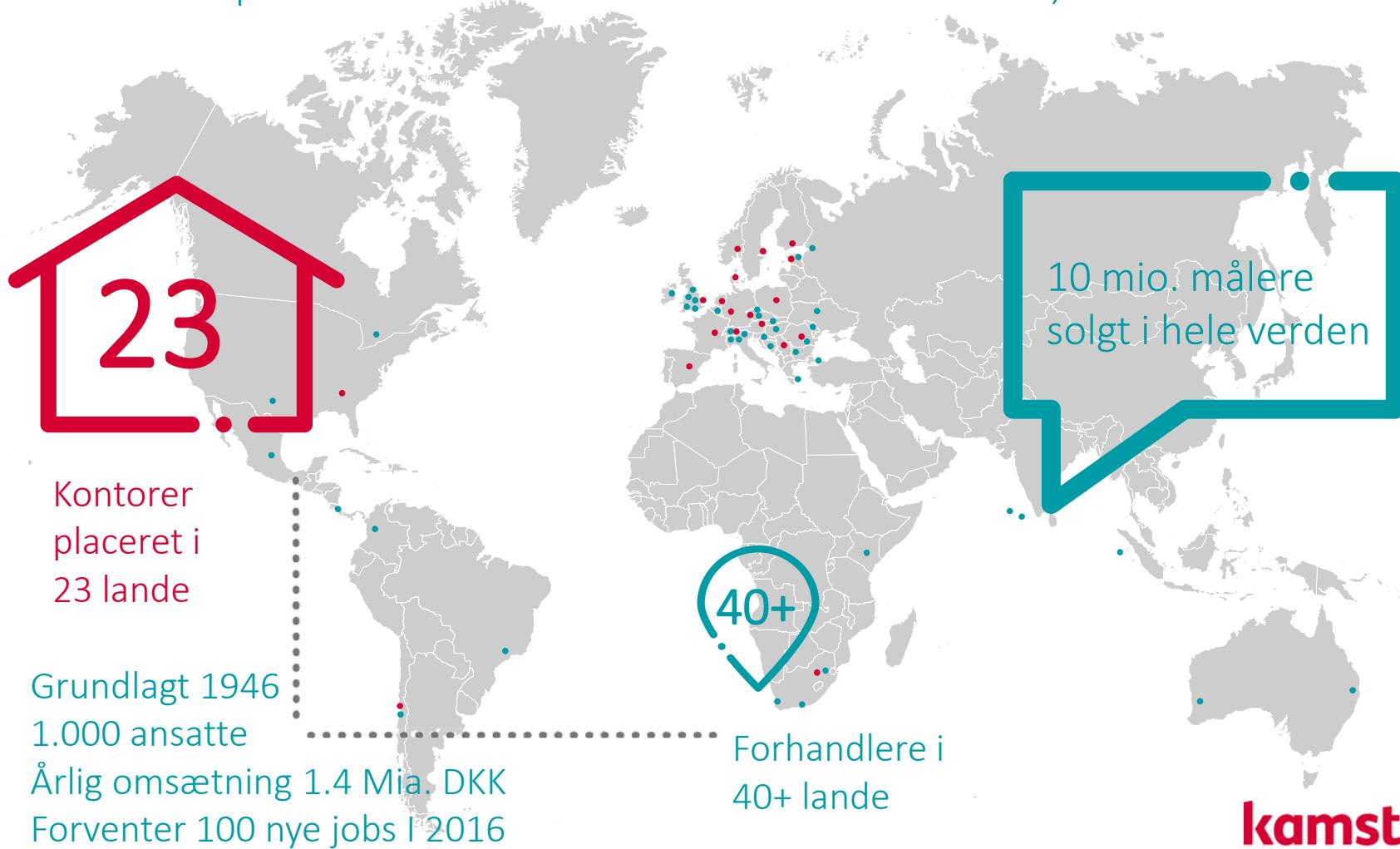


Udvikling og tendenser indenfor smart metering

Flowtemadag – Teknologisk Institut
December 2015

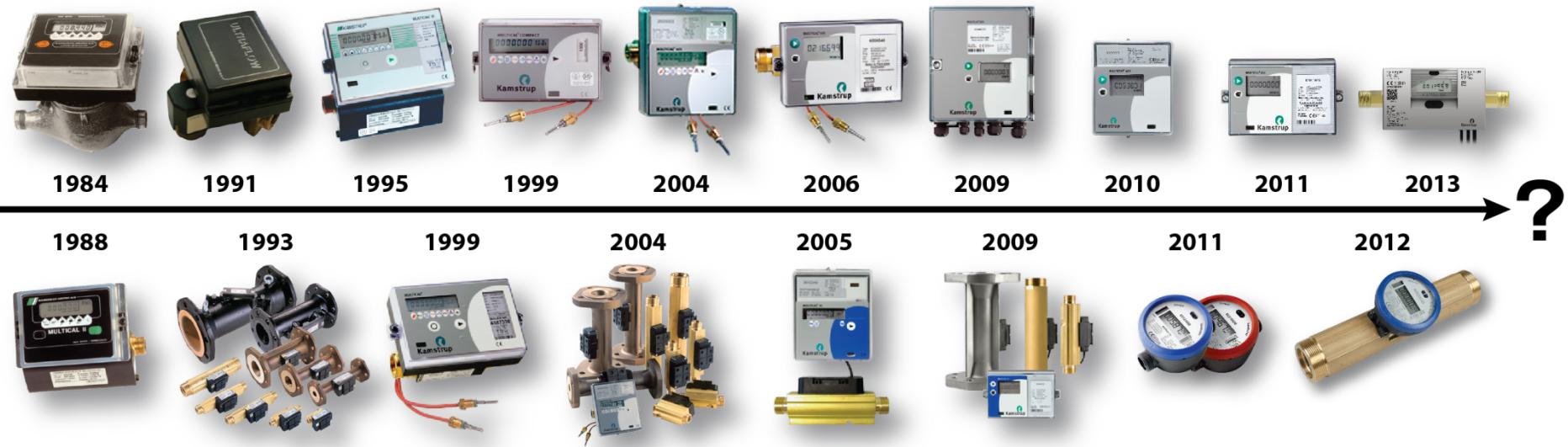
Head of Product Management
Steen Schelle Jensen
Kamstrup A/S

Verdens førende leverandør af intelligente målerløsninger til energi og vand
Hos Kamstrup definerer vi vores værdi ud fra de fremskridt, vi skaber for andre



Lang erfaring med flowmåling

kamstrup



Varme- og vandmåling i 2015

kamstrup



MULTICAL® 302

MULTICAL® 402

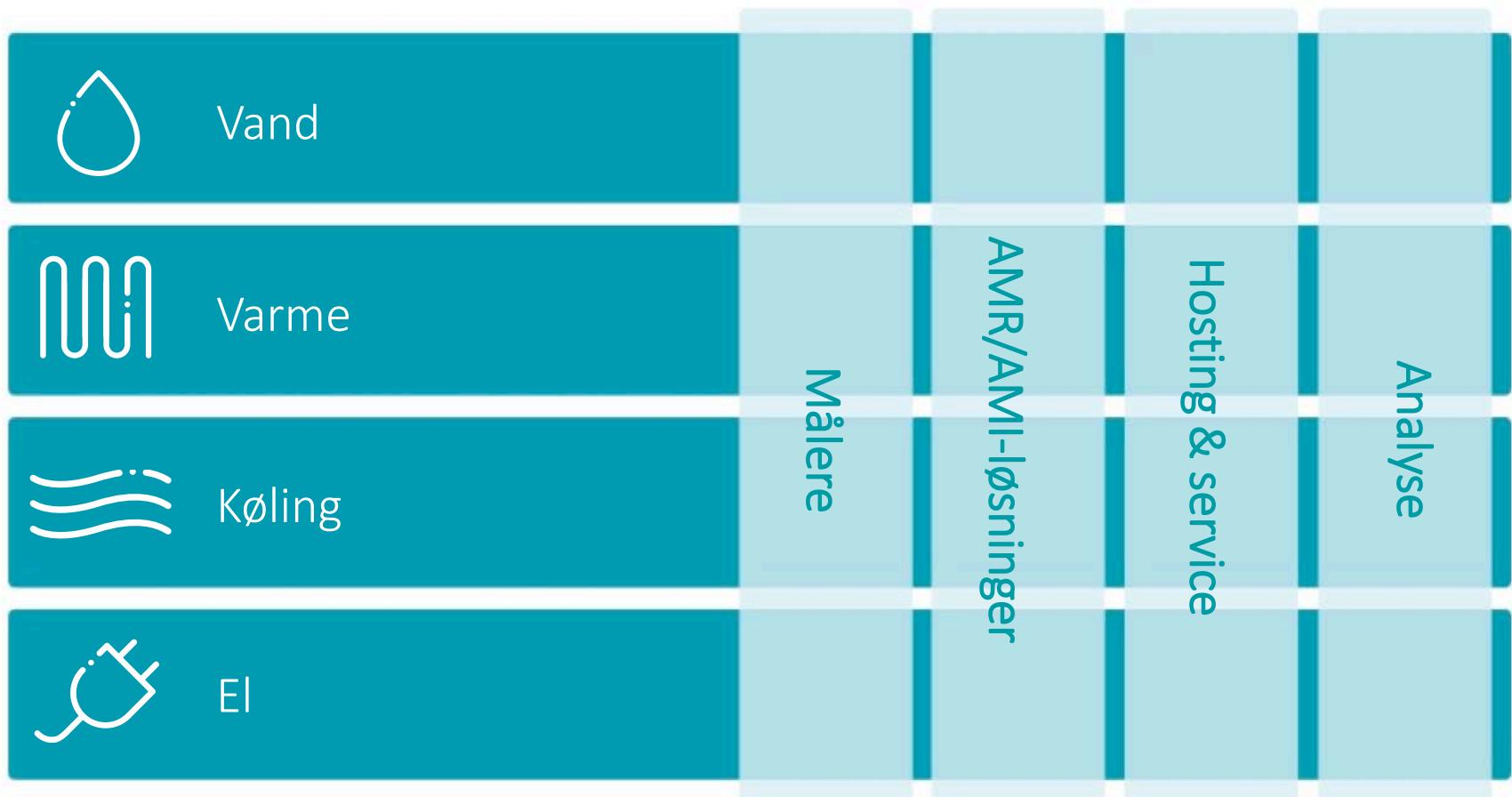
MULTICAL® 602

MULTICAL® 801

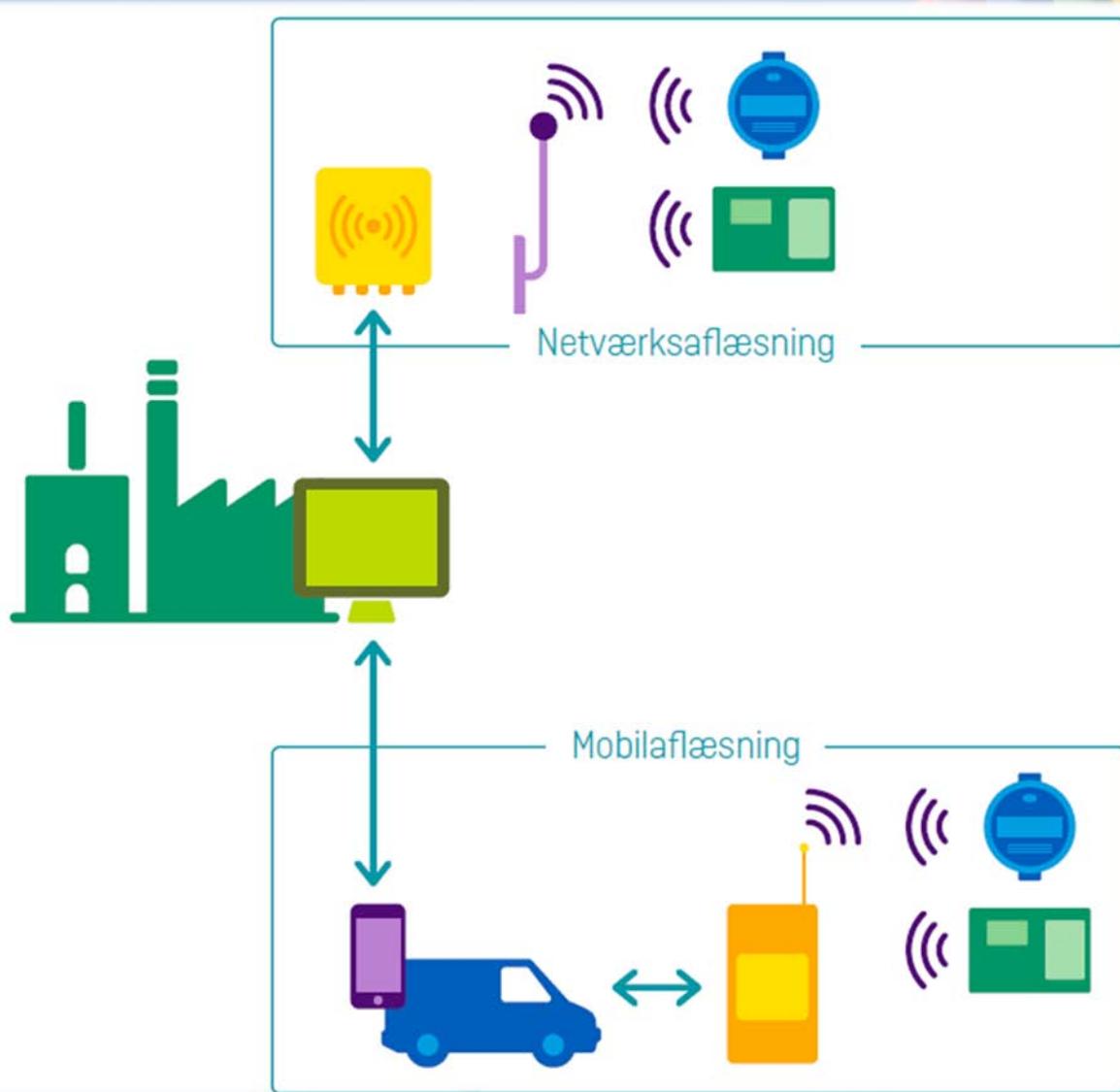
flowIQ 3100

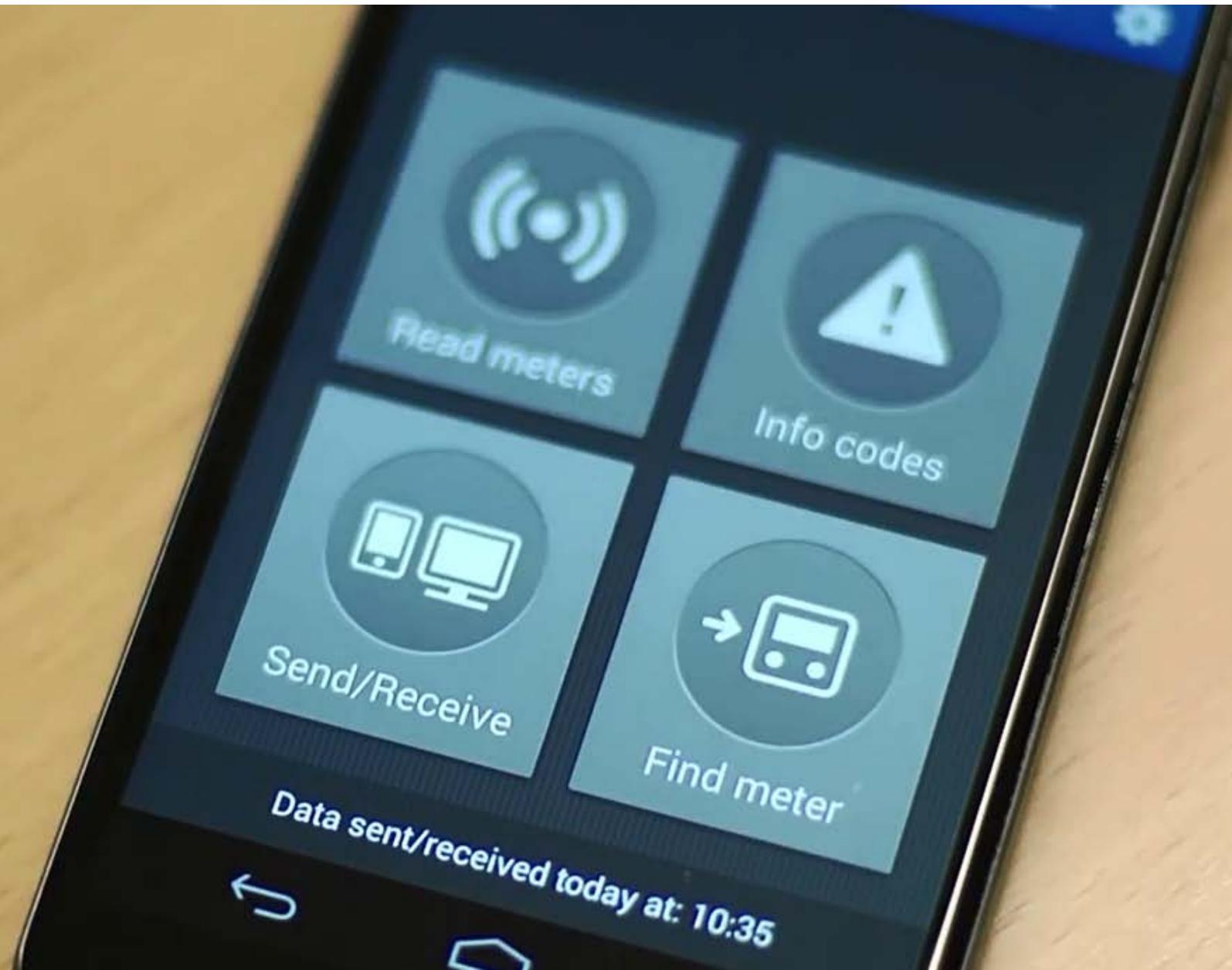


MULTICAL® 21



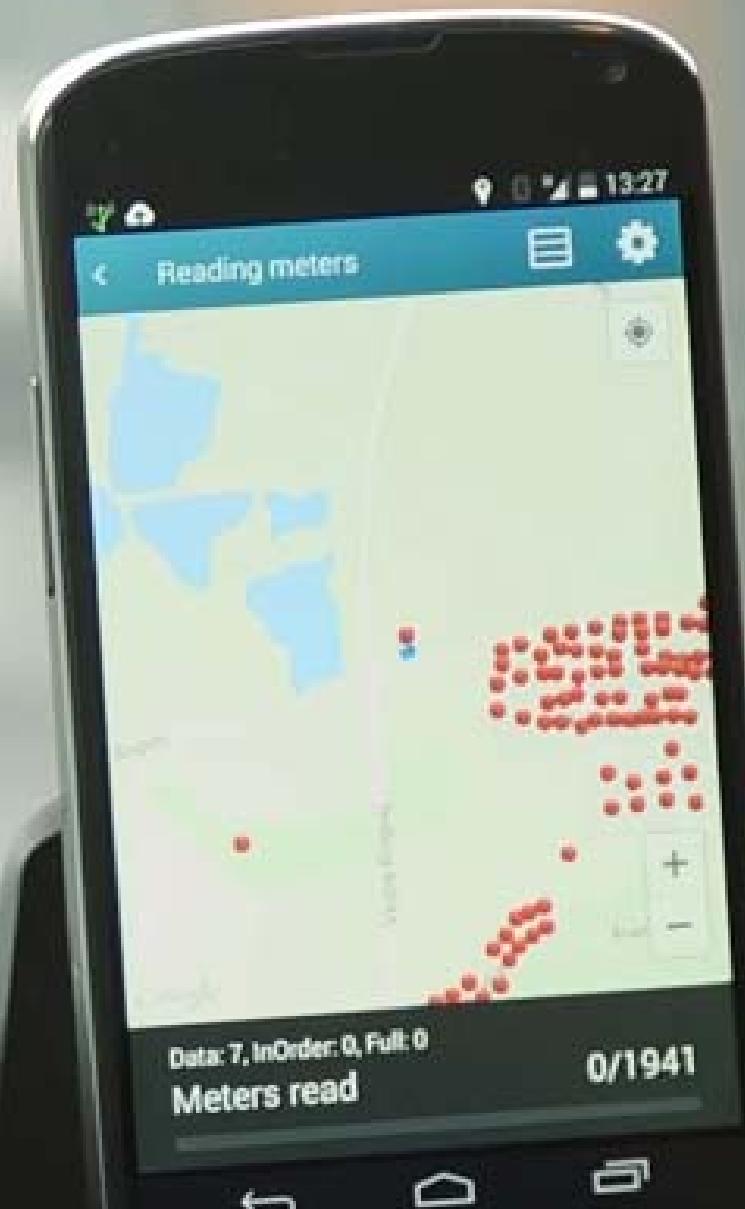
READY





READY Drive-By

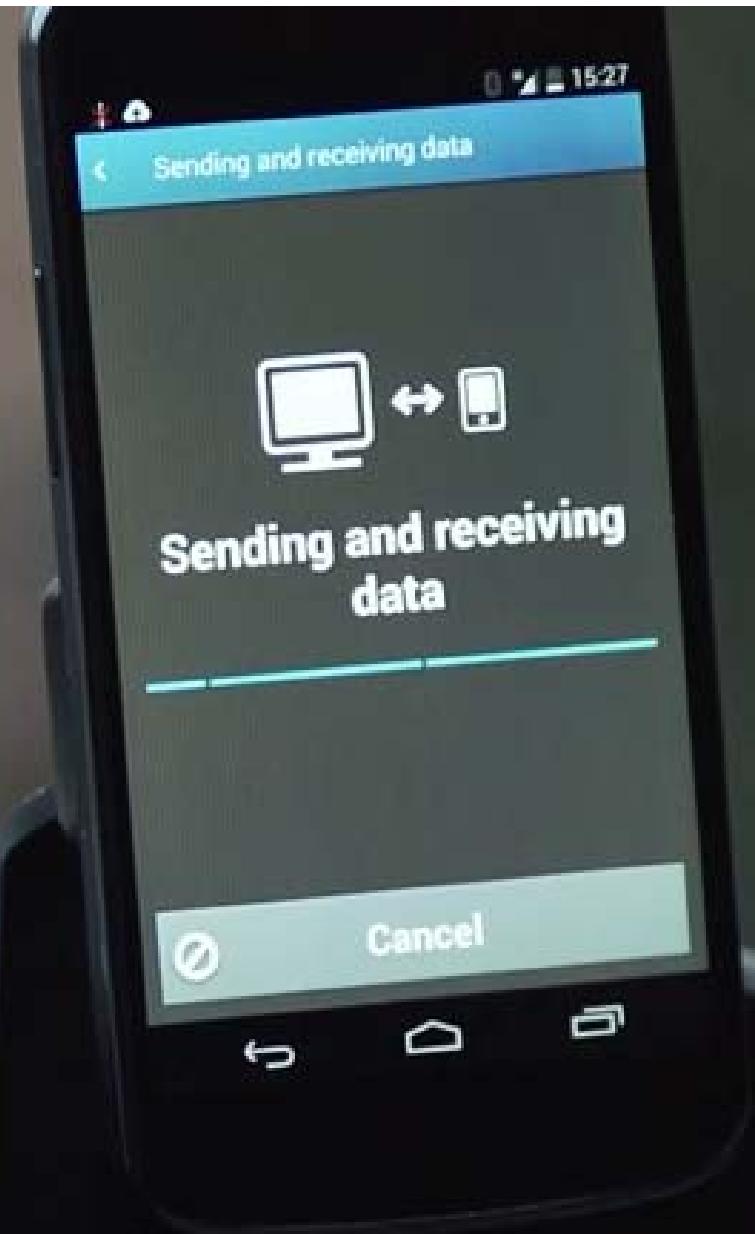
kamstrup



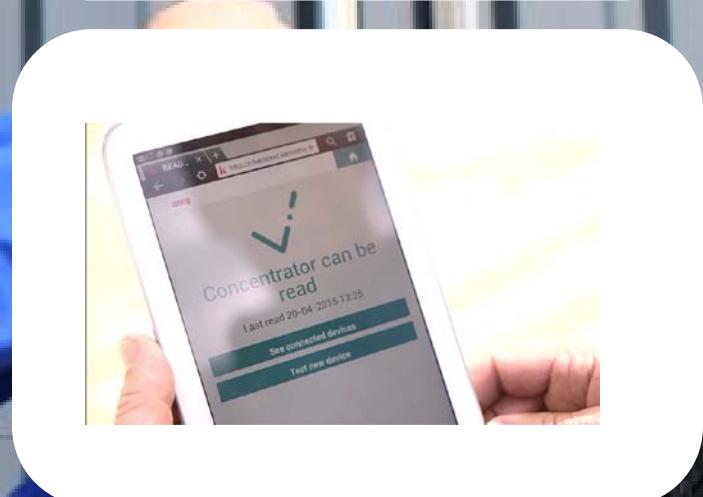
READY Drive-By

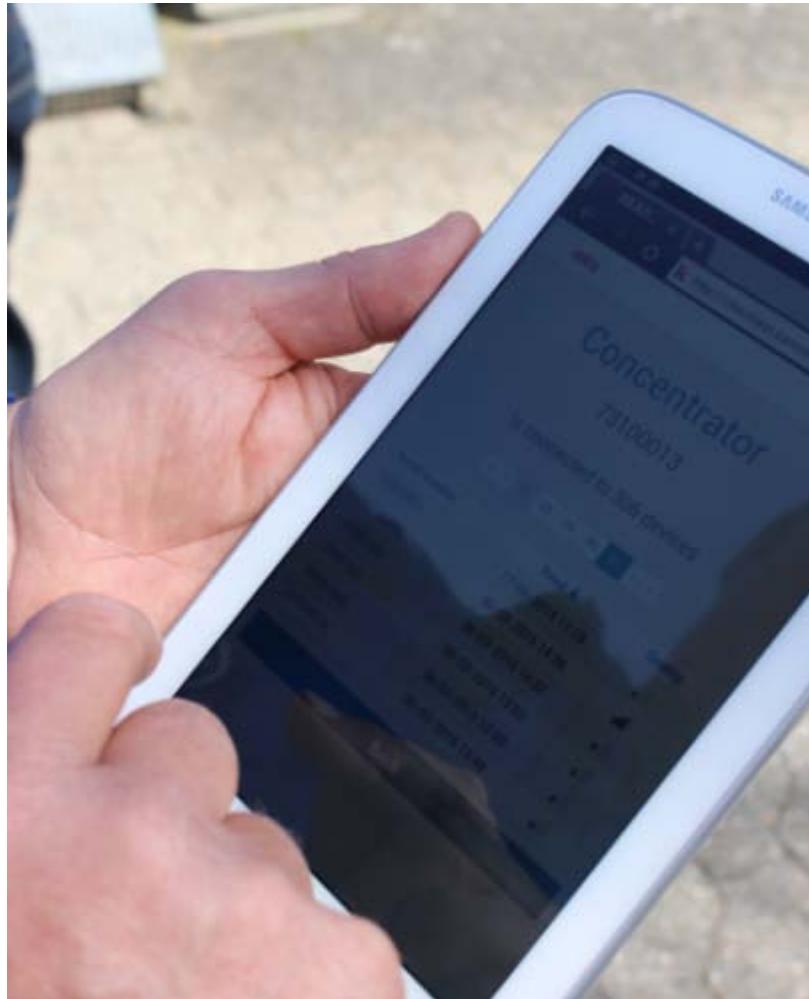
kamstrup





READY netværksaflæsning





https://check.kamstrup.com

[HTTP://CHECK.KAMSTRUP.COM](https://check.kamstrup.com)

READY

kamstrup





Meter readings

X

74371003 - Barnhusgatan 24, Söderbygården 11

From: 27/08/2014 To: 06/09/2015

[Visualization](#)[Readings](#)[Logger data](#)

Reading time	Volume 1
10/07/2015 19:02:38	162.853 m ³
▲ 08/07/2015 23:02:52	158.884 m ³
▲ 08/07/2015 22:02:41	158.819 m ³
▲ 08/07/2015 21:02:38	158.688 m ³
▲ 08/07/2015 20:02:32	158.634 m ³
▲ 08/07/2015 19:02:51	158.530 m ³
▲ 08/07/2015 18:02:46	158.492 m ³
▲ 08/07/2015 17:02:50	158.454 m ³
▲ 08/07/2015 16:02:38	158.409 m ³
▲ 08/07/2015 15:02:50	158.304 m ³
▲ 08/07/2015 14:02:38	158.087 m ³
▲ 08/07/2015 13:02:38	157.896 m ³
▲ 08/07/2015 12:02:36	157.801 m ³
▲ 08/07/2015 11:02:26	157.452 m ³
▲ 08/07/2015 09:02:33	157.067 m ³
▲ 08/07/2015 06:10:09	156.645 m ³

Data for current reading

Volume 1 158.634 m³
 Hour counter 1832 h
 TempMinDay 14 C
 TempAmbientAvgDay 29 C

Historical data

Volume1Logged 137.199 m³

Info codes active at reading time

Leak

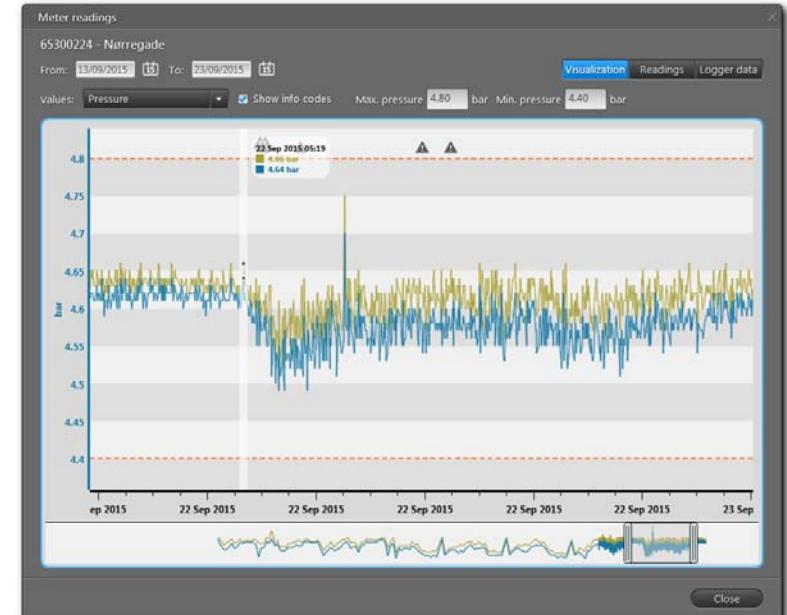
Historical info codes

Burst has been recorded for 1 - 8 hours within the last 30 days

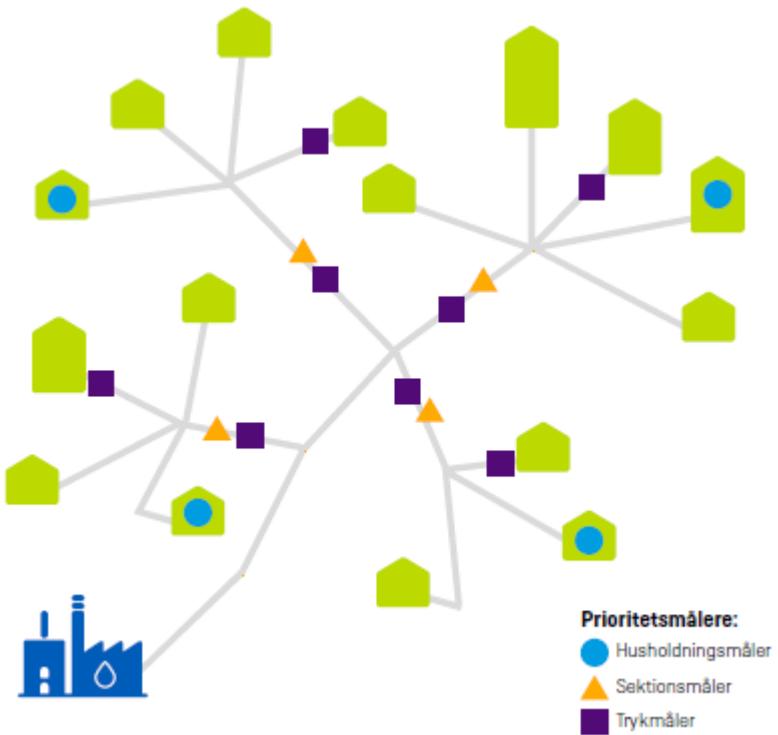
Leak has been recorded for more than 21 days within the last 30 days

Close

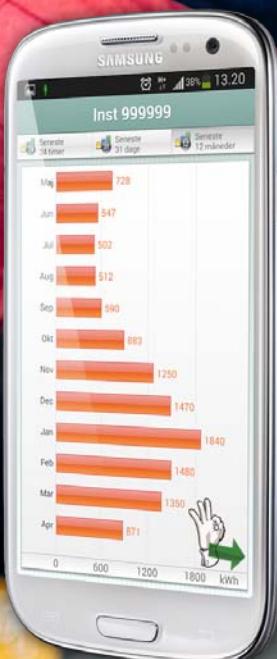
“Brug READY til at overvåge tryk og trykstød i netværket”



“Aflæs målere med 5 min. interval!”

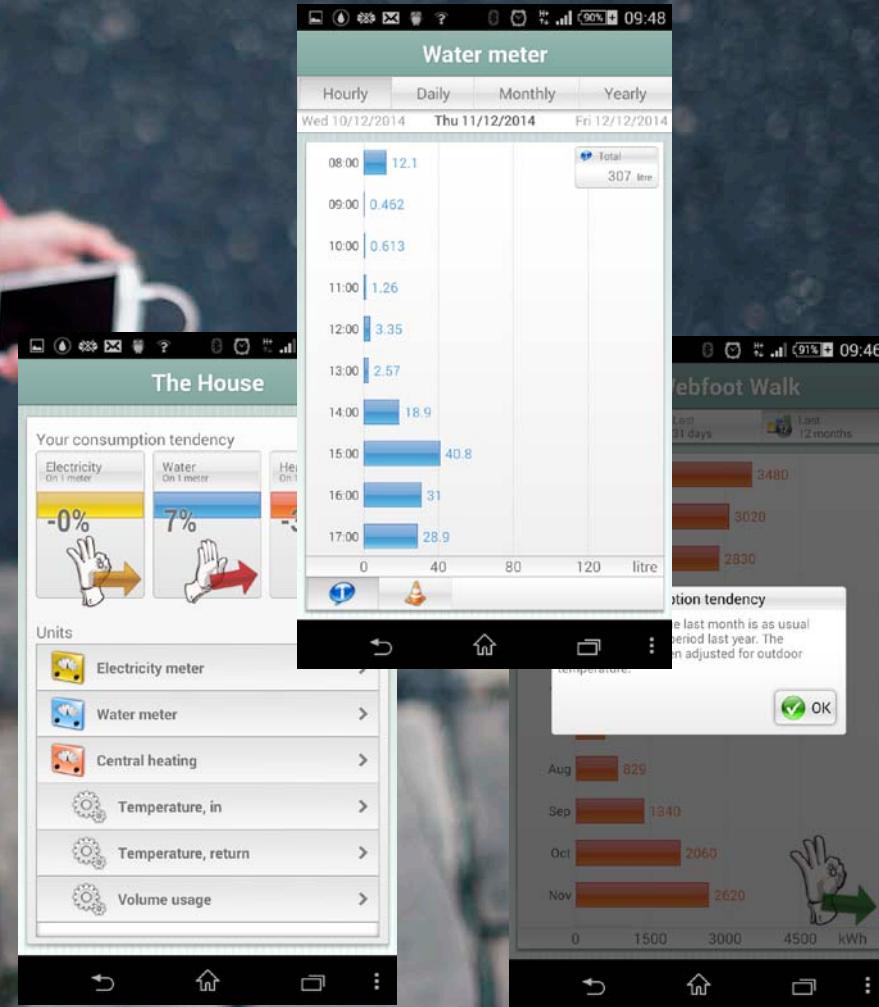


eButler i lommen



Download on the
App Store

ANDROID APP ON
Google play





Del fordelene ved smart metering med dine kunder ...





... og undgå de sure af slagsen!



Grafisk overblik over energi- og vandforbrug



Personlige SMS og Email notifikationer



Analysér og identificér problemer



Benchmark med andre kunder



<http://www.ebutler.dk/>

eButler



Duckburg Utility

[Settings](#)[Help](#)[Log out](#)

Your houses

[1313 Webfoot Walk](#)[The Garage](#)[The House](#)[Electricity meter](#)[Water meter](#)[Central heating](#)[Temperature, in](#)[Temperature, return](#)[Volume usage](#)[Hourly](#)[Daily](#)[Monthly](#)[Yearly](#)**Heat, energy usage · 2014 · Central heating**

January

February

March

April

May

June

July

August

September

October

November

December

Select year

2012

2013

2014

DIFFERENTIAL TEMPERATURE 2014



32,6 °C

0 300 600 900 1.200 1.500 1.800 2.100 2.400 2.700 3.000 3.300 kWh



Chart layout

[Bar values](#)[Meter average](#)[Standby usage](#)[Last year](#)[Diff. temperature](#)[Degree days adj.](#)

4G 74% 14.46
← +4551905253 OPKALD MERE

mandag den 17. august 2015

 Advarsel fra eButler:
Forbrugsgrensen
»Dagsforbrug« på måleren
»Hovgårdsvej 5« er blevet
overskredet. Dagsforbrug
16/08/2015: 475 liter. Gå til
ebutler.dk for at tilpasse dine
advarsler.
Sms 07.18

mandag den 7. september 2015

 Warning from eButler:
Usage limit »Dagsforbrug«
on the meter »Vandmåler«
has been exceeded. Daily
consumption 06/09/2015:
504 litre. Go to ebutler.dk to
change alert settings.
Sms 07.26



 Skriv besked

Vandforbrug på »Vandmåler«

DAGSFORBRUG DE SENESTE 14 DAGE (LITER)

Dag	Consumption (Liter)
søn 6	503,6
lør 5	169,9
fre 4	239,3
tor 3	210,0
ons 2	179,0
tir 1	266,8
man 31	116,3
søn 30	264,6

eButler usage limit report for »Dagsforbrug«

THE USAGE LIMIT WAS EXCEEDED IN THE FOLLOWING CASE(S):

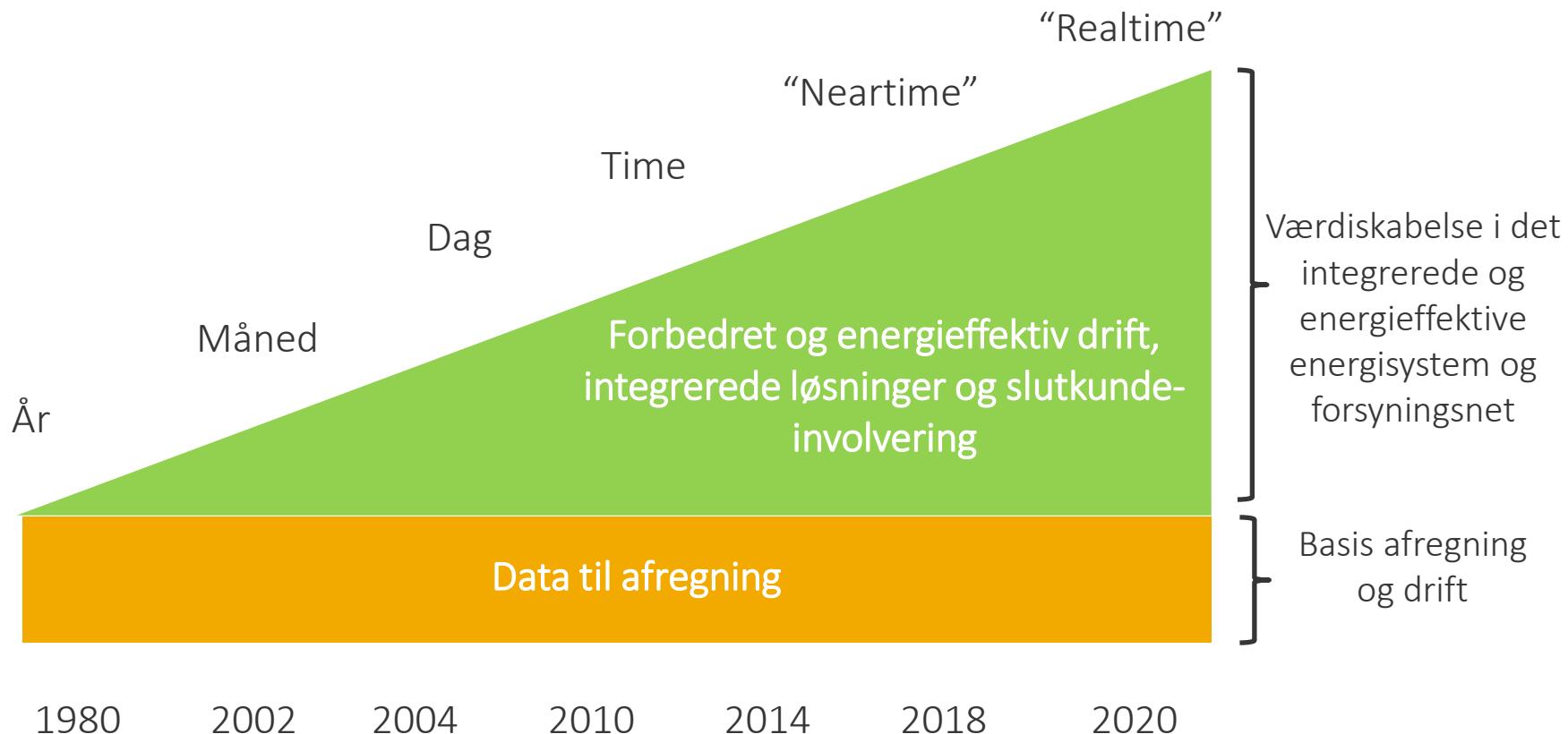
Time	Consumption
06/09/2015 00:00	503.6 litre

CURRENT SETTINGS:

Meter:	Vandmåler	Min. limit:
Verification method:	Daily consumption	Max limit:
		400.0 litre

[» Go to eButler](#)

Du kan ikke optimere det du ikke mäter på!



.... på mange områder i en intelligent forsyning

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Smart Metering

Afregning

Drift og vedligehold

Kvalitet og overvågning

Optimeret produktion

Kundeinvolvering

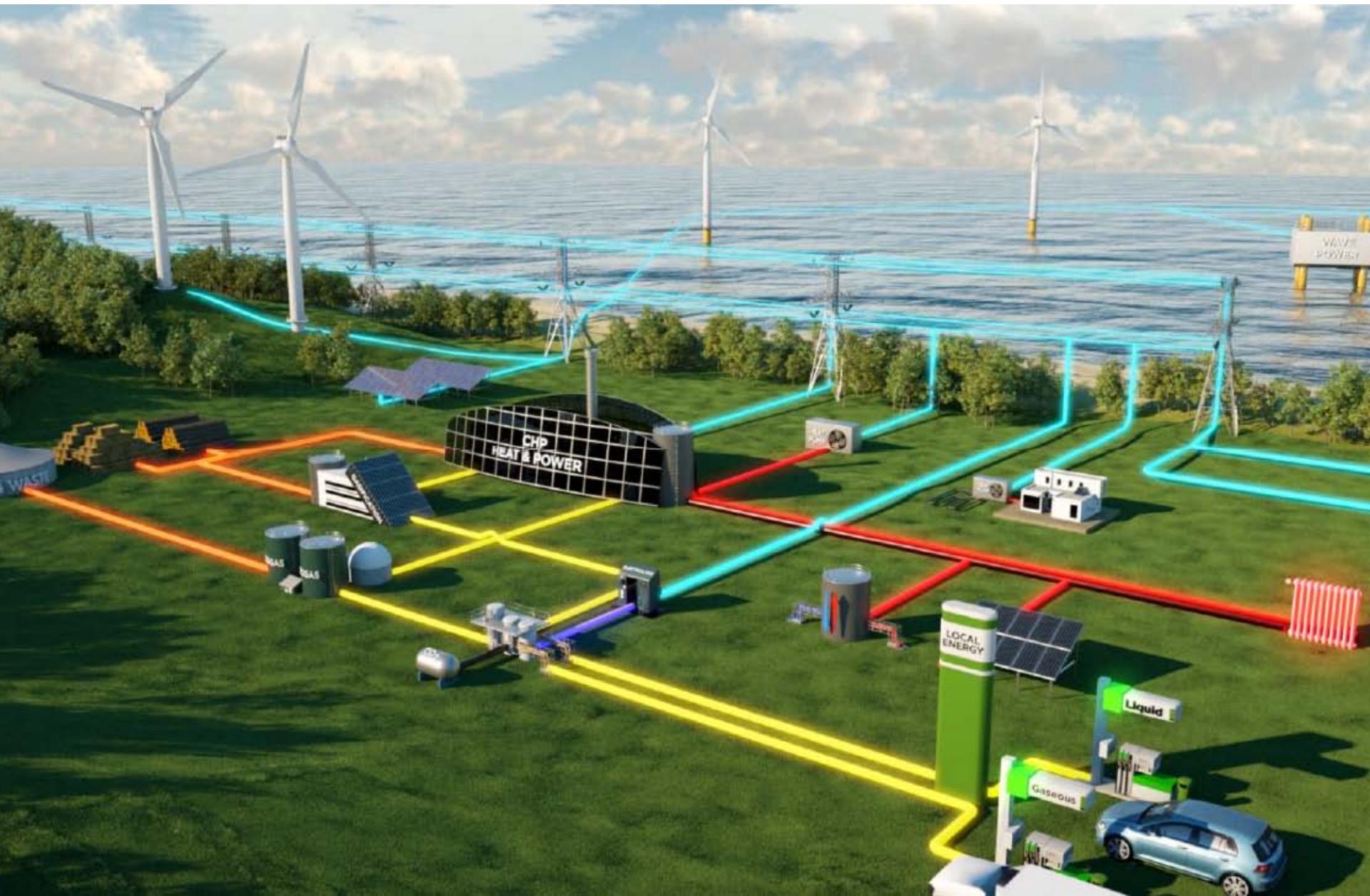
Effektiv administration

Asset Management

Energieffektivitet

Fremtidens integrerede energisystemer

kamstrup





Byer dækker kun 2-3% af verdens landareal – men næsten halvdelen af befolkningen boer i byer. Det forventes at stige til 80% i 2050

I dag står byer for 75% af det samlede energiforbrug og 60-80% af de samlede globale emissioner.

Ressource-effektive byer implementerer avancerede løsninger til håndtering af energi, transport og affald

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Den digitaliserede vandforsyning

White paper om potentialet ved smart metering



"The total cost to water utilities caused by NRW worldwide can be conservatively estimated at \$141 billion per year"

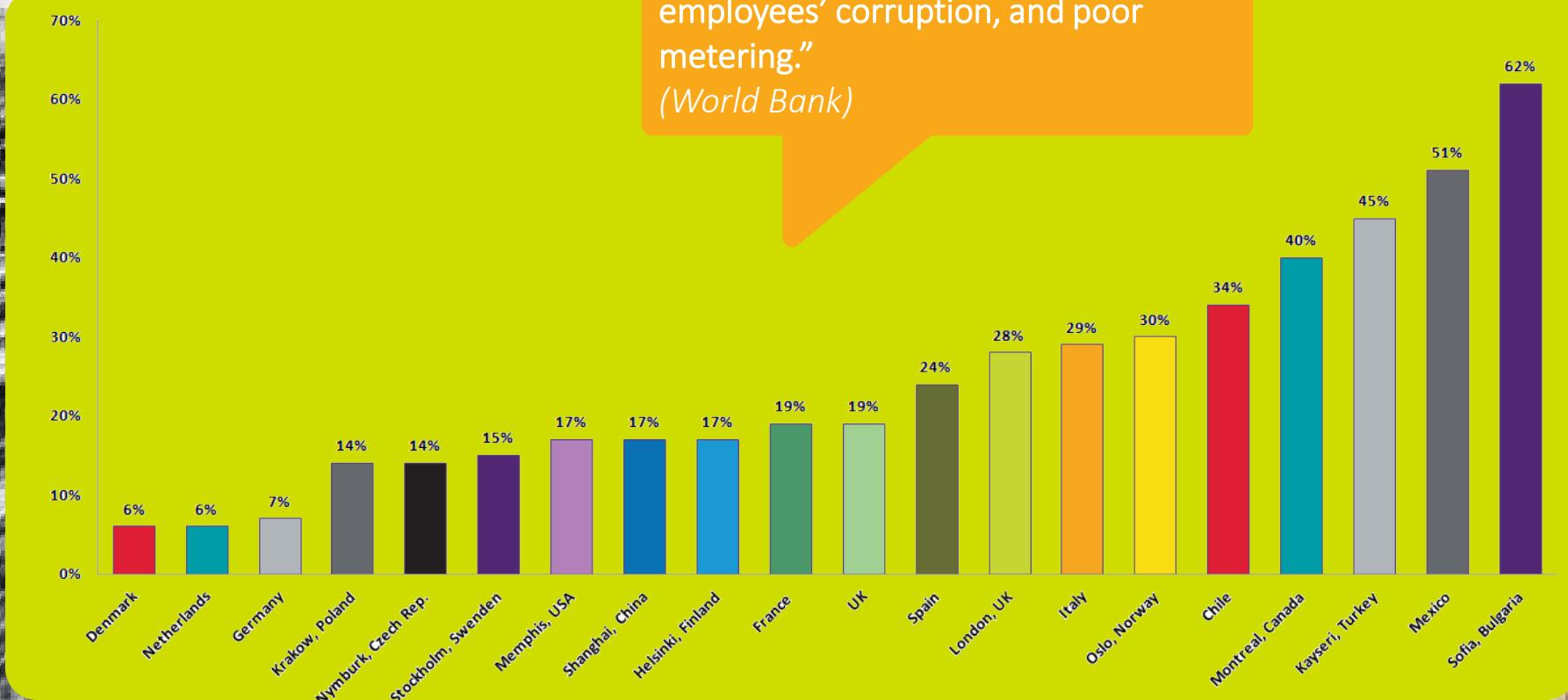
(World Bank)

About 45 million cubic meters are lost daily through water leakage in the distribution networks—enough to serve nearly 200 million people.

(World Bank)

"Close to 30 million cubic meters are delivered every day to customers, but are not invoiced because of pilferage, employees' corruption, and poor metering."

(World Bank)

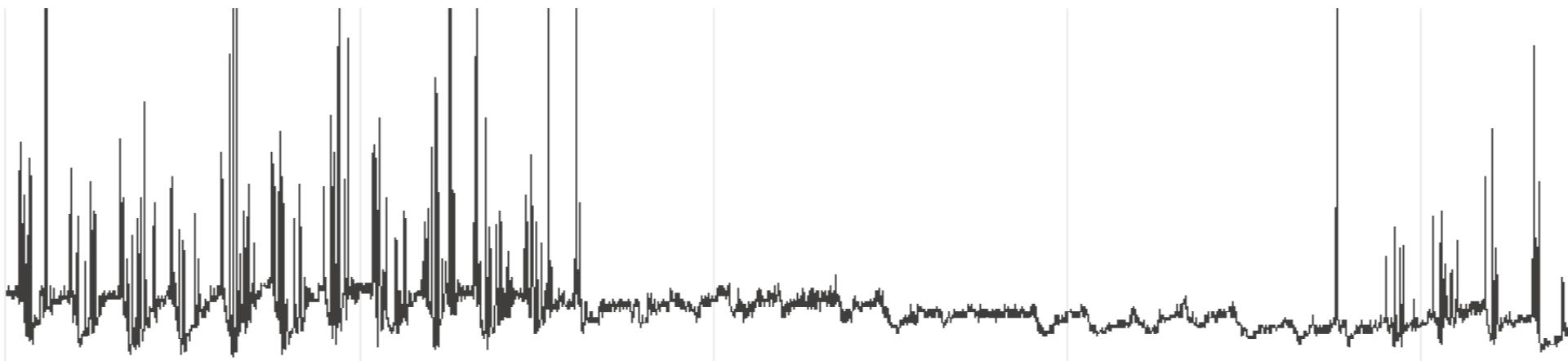


Investment needs for buried drinking water infrastructure total more than \$1 trillion nationwide over the next 25 years Overlooking or postponing infrastructure renewal investments in the near term will only add to the scale of the challenge we face in the years to come.

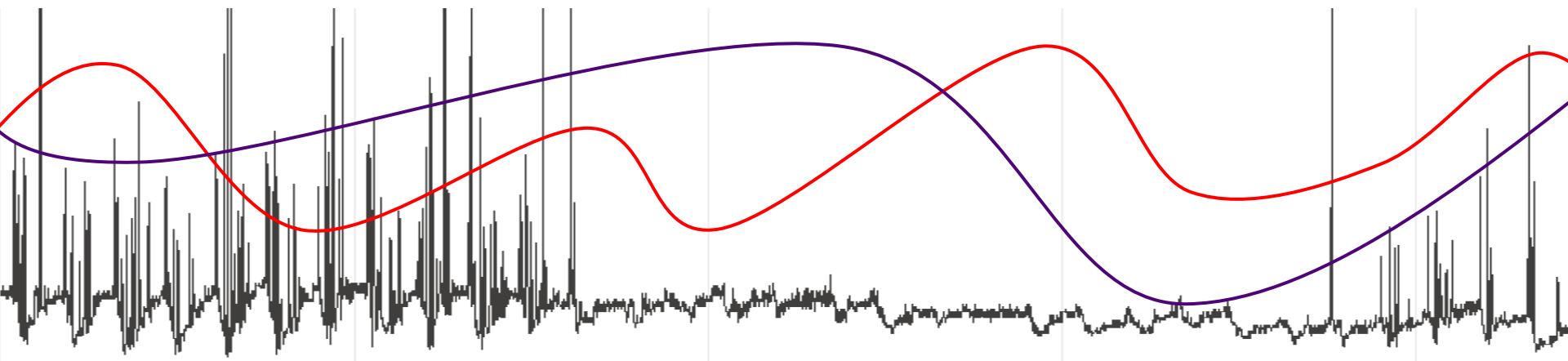
American Water Works Association (AWWA), Buried No Longer report, 2012



Timeværdier fra Kamstrup
varmemålere ...



... og vejrdata fra Dansk
Metrologisk Institut...



Bygningens termiske profil

