Energy efficiency in buildings
Unlocking the potential of the building sector
We need to make sure that buildings are attractive, efficient and gentler on the environment.

Around the world urban areas need to accommodate **180,000** new residents every day.

Today buildings account for **40%** of the world’s energy consumption and **1/3** of the CO₂ emission.
Actions in the building sector will unlock the full urban mitigation potential

Buildings as a solution:

- By 2050, savings in heating and cooling will account for almost half of the energy-saving potential in the building sector.

- 30% average energy savings potential by optimizing technical building systems.
Energy efficiency in our buildings

Technical building systems – our solutions for improvements

Optimizing technical building systems makes building environments more efficient, and empowers building users to better understand their environment – proactively managing their energy usage and maintaining a healthy, comfortable and productive living environment.
Individual room temperature control

500 million radiators in Europe’s homes are still fitted with simple radiator valves.

10-15 bln EUR energy cost saving potential

31 MtCO₂ emission reduction

Payback time 2 years or less

Digital, connected TRV’s deliver additional savings and comfort

<table>
<thead>
<tr>
<th>Installed</th>
<th>Saving up to</th>
<th>Replaced</th>
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<tbody>
<tr>
<td>New TRV</td>
<td>36%</td>
<td>Simple valve</td>
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<td></td>
<td>8%</td>
<td>Old TRV</td>
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<tr>
<td>New electronic TRV</td>
<td>46%</td>
<td>Simple valve</td>
</tr>
<tr>
<td></td>
<td>23%</td>
<td>Old TRV</td>
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Automatic hydronic balancing

More than 80% of the EU building stock currently without hydronic balancing

6 bln EUR energy cost savings

15.9 MtCO₂ emission reduction

Payback time 2 years or less

Automatic balancing valves (ASV-M and ASV-PV)

Shut-off valve (ASV-M) in the flow pipe

Differential pressure controller (ASV-PV) in the return
Heat pump solutions

75% of the energy for heating and hot water extracted from the sea
How do we **accelerate** and implement buildings energy efficiency?

**Replace** outdated technology with state-of-the-art **innovative solutions**

**Collaboration** between the public and the private sector empowers technology providers to help cities make **smart decisions** for **smarter cities**.

**Understand** buildings as part of the **bigger energy system** that supplies **heating, cooling, and power** to buildings.
If we get buildings right, we get the energy system right!

- A smart system connects electricity, water, heating and cooling.
- A smart system connects highly energy efficient buildings.
#Rethinking Efficiency

- **156 Mt CO₂**
  - the quantity of greenhouse gas emissions that could be saved by optimising building systems – equivalent to 82 million cars

- **300,000 jobs**
  - the number of new jobs that could be created in Europe manufacturing and installing energy efficient products and services

- **13%**
  - the reduction of natural gas imports into the EU that could be achieved

- **€67bn**
  - the amount of money EU citizens could save on their energy bills annually in 2030

- **14%**
  - of the EU 2030 energy efficiency target could be met by optimising technical building systems

- **2 years**
  - the average payback period for getting the basics right in our buildings

Learn how we can achieve bold energy targets at [danfoss.com/buildingefficiency](http://danfoss.com/buildingefficiency)