

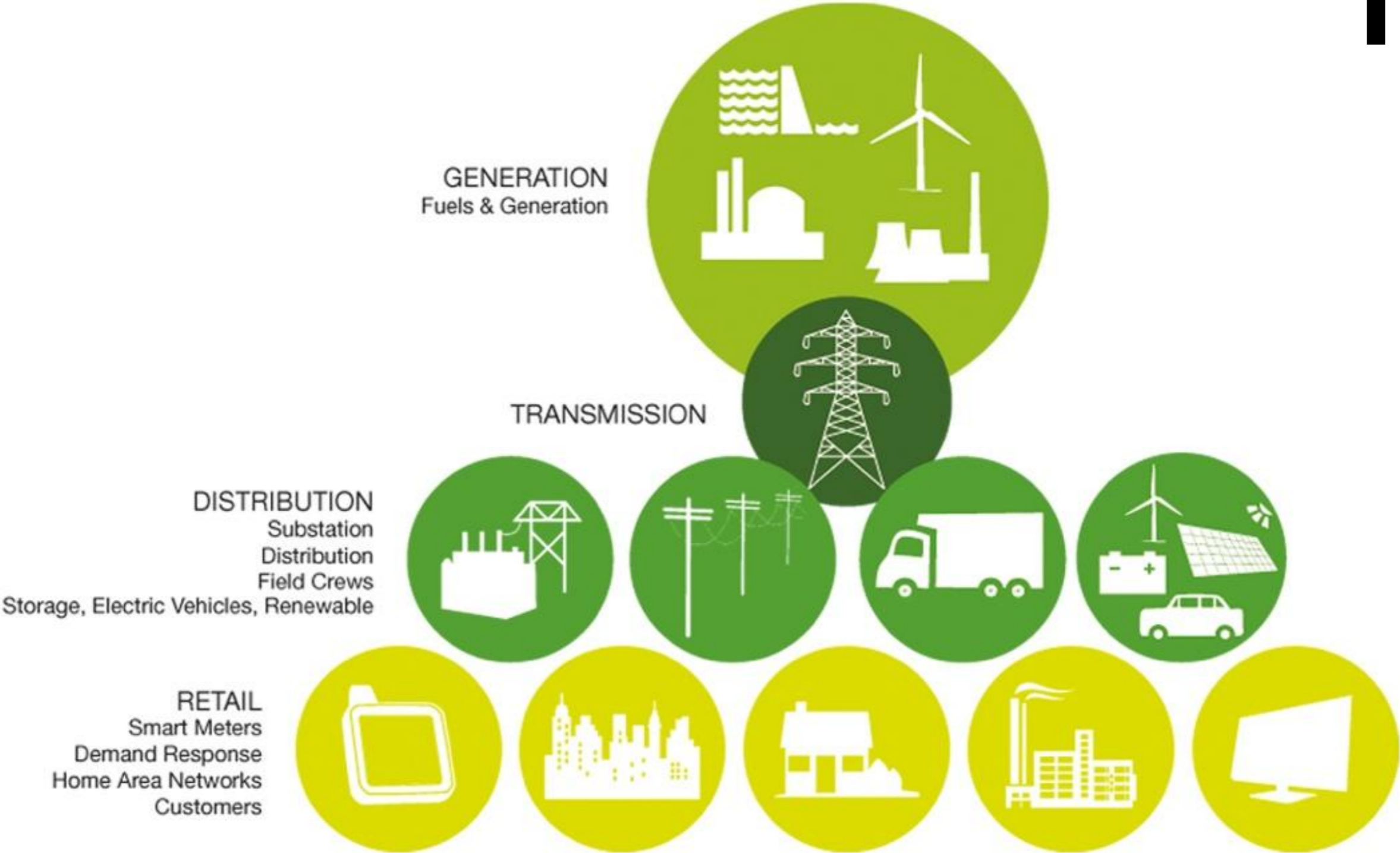
Greenbang

**Smart grid:  
10 market observations**

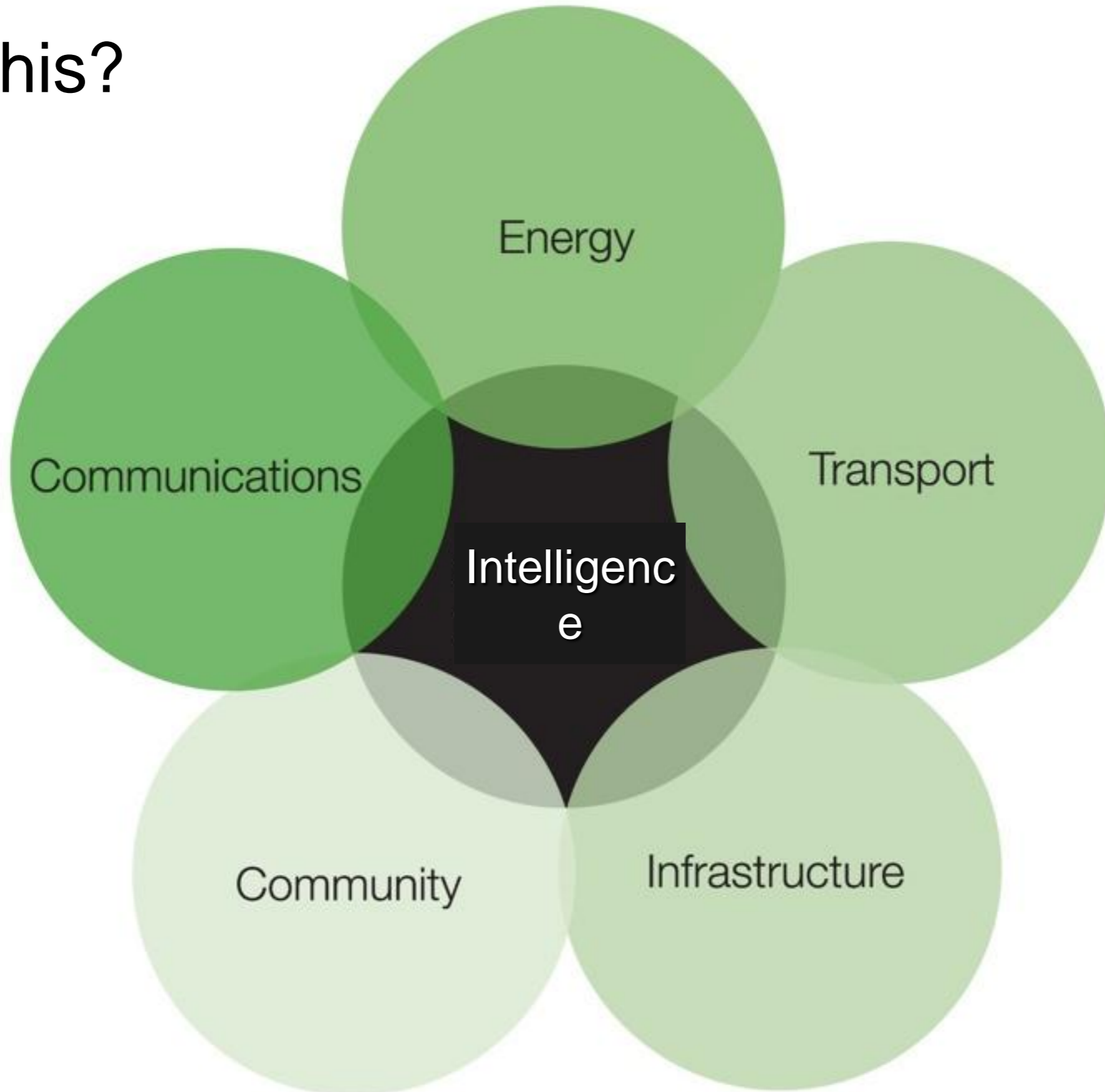
Dan Ilett - CEO

# The grid today is changing

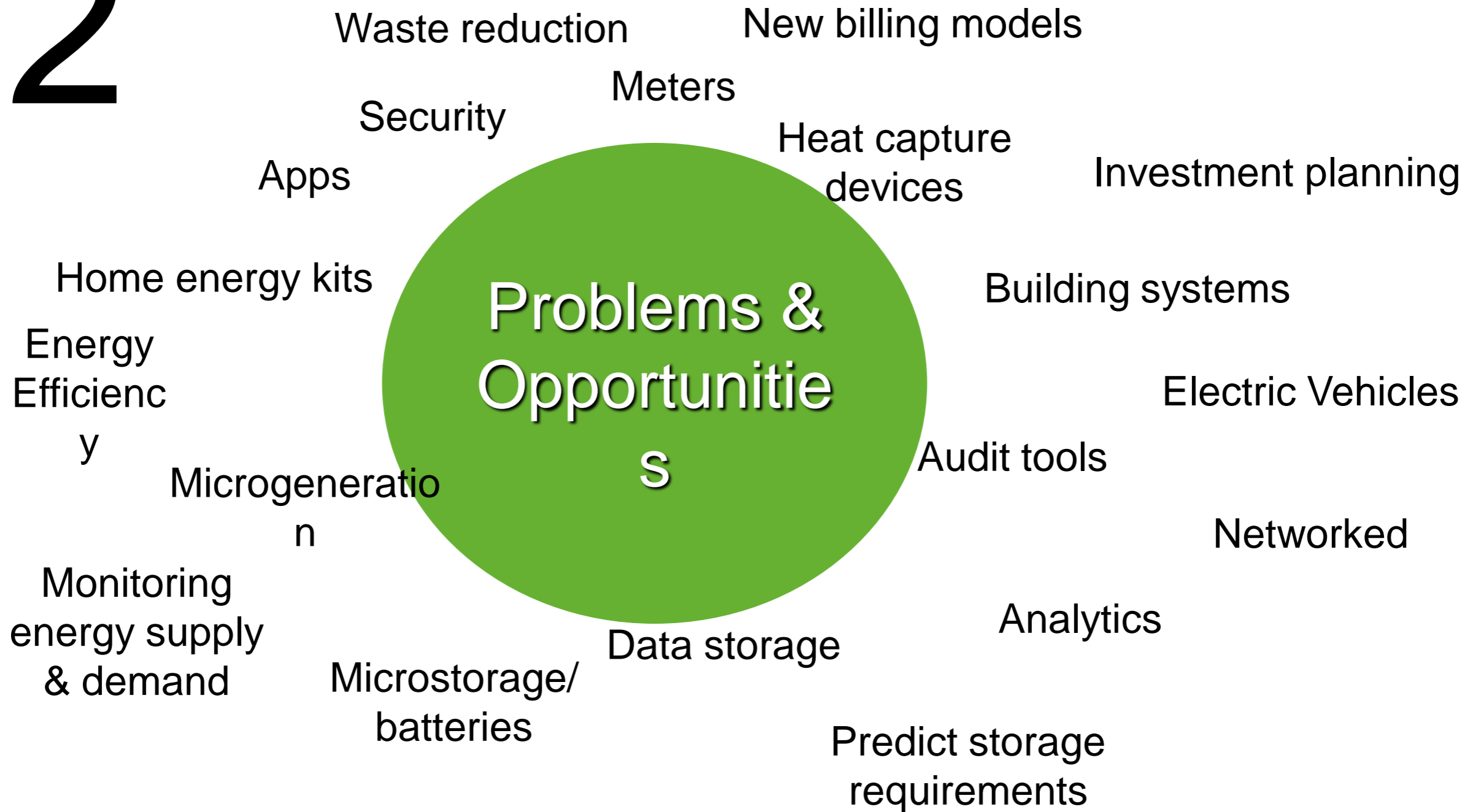
1



To this?



# 2



# 3

The drivers are universal and will put increasing pressure on governments to roll out more efficiencies

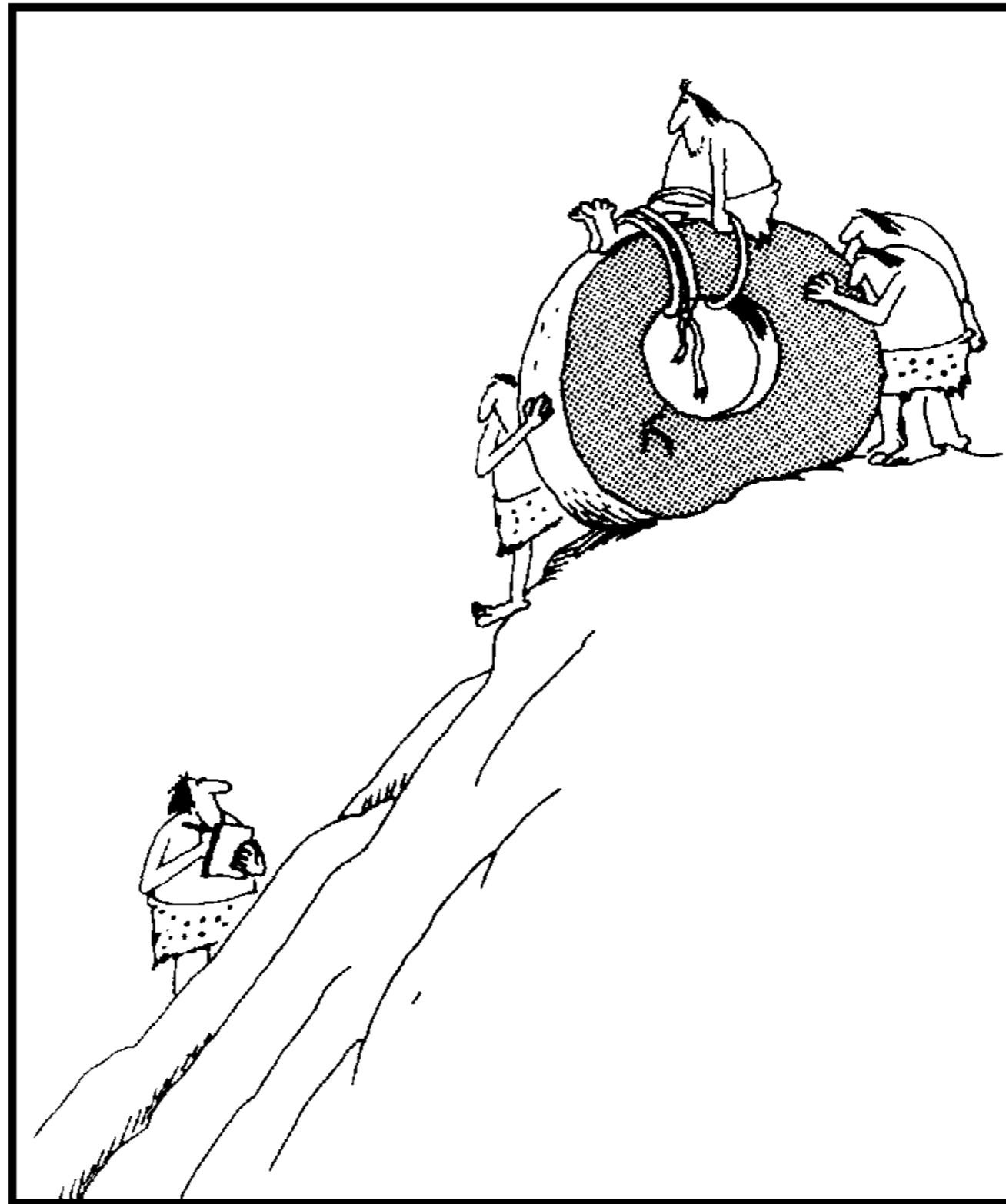
Fuel supply  
Energy security  
Rising carbon levels  
Regulation  
Price of oil  
Too much waste

A need to grow and manage energy

# 4

It's still early  
days

It's chaotic.  
Undefined.  
One-off  
projects.  
Lack of  
standards.



Early experiments in transportation

**Most energy is lost as heat  
(60% of household energy  
used is heat)**

**Almost 50% of CO<sub>2</sub> could be  
cut in London alone if buildings  
were insulated properly\***

**\*McKinsey Study that  
took months of work**

# 5

## The market is becoming defined



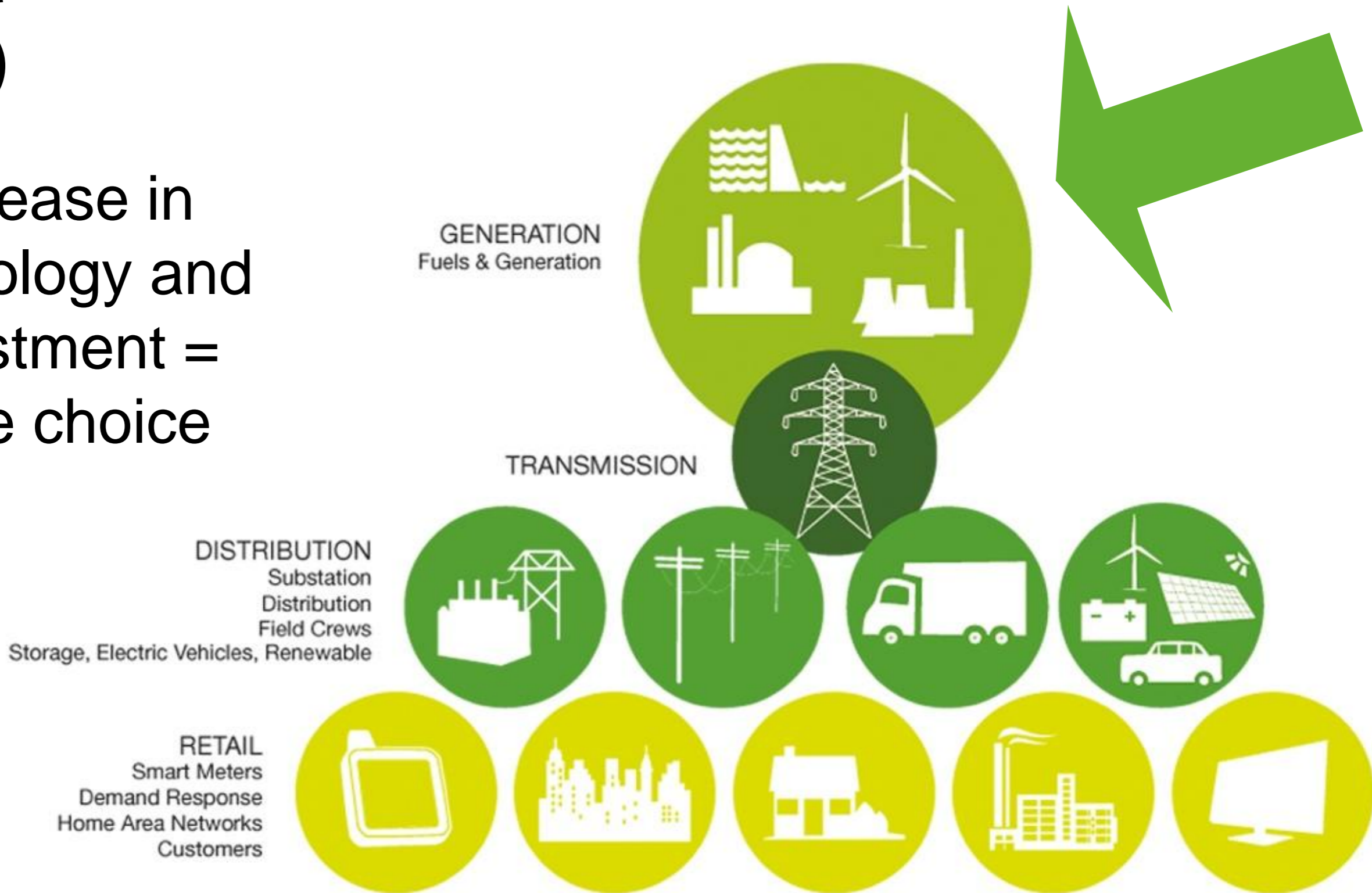
Bought for  
\$2.3bn by  
Toshiba

## Setting standards...

GE, SAP, Landis & Gyr, Itron, Logica, Sensus, Elster  
all trying to establish standards for smart grid in the  
UK

# 6

Increase in  
technology and  
investment =  
more choice



6.7% of electricity  
came from  
renewable sources  
in 2009

### UK RENEWABLE ENERGY UTILISATION 2009

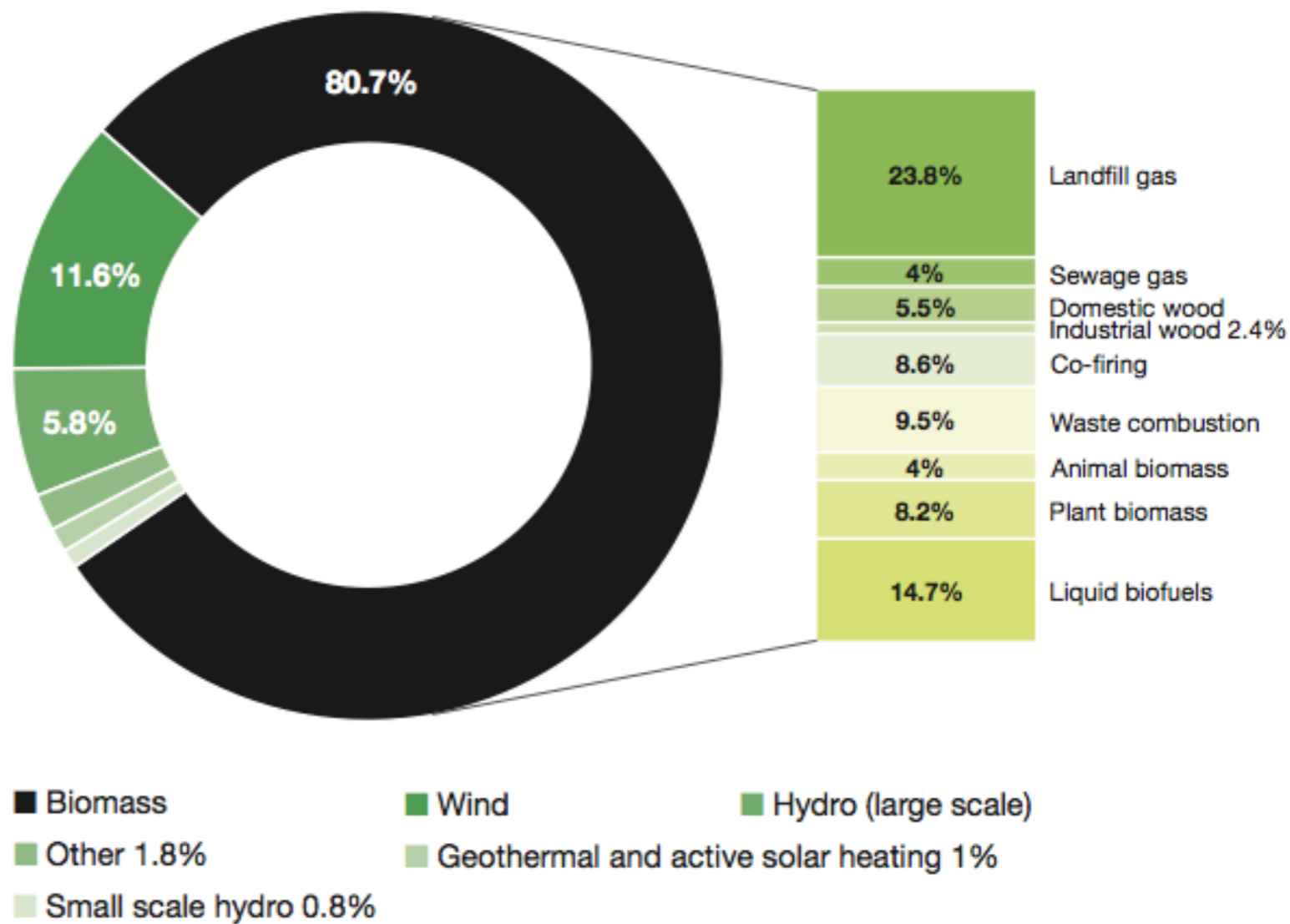
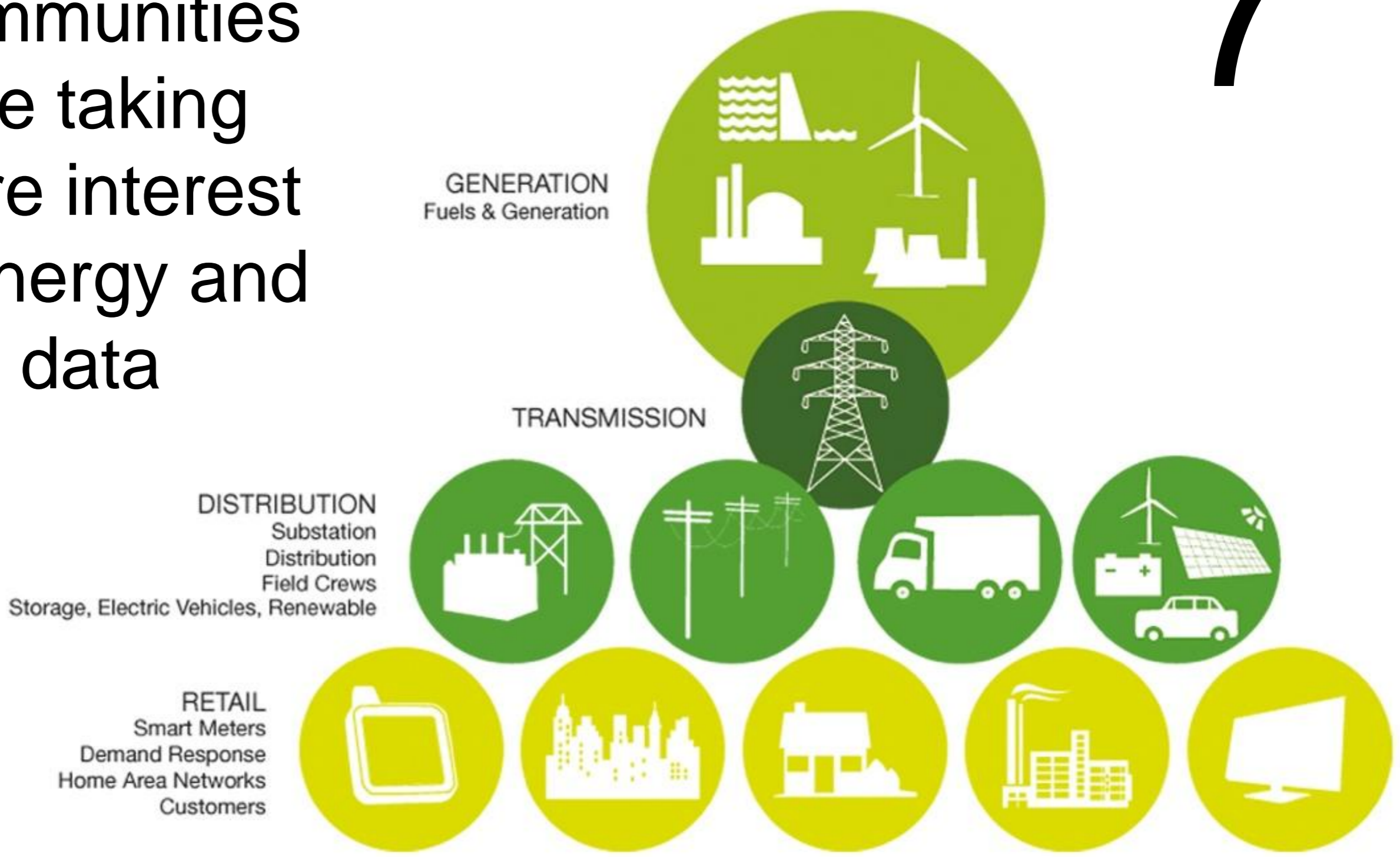


Figure 2: UK Renewable Energy Utilisation 2009<sup>6</sup>  
(Source: DECC Energy Statistics 2010)

# Communities are taking more interest in energy and data



# Stop Smart Meters!

*Fighting for your health, privacy, and safety*



Home About Bulletins Donate How YOU Can Stop 'Smart' Meters Press Releases Sample Ltr to Local Govt Why Stop Smart Meters?

← Feb. 16th Protest at the CA Public Utilities Commission Denying Non-Thermal Wireless Health Impacts Growing More Untenable Every Day →

## Anti- Smart Meter Protesters Greet Obama in Woodside

Posted on February 18, 2011 by onthelevelblog

[CA Local Govts on Board: 43](#)

**Stop Smart Meters! Contact**

E-Mail: [info@stopsmartmeters.org](mailto:info@stopsmartmeters.org)

**Twitter: stopsmeters**

- Full press release and video of today's arrest of SSM! director Joshua Hart at the Capitola PG&E office: <http://t.co/KQW7qZt> about 13 hours ago from web
- Stop Smart Meters! director Joshua Hart arrested in Capitola this afternoon protesting PG&E "smart" meters- details and video to come... about 16 hours ago from web
- "Smart" Meter causes more than

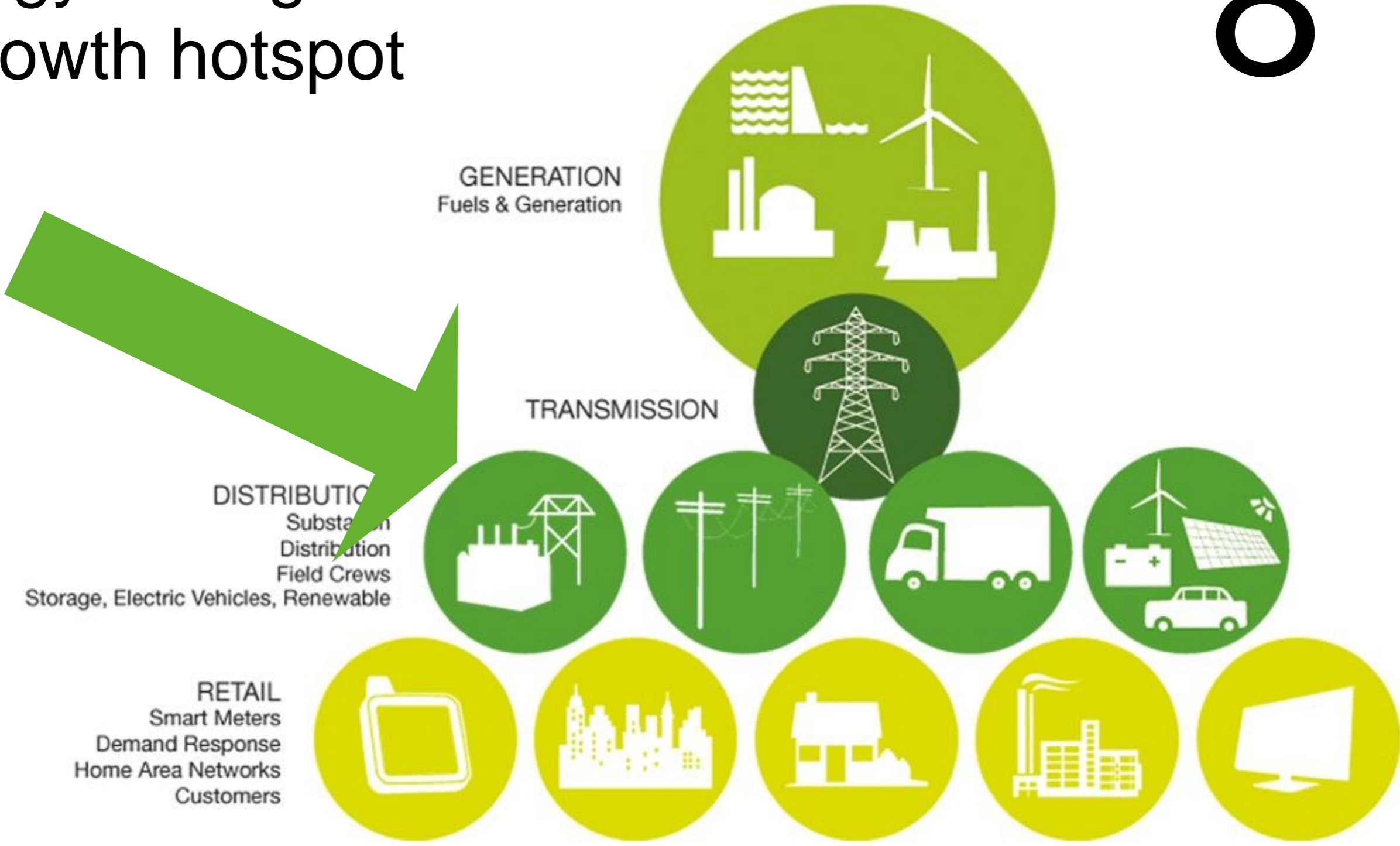




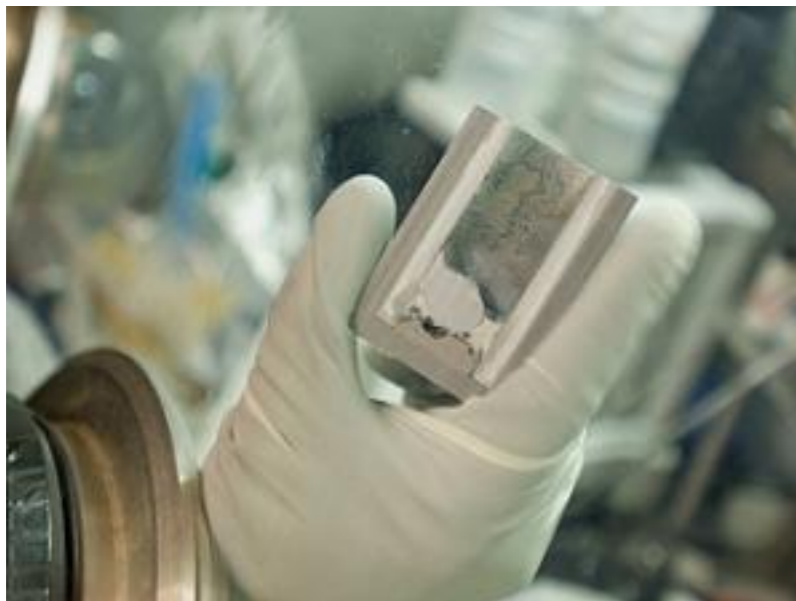
# Samsø Energy Academy

## Denmark

# Energy storage is a growth hotspot



# Energy storage Biggest problem?



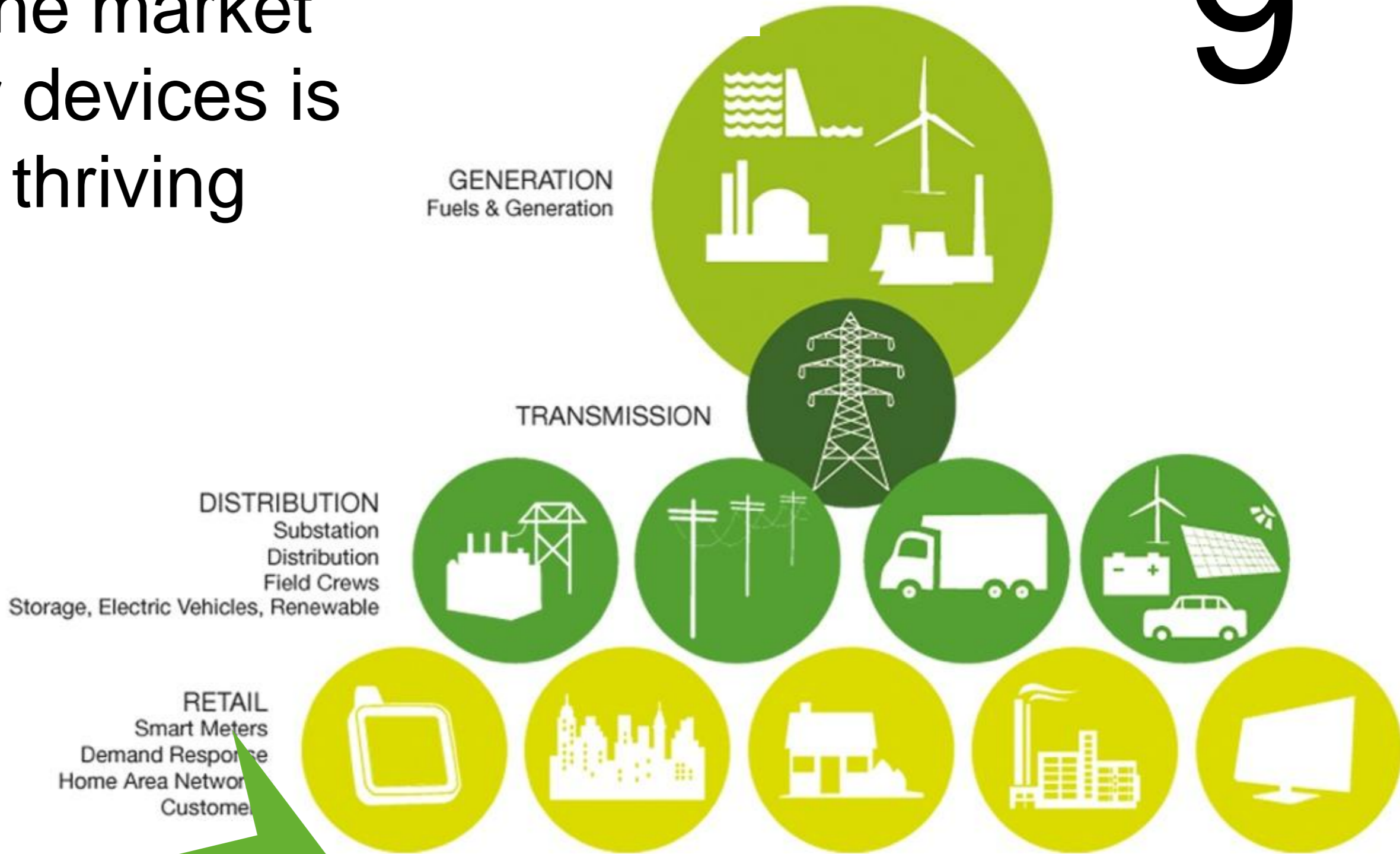
Battery-based storage has the most traction so far, but other interesting technologies are being tested and deployed, in particular, flywheel-based energy storage.

Bill Gates, for instance, recently put money into MIT battery guru Donald Sadoway's startup, Liquid Metal Battery

Key players: ABB, AES Energy Storage, Beacon Power, Saft

**Car companies** such as Nissan are very keen to be seen as leaders in the battery space

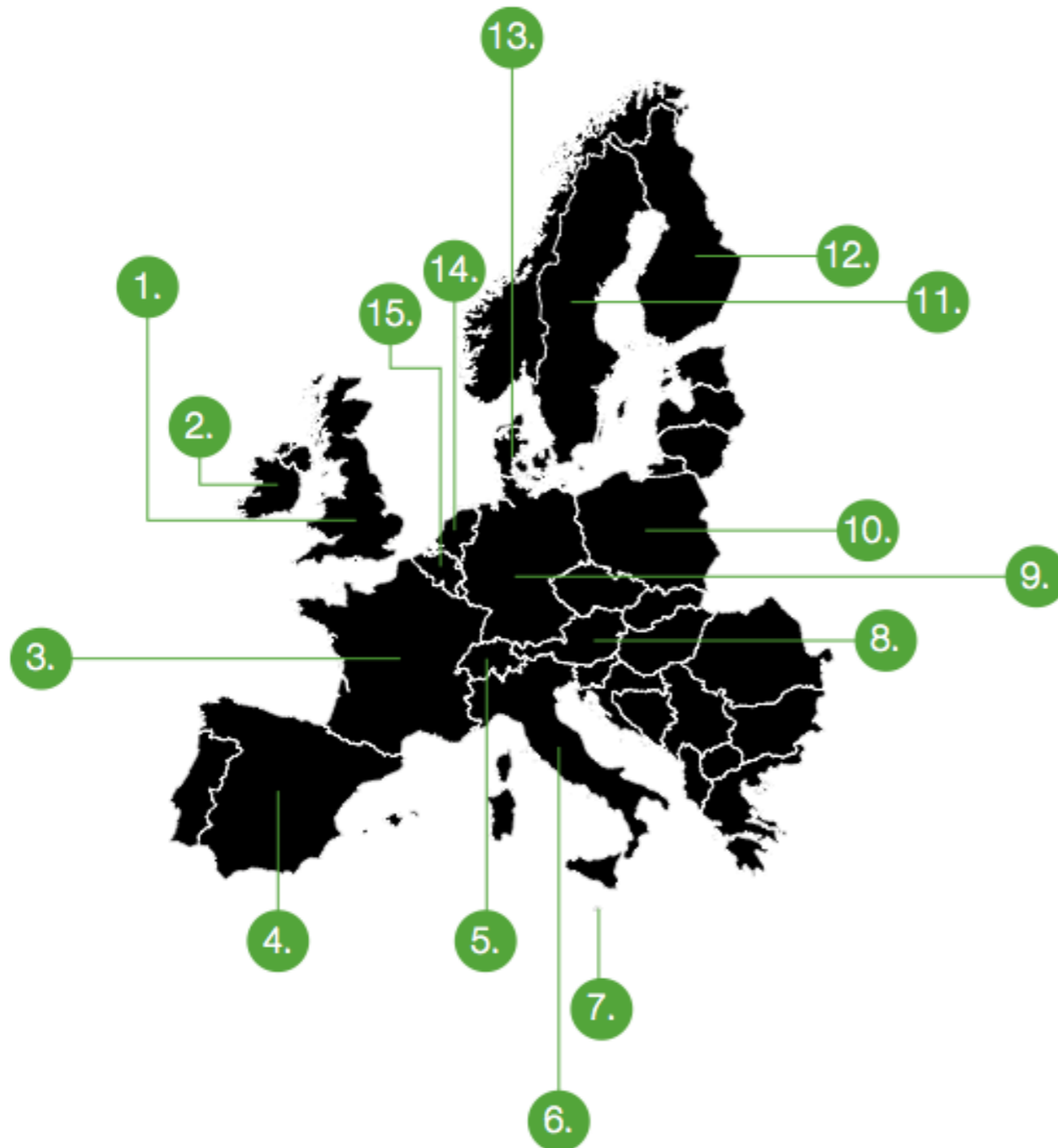
# The market for devices is thriving



In the US, More than five million smart electricity meters have been installed as part of the \$787 billion Recovery Act bill.

Nearly 90 percent of these can be found in just eight states.

The U.K. government's Department of Energy and Climate Change aims to roll out 53 million smart meters in the U.K.'s 30 million homes and businesses by 2020.

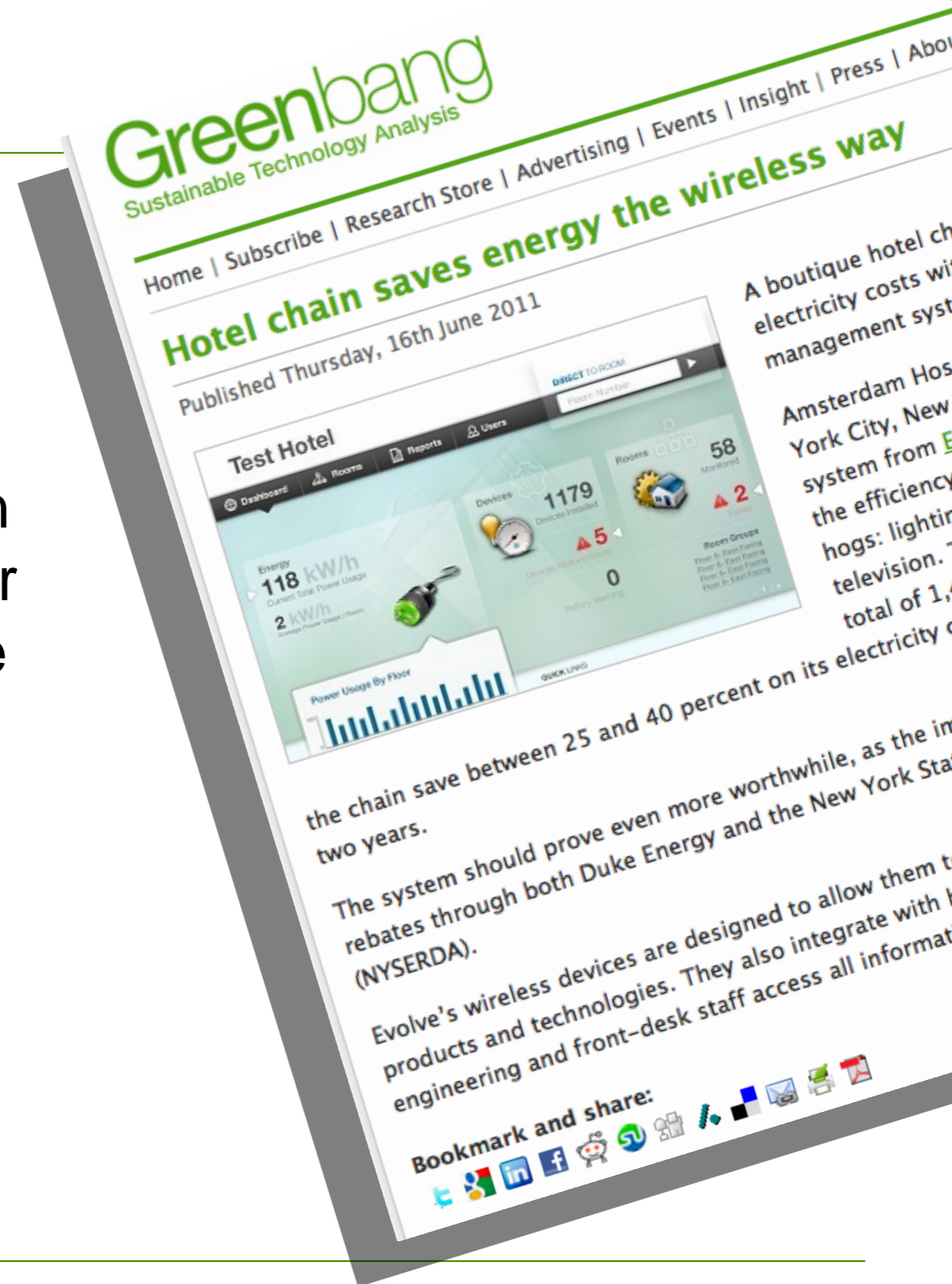


- In Europe, the next big smart metering rollout in the works is Project Linky in France (35 million meters between 2012 and 2017).
- Key players: Echelon, Landis+Gyr (recently acquired by Toshiba), Elster, Itron, GE, Sensus

\$25bn-worth of smart meter roll outs over 10 years

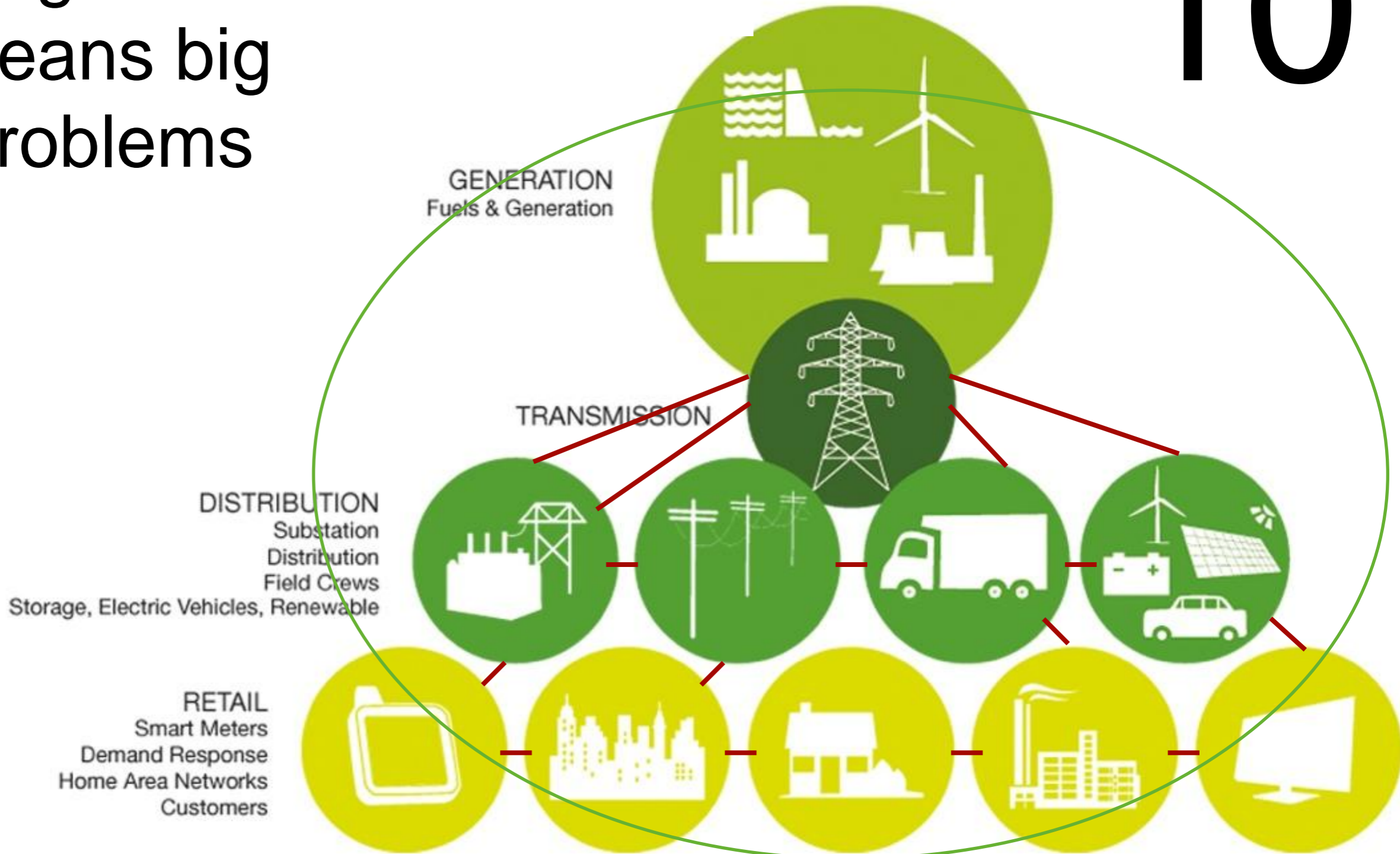
Home automation technologies aren't likely to make their biggest splash in homes first; instead, look for growth in niche markets like hospitals and hotels

Also look for automation of heating



Big data  
means big  
problems

10





# What kind of data?

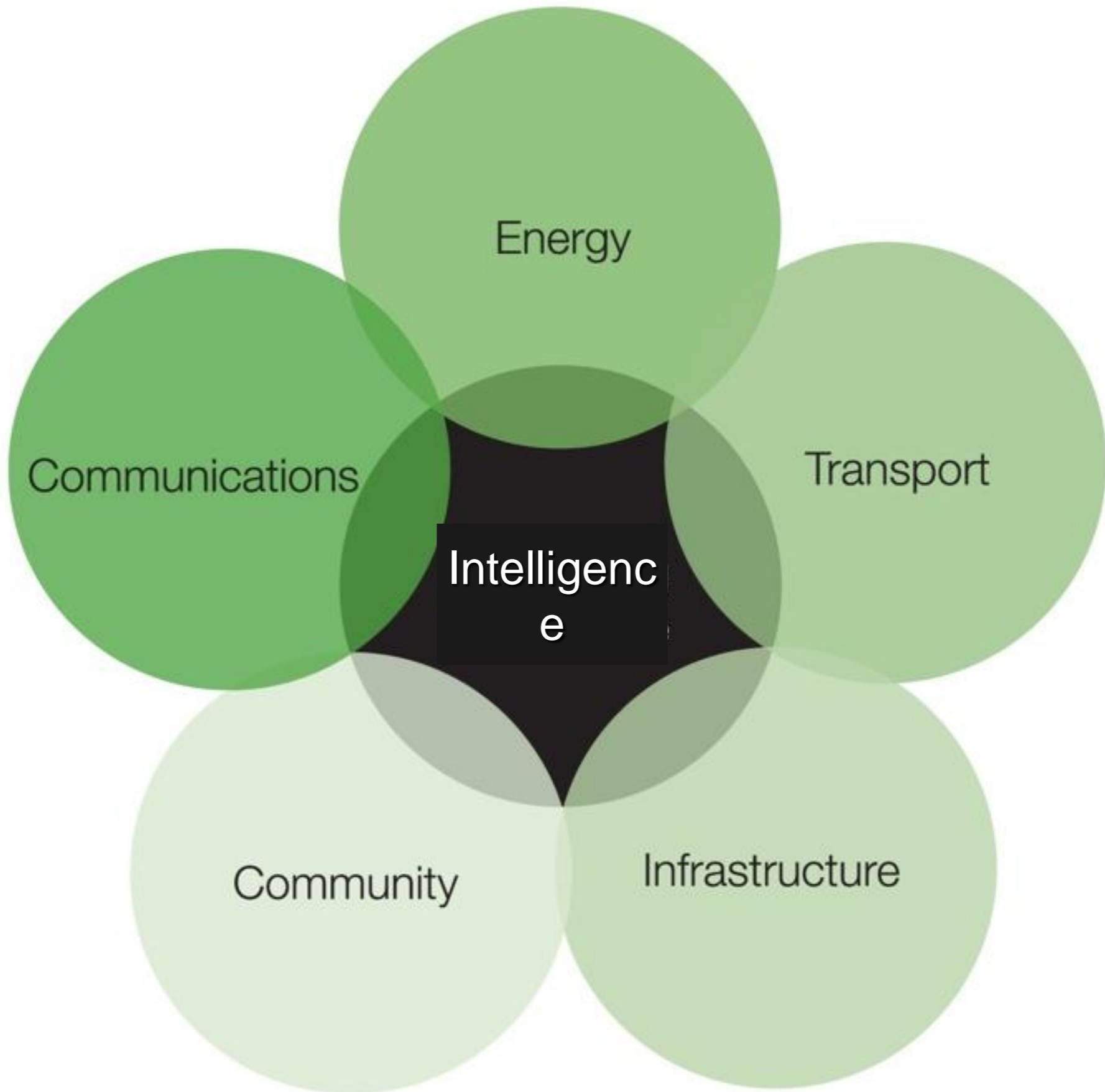
Generation  
Usage  
Maintenance  
Networks  
Sensors  
Distribution  
Application  
Pricing  
Environment  
Modelling



"Smart Meters expand consumption data by a thousand percent or more. They batter your systems with unprecedented amounts of voltage and interruption information.

Meanwhile, production systems are churning out reams of new financial, customer, and staffing information. Somewhere in this data deluge lies the path to a more efficient tomorrow."

**IBM alone spent \$1.2 billion to acquire  
analytics company SPSS in 2009**



Greenbang

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