ENGINEERING
TOMORROW

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

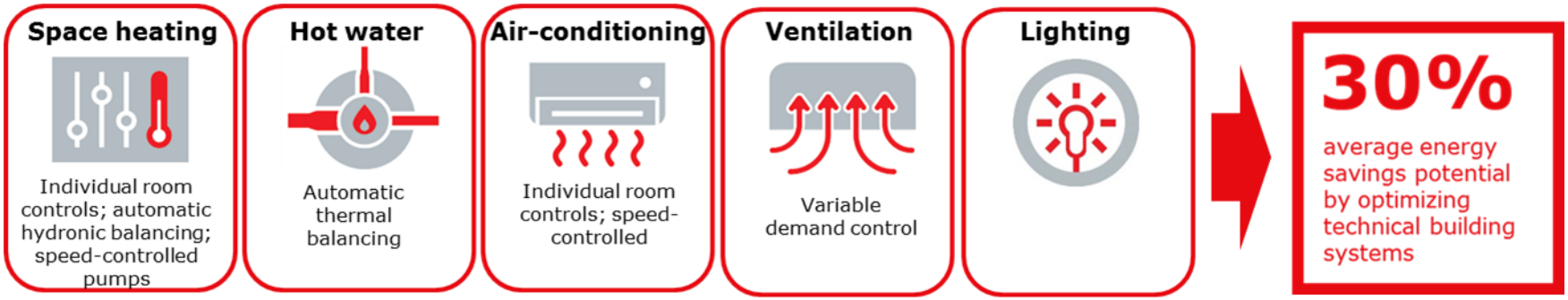
Actions in the **building sector** will unlock the full urban **mitigation potential**

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 MtCO_2 emission reduction

Payback time **2 years** or less

Digital, connected TRV's deliver additional savings and comfort

Installed	Saving up to	Replaced
New TRV 	36%	Simple valve 
	8%	Old TRV 
New electronic TRV 	46%	Simple valve 
	23%	Old TRV 

Automatic hydronic balancing

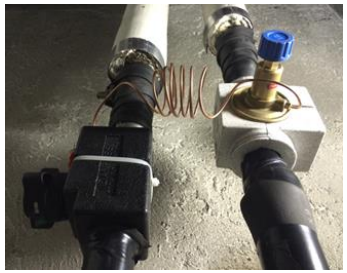
More than 80% of the EU building stock currently without hydronic balancing

6 bln EUR energy cost savings

15.9 MtCO_2 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

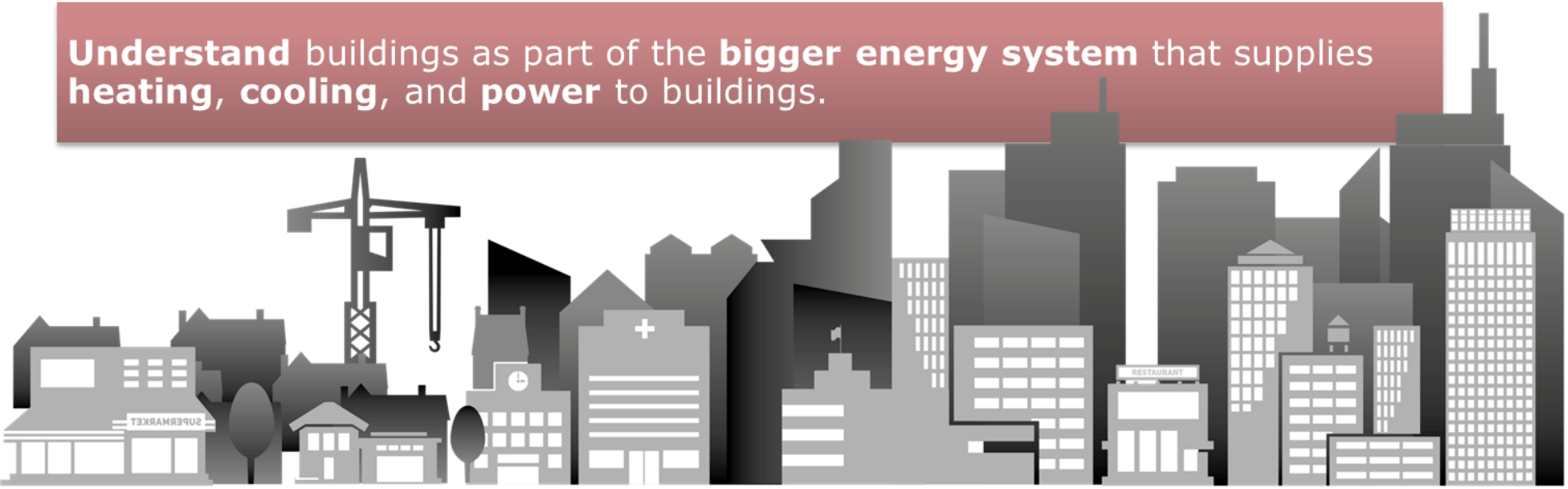
Heat pump solutions

How do we **accelerate** and implement **buildings energy efficiency**?

Replace outdated technology with state-of-the-art **innovative solutions**

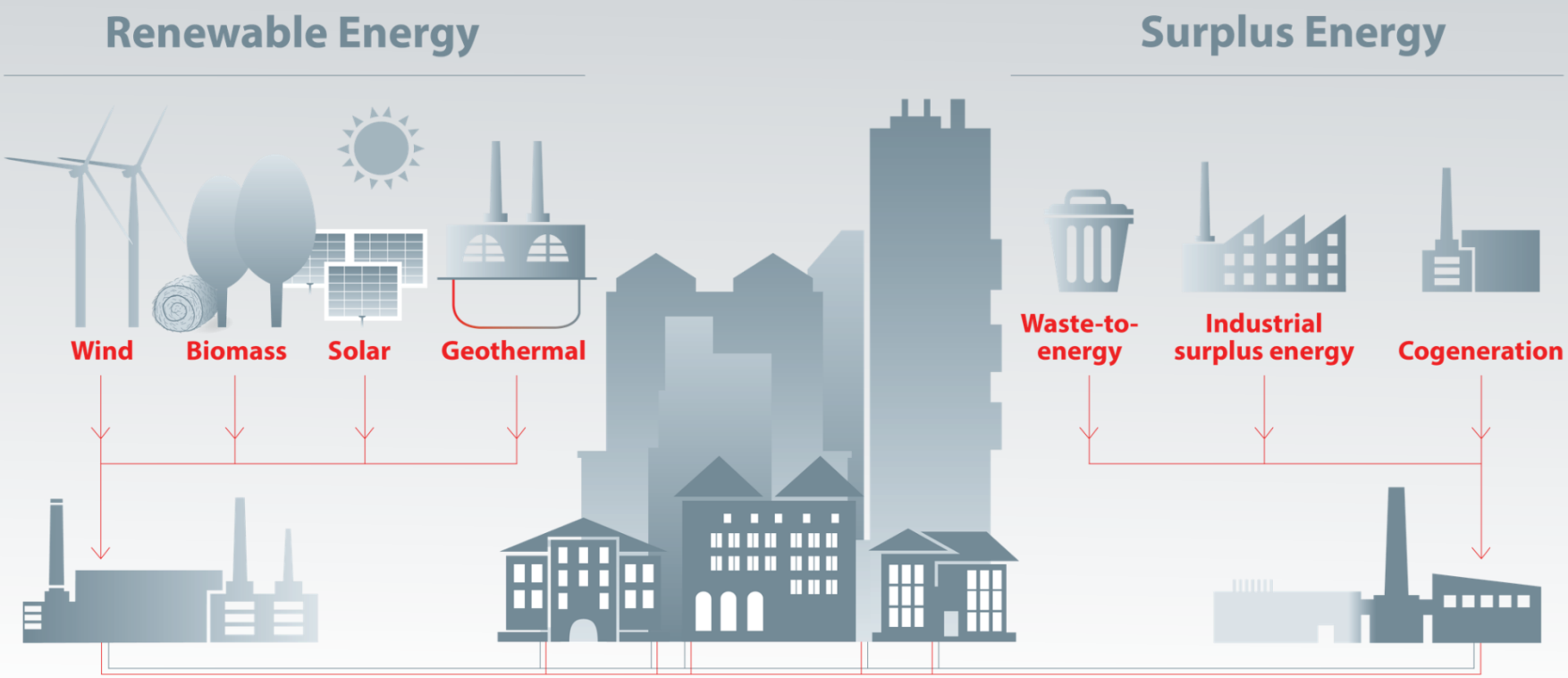
Collaboration between the public and the private sector empowers technology providers to help cities make **smart decisions** for **smarter cities**.

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 CO_2

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**