

## **Energy Transition or Electricity Transition?**

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innogy SE · Volker Stehmann, Corporate Affairs, Head Markets & Renewables



### Agenda





Innogy – a major European energy utility



**Electricity transition or energy transition?** 



We are innogy!

RWE forged innogy to become a blueprint utility for a decarbonised, decentralized & digitalized energy system innogy



## innogy is a major European utility company





Source: Bloomberg new energy finance as of 02/2016, Grid operators according to StromNEV; company data

<sup>1</sup> accounting view

 $^2\text{innogy}.$  Based on grid operated. Figure as per 2015 innogy SE  $\cdot$  December 2016

#### Renewables

We are a global leader in wind energy and operate more than 3,100 MW of renewable capacity



#### Installed capacity (MW)<sup>1</sup>

<sup>1</sup> As of December 31, 2015; pro-rata view, excluding Zephyr portfolio. innogy has further renewable capacity of 0.3 GW in consolidated participations related to the Grid and Infrastructure segment | <sup>2</sup> By capacity

Source: Bloomberg New energy finance; asset owner database, as of March 2016, http://www.innogy-renewableslive.com/#/dashboard

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Grid and Infrastructure

## We provide access to energy through the No.1 distribution grid<sup>1</sup> in Central Europe





Note: All figures as per 2015. Rounding differences may occur <sup>1</sup> Based on distributed volume Source: Moody's

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Retail

### Our pan-European customer base is being supplied with electricity and gas



#### Note: B2B including industrial customers as well as resellers, B2C including residential and commercial customers. Depending on national regulations and market specifics, the individual attribution of customers to our B2C or B2B business may vary to a certain extent across our markets. <sup>1</sup> Customer numbers are rounded to the nearest 10,000 customers. Numbers may not add up due to rounding differences

8,060

4,700 5,400

4,980

23,130

60

10

10

20

110

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### Retail

## We offer future oriented energy+ products and services to our customers





<sup>1</sup> As of December 31, 2016 | <sup>2</sup> SmartHome devices and units are also sold to end customers through regional companies, up to 2015. Total number also includes devices and units sold to those regional companies |<sup>3</sup> As of 30 June 2016

#### Innovation

## We are at the pulse of the global hot spots of the energy revolution with our innovation hubs

### London

#### **Berlin**

innogy



Source: innogy

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#### Innovation

## Our start-ups provide solutions to meet the needs of customers and the rapidly changing energy industry





Moving made simple Innovating and reducing the costs of moving for everyone



**The future is light** Creating flexible solutions and push the limits of organic electronics for customers' benefit



Switching customers to independent and green, locally produced energy



**Put data to work** Identifying "energy vampires" in customer's homes



Internet of Things (IoT) Making the development for IoT powerful but simple

Source: innogy venture capital portfolio, examples only











### Agenda





# Innogy – a major

European energy utility



*Electricity transition or energy transition?* 



## Steady growth of RES. System integration remains a challenge.



### **Renewable Electricity in Germany (TWh)**



- The German Renewable Support scheme "EEG" was very successful to **boost large volumes** of renewable energy into the system
- Largest share from intermittent sources Wind and PV
- More than 32% renewable share of gross electricity consumption in 2015
- However, high "technological pioneering cost"

- Rapid growth of intermittent renewables was not adequately backed by parallel grid expansion (e. g. "North-South-Links")
- Increasing need to counterbalance grid congestions with curtailment of renewables and re-dispatch of conventional plants
- EEG 2017 "on the break": growth restrictions in "grid expansion areas", offshore North Sea

## innogy's "Energy Policy Compass"



### **Overarching policy target**



### There is potential for more electricity...





#### Explanation

- Overall share of electricity in end user energy demand is relatively low (~20%)
- Larger share is driven by heating in industry and household sectors and by mechanical energy demand in transport and industry.
- According to FFE it is possible to substitute about 2/3 of non electric energy with electricity.



## ... in particular in heating and transport...

• Overall demand for heat, transport and electric energy has to shrink significantly to meet energy transition targets.





- Furthermore, renewable electricity is substituting fossil fuels in transport and heat sectors.
- Whilst the traditional electricity demand is reduced, new demand will outgrow the reduction, so that we see a net growth in electricity. Gas and other fuels will probably shrink on a net demand level.
- A precondition for this to happen is a level playing field of taxes and levies on the various energy carriers.



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## ...however this does not necessarily mean "all electric". Decarbonisation also needs "green fuels".





### Agenda





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**Electricity transition or energy transition?** 



## The energy world is moving quickly.





## Our mission is to create an energy company that exceeds the expectations of our customers









We are committed to creating a sustainable energy system for new generations to live in a world worth having We are a fast-moving company, committed to **radical innovation** and **playing** 

**to win** in an ever changing game of business and market development

We are committed to **inspiring people**, offering solutions beyond their current needs and expectations and **making their lives easier** 



## LET'S INNOGIZE

