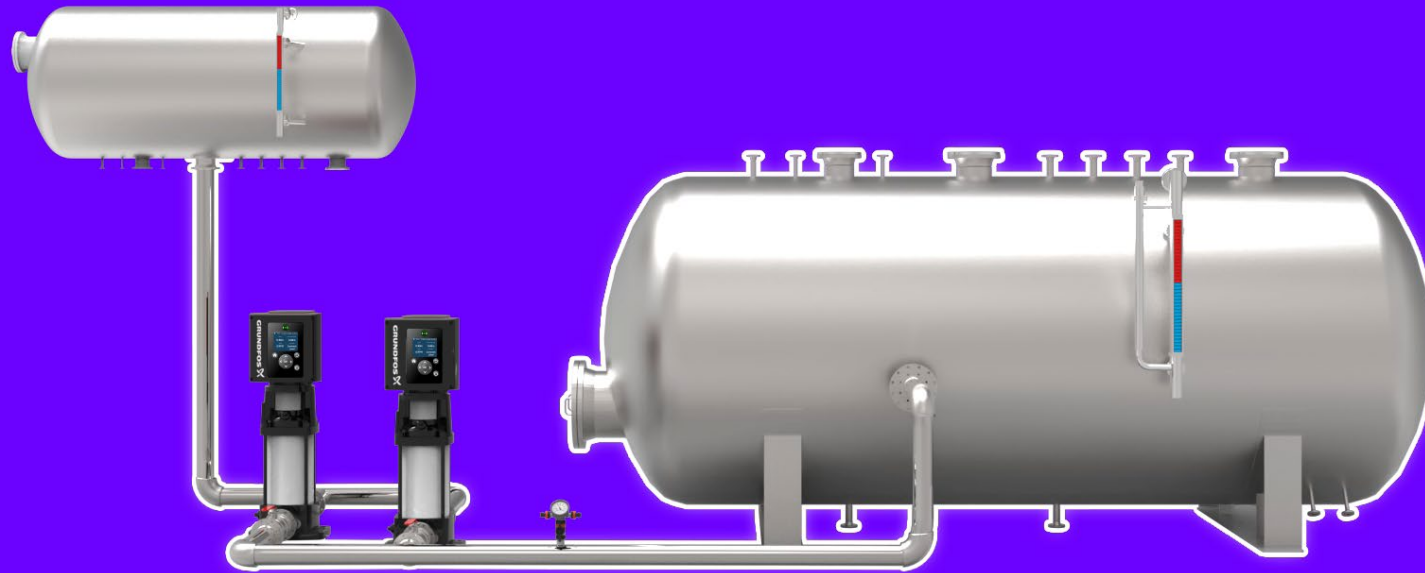
- Speed up when there is increased steam consumption
- Speed down when there is low activity in factory

Savings come from:

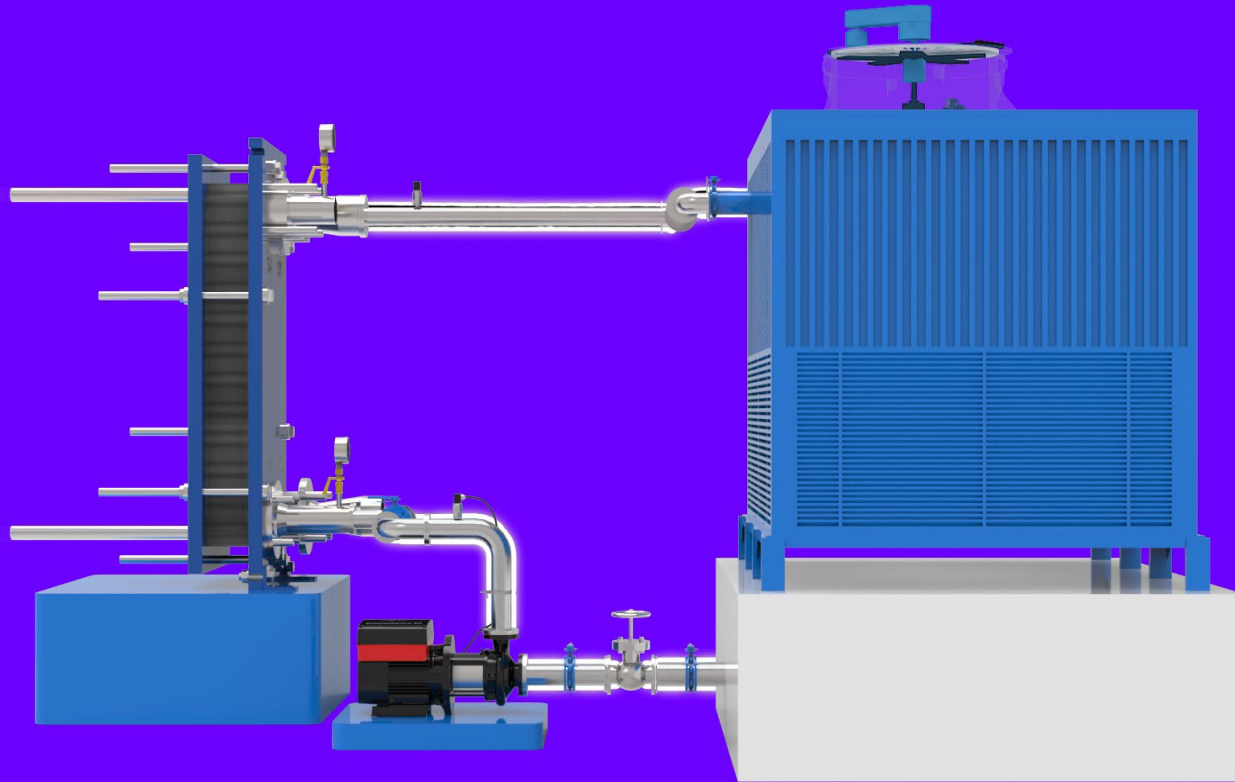
- Maintaining the water level in the boiler to avoid over-pumping
- **Slow feeding** of water into boiler to avoid huge temperature drop
- Running at duty point

Benefit to user:

- Optimized steam performance
- Electrical savings
- Reduction in CO2 emission



Industrial Cooling



Control Mode: Constant Temperature

How to Control:

- Speed up when there is increased activity / traffic in building
- Turn on cooling tower fan when temperature is not effectively maintained
- Speed down when there is reduced activity in factory

Savings come from:

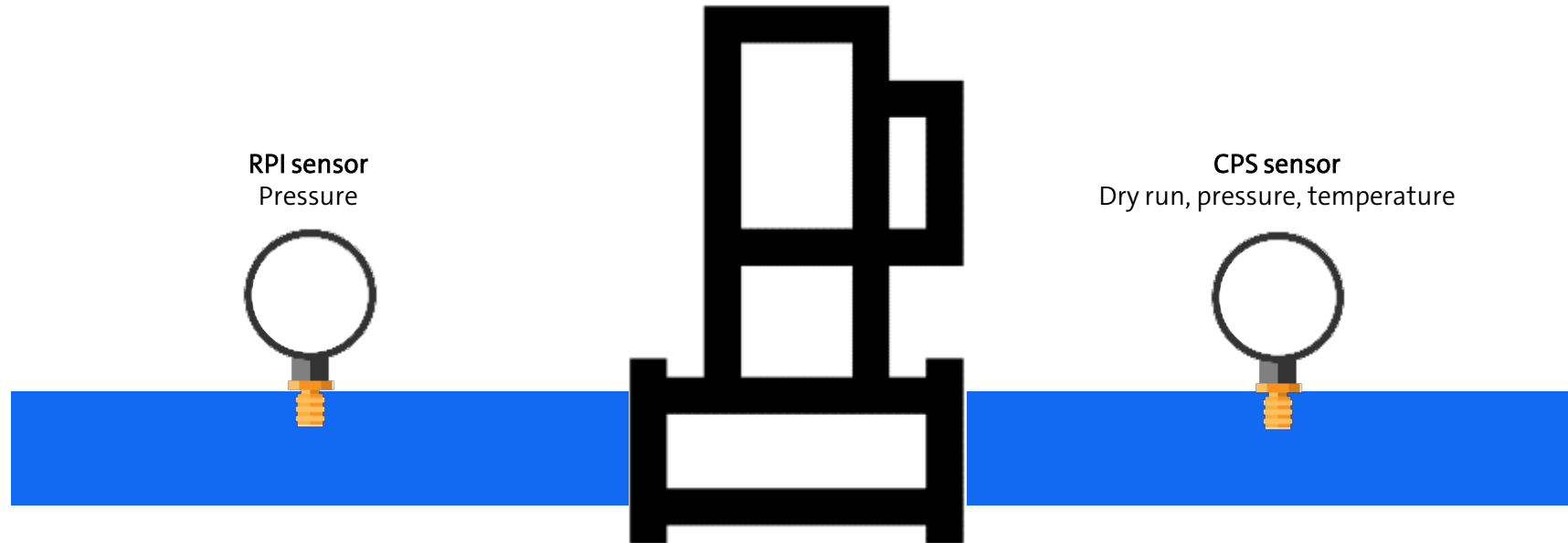
- Variable speed of the pump instead of running at full load
- Mimicking user demand (load profile)

Load profile for industrial cooling → Running at high flow most of the time

Benefit to user:

- Increased comfort level + effective cooling
- Savings in electrical energy
- Reduction in CO2 emission

3) Protection + Monitoring



With only 2 sensors, we can get:

- Cavitation protection (with the inlet pressure sensor)*
- Run at constant pressure
- Flow estimation
- Dry run protection
 - No leakage (via the dry run sensor reading)
 - Running against closed valve (with the temperature reading)*

*Used together with 'Limit-exceed function'

Making Cooling Sustainable





Thank You!

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Possibility in every drop