

CLEANTECH AND DISTRICT HEATING IN FINLAND

10 June 2014

CLEANTECH =

technology, services, solutions, process innovations or products, that

help reduce
the
**environmental
load** caused
by human
activity

save **energy
and natural
resources**

improve the
**living
environment**

Energy and material efficiency



Built environment

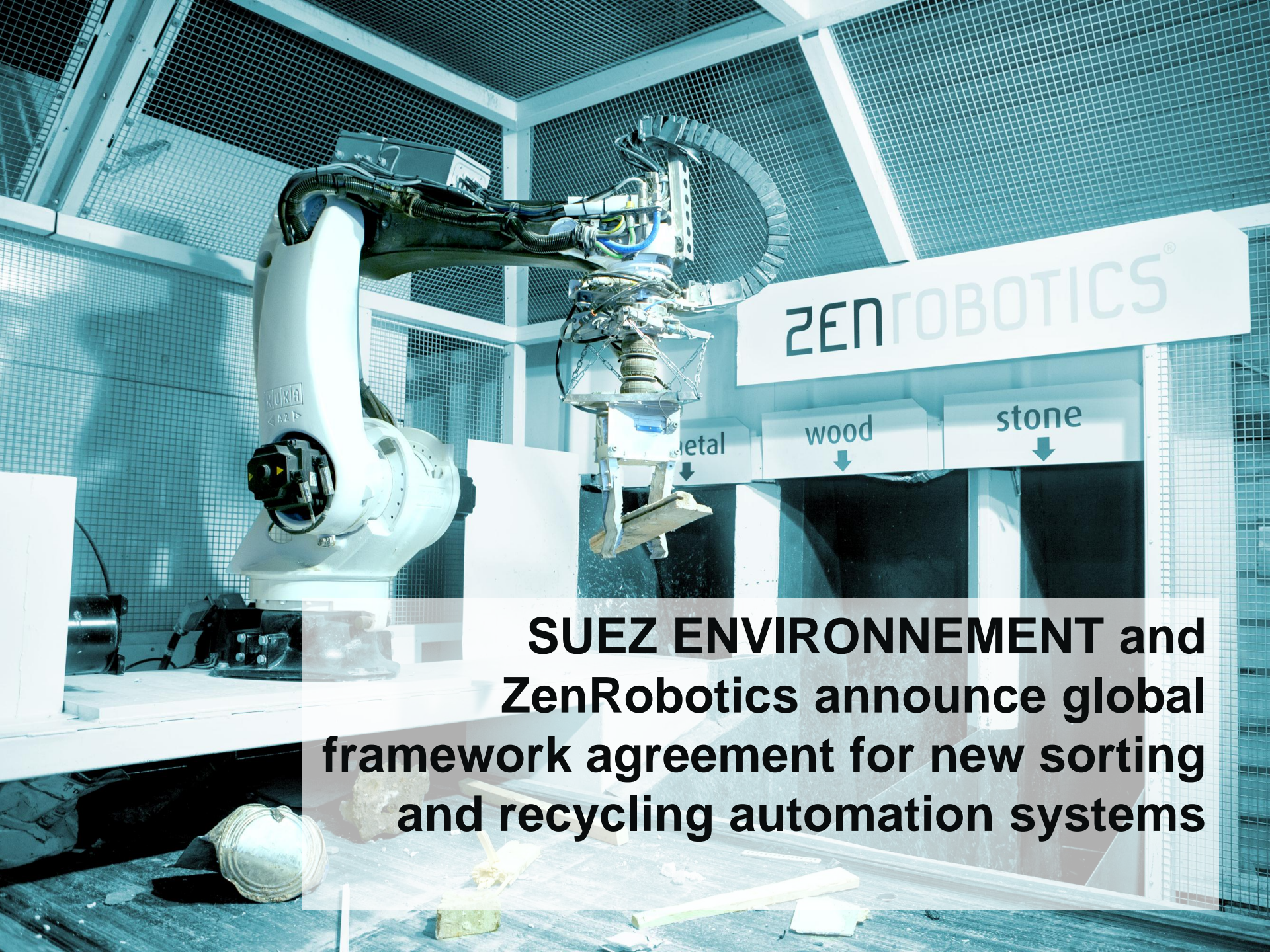


Bioenergy & Biofuels



Water treatment & purification





ZENROBOTICS®

metal
↓

wood
↓

stone
↓

SUEZ ENVIRONNEMENT and ZenRobotics announce global framework agreement for new sorting and recycling automation systems



**LED-manufacturer Greenlux
increases collaboration with IKEA**

KEY SOURCE OF GROWTH FOR FINNISH COMPANIES

47 %

”Cleantech is our only business area in Finland”

26 %

”Cleantech is our only business area internationally”

25 %

”Cleantech has grown faster than our other business areas in Finland”

30 %

”Cleantech has grown faster than our other business areas internationally”

Global
cleantech
market is
worth
approx.
**EUR
2000
billion**

Expected
to grow to
**EUR
4000
billion**
by 2025

Average
annual
growth
since 2007
12 %

Source of
competi-
veness &
growth for
companies
in a wide
range of
sectors

GROWTH DRIVERS

Urbanization

- Traffic congestion, air & water pollution, heating, waste → problems need to be solved

Regulation

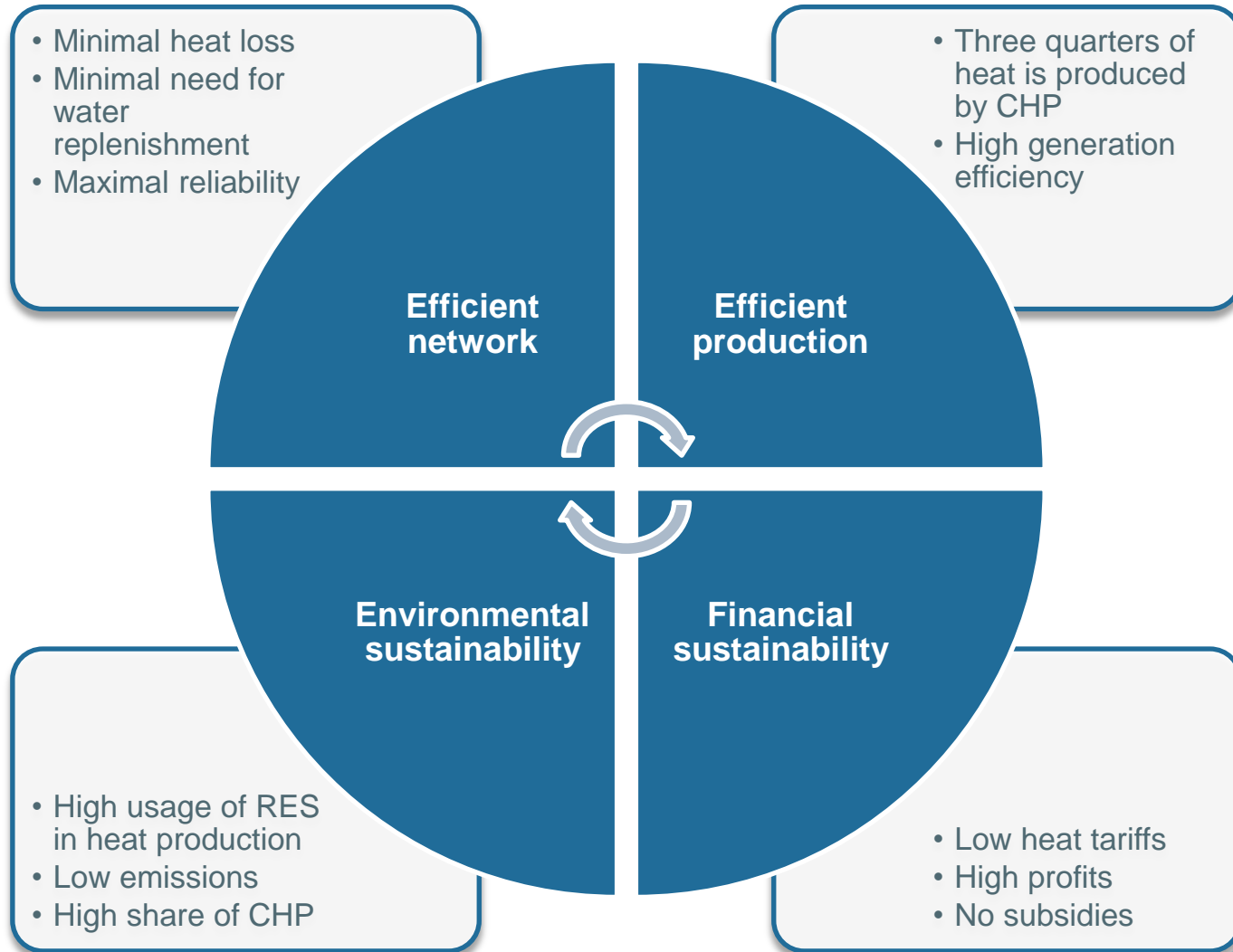
- Tighter regulation opens up opportunities



SMART DISTRICT HEATING FROM FINLAND

The Coldest Country in Europe
The Best Country of District Heating

WOULD YOU LIKE TO HAVE THE **WORLD BEST** DHC SYSTEM?



WOULD YOU LIKE TO HAVE A DHC SYSTEM WITH EXCELLENT KEY PERFORMANCE INDICATORS?

Key Performance Indicators	Finland (200 companies on average)	Transition Economies
Network heat losses of production	6-9%	15-40%
Make-up water replenishment need per year	1	10-50
Reliability	99,98%	99% or lower
CHP share of DH production	76%	30-60%
DH generation efficiency	93%	60-90%
RES share of DH production	38%	0-10%
Staff productivity (GWh / employee)	20	1-4
Profitability % of turnover	10-20%	Low or negative

Finnish DHC: The **Benchmark** worldwide!



Finnish DHC in 2012

Heat sales (incl. taxes)	2,250 mill €
Sold heat energy	33.6 TWh
Average price of DH (incl. taxes and domestic hot water)	67 €/MWh
Inhabitants in DH apartments	2.7 mill
Market share of district heat	47%
Sold district cooling energy	124 GWh

*The International Energy Agency (IEA 2009) has stated that **Finland is the 'model for the world' in CHP and DHC** with high efficiency and environmental performance.*

Finnish DHC business and expertise is provided by:

- Both private and public DH companies that independently operate in the non-regulated market, which drives them for high operational efficiency and financial sustainability
- Investments made based on the long-term least cost solution
- Several world-class energy consulting companies
- Full range of equipment manufacturers both for energy production and distribution
- Several universities, research institutes and energy companies who invest in R&D activities for CHP and DHC.



**KIITOS.
TACK.
THANK YOU.**



www.cleantechfinland.com
www.solved.fi

