

ENERGY RENOVATION GUIDE

Unlock the business potential of energy renovations



be
think
innovate

GRUNDFOS 

Help your customers save energy and money

Kickstart your energy renovation business

Did you know that 85-95% of the EU's building stock is expected to still be in use by 2050^(a)? This is a concern for both the climate and building owners as older buildings use up to 20x more energy than newer, energy-efficient ones^(b). With only 1% of these older buildings being energy-renovated each year^(c), there is a huge potential for generating business in the energy renovation market. By taking advantage of this untapped potential, you can help your customers achieve their climate goals, save huge amounts of energy and money, create more comfortable lives for residents, and expand your business. This is an opportunity you do not want to miss!

Start the conversation

This guide is designed to provide you with essential facts regarding energy renovations and help you understand the most common pump challenges and their solutions.

Source:

(a) European Commission: Renovation wave, https://ec.europa.eu/energy/topics/energy-efficiency/energy-efficient-buildings/renovation-wave_en

(b) [dingeo.dk, Energimærke på bolig, https://www.dinego.dk/data/energimaerke](https://www.dinego.dk/data/energimaerke) is changed to: b) Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Brussels 14.10.2020, SWD(2020) 550 final, A Renovation Wave for Europe - greening our buildings, creating jobs, improving lives

(c) European Commission, In focus: Energy efficiency in buildings, https://ec.europa.eu/info/news/focus-energy-efficiency-buildings-2020-feb-17_en

(d) European Commission, The energy performance of buildings directive, https://ec.europa.eu/energy/sites/energ/files/documents/buildings_performance_factsheet.pdf

It will give you a clear, accessible overview of how you can help your customers save energy and increase comfort in residential buildings. We hope it will give you the insights you need to start meaningful conversations with your customers about energy renovation opportunities.

Partner up with us

We are always ready to talk to you about energy renovation business. Book a meeting to explore the many opportunities for growing your business with energy-efficient pump solutions. We can provide consultancy and the technical knowledge you need for optimising energy performance of residential buildings and improving indoor comfort for residents.

[Read more or book a meeting with us.](#)

Buildings are responsible for approximately

40%

of the EU's energy consumption^d

36%

of the EU's CO₂ emission^d





75%

of the EU's building
stock is energy
inefficient ^d

35%

of the EU's
buildings are over
50 years old ^d

Top energy saving challenges

Poorly commissioned HVAC systems

Challenge

- Poorly commissioned HVAC systems lead to energy inefficiency and increased cost for water distribution and energy consumption

Main causes

- Lack of skill or training in commissioning
- Inadequate time or data for commissioning
- Different stand-alone components that need individual commissioning

Recommended solutions

- **MAGNA3** circulator pumps come with an integrated commissioning wizard that is based on the pump's application
- The **GO REMOTE** app gives you a step-by-step guide for correct pump setup and commissioning
- **MIXIT** mixing loop solutions reduce installation and commissioning time by up to 50%



Inefficient pump management in HVAC systems

Challenge

- Inefficient pump management in HVAC systems causes increased operational and maintenance costs

Main causes

- Many pumps in HVAC systems are not provided with or connected to a frequency drive, meaning the pumps run uncontrolled
- Oversized and/or fixed speed pumps or pumps operated in the “wrong” control mode mean they don’t run according to actual system demands
- Many pumps are outdated with inefficient hydraulics and motors

Recommended solution

- Fully controllable **MAGNA3** circulator pumps enable you to optimise pump management and adapt performance according to the load. They also have built-in frequency drive for efficient pumping



There are many ways to reduce energy and water use



HOT WATER

When circulating domestic hot water, **energy loss** typically varies between

30-75%

in high-rise domestic buildings ²



HEATING

80-90%

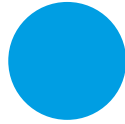
... of multi-family buildings currently have inefficient heating systems, wasting energy and costing their tenants more than necessary ¹



WATER USE

160 l. /person/day

Showers and baths = 35%, toilet flushing = 25%, washing clothes = 14%, dish washing = 8%, drinking & cooking = 5%, cleaning, gardening and other uses = 13% ³



Difficult and complex energy optimisation

Challenge

- Energy optimisation is difficult and complex due to a lack of data and optimisation functionalities, resulting in inefficient HVAC installations and higher operational costs

Main causes

- The HVAC system is controlled by static values that do not change in relation to actual system performance
- Lack of intelligent software or controllers that enable system optimisation

Recommended solutions

- **MIXIT** mixing loop solutions include free monitoring via BuildingConnect. It has more than 100 data points which can be used for energy optimisation processes
- **MIXIT** comes with built-in temperature, flow and thermal power limiters, PI controller settings and more functionalities that allow for energy optimisation
- **Energy Check** – a free service delivered in partnership with you. It reports on the energy efficiency of your customers' pump solutions and provides suggestions for improvement

LOW WATER PRESSURE

If bath tap pressure drops to 0.3 bar, it can take up to

30 mins

to fill, compared to 10 mins at 3 bar, and cause malfunctions in domestic equipment ⁴



WATER LEAKS

200 l. /day

the same as flushing it 50 times ⁶

NOISY INSTALLATIONS

By decreasing noise levels during water installations by

6 dB(A)

the sound level decreases by half, making it far more comfortable to live with ⁵



Good indoor climate
means the world to people



Uneven temperature

Challenge

- Noisy heating or boosting systems are a nuisance for residents

Main causes

- Poor pump technology and systems with old centrifugal pumps and fan-cooled motors generate vibrations throughout the system
- Poor pump control and inefficient pumps that run constantly even when there is no water being used
- Demand for water is more than the pump can handle
- Heating system is not commissioned or balanced correctly

Recommended solutions

- **SCALA2** pressure boosters offer the lowest noise level with 47 dB(A) when in use
- **ALPHA3** circulator pumps enable easy flow-based hydronic balancing, and the AUTOADAPT function will continuously find the optimal setting

Noisy systems

Challenge

- Rooms, part of rooms or part of buildings are too cold while others are too hot, resulting in reduced indoor comfort

Main causes

- Missing or insufficient hydronic balancing of the heating system
- Air in the system
- Incorrect or missing commissioning
- Pumping system does not adapt to performance demands

Recommended solutions

- **MAGNA3** and **ALPHA3** circulator pumps enable efficient and reliable operation of hydronic heating
- You can ensure even better home comfort with optimal temperature in all rooms by balancing heating systems with the **GO BALANCE** app
- **MIXIT** mixing loop solutions automatically ensure correct distribution of heating



Low water pressure

Challenges

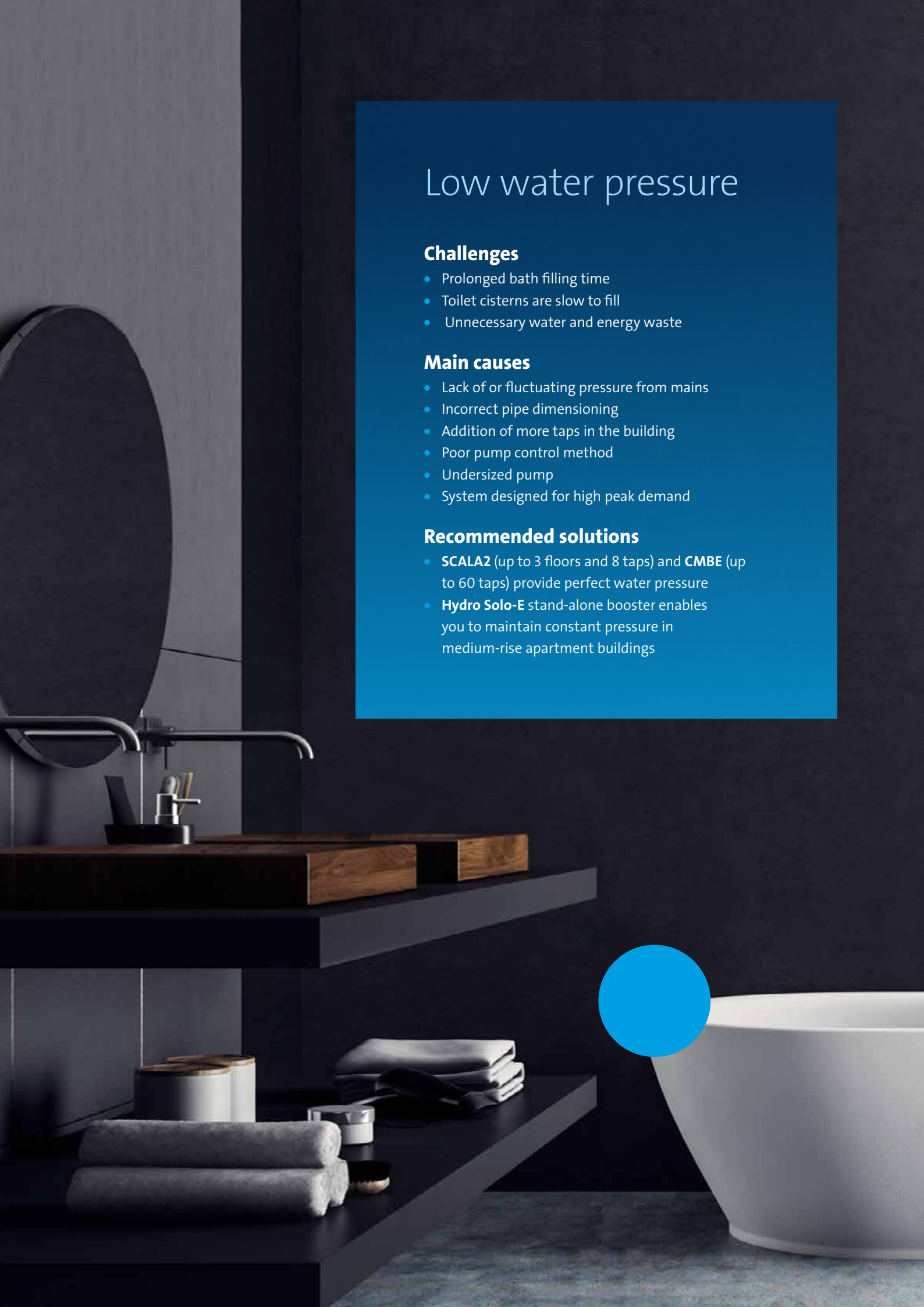
- Prolonged bath filling time
- Toilet cisterns are slow to fill
- Unnecessary water and energy waste

Main causes

- Lack of or fluctuating pressure from mains
- Incorrect pipe dimensioning
- Addition of more taps in the building
- Poor pump control method
- Undersized pump
- System designed for high peak demand

Recommended solutions

- **SCALA2** (up to 3 floors and 8 taps) and **CMBE** (up to 60 taps) provide perfect water pressure
- **Hydro Solo-E** stand-alone booster enables you to maintain constant pressure in medium-rise apartment buildings



Perfect water
pressure makes
happy customers



BOOK A MEETING

Book a meeting with one of our experts and take advantage of a non-committal dialogue to explore opportunities for growing your business with energy-efficient pump solutions. We will provide you with essential knowledge related to optimising the energy performance of residential buildings, as well as insights into improving indoor comfort for residents.

[BOOK NOW](#)