E.ON Climate & Renewables Company Presentation

Setting the Pace in Renewable Energy

Version 1.7

Content

User guide

This presentation is intended to give an overview of E.ON ´s utility scale Renewables Business. It explains our business and sets out the roadmap and priorities for 2017.

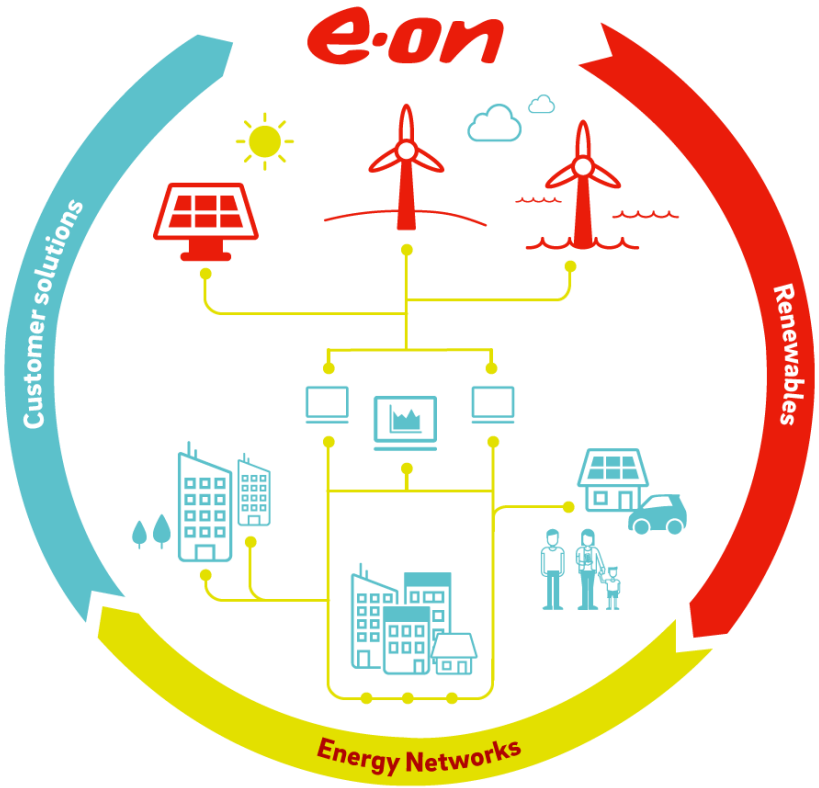
The presentation is primarily targeted at internal audiences. However you can also share the slides externally and use the deck (or a selection of slides) for external presentations. For this purpose and your convenience we have included a large selection of slides in the back up.

If you have any queries on slides or would like to change content please contact Matt Tulis (Matthew.Tulis@eon.com). Please inform our Press Department if you are preparing to give an external presentation (Markus.Nitschke@eon.com). We are happy to assist.

This presentation is updated as deemed appropriate, at least on an annual basis. Quarterly figures are not included systematically.

About us

E.ON strategy



Global trends like sustainability and climate protection, digitalization and technological innovation are altering the energy landscape. At the same time our customers' energy needs are changing.

A new energy world – decentralized, green, and interconnected – is emerging. Our core businesses reflect the key energy trends:

The global growth of **renewables**

The transformation of yesterday's power lines into tomorrow's smart **energy networks**

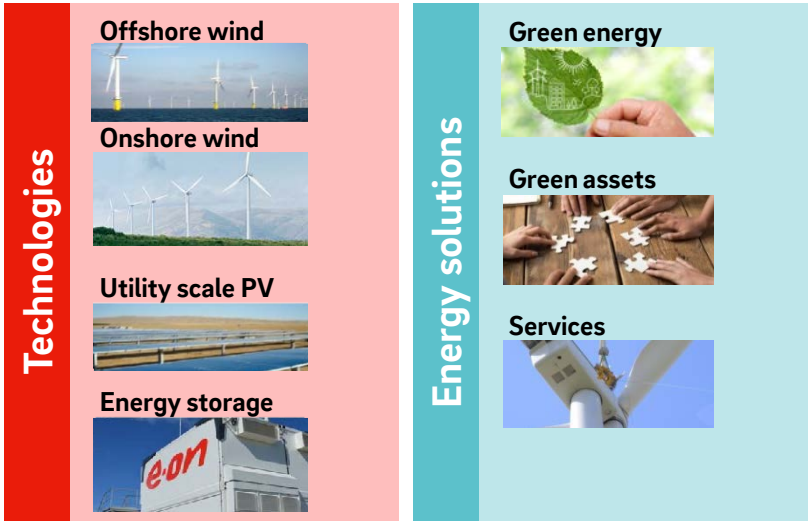
The increasing demand for innovative **customer solutions**

Partner for the New Energy World

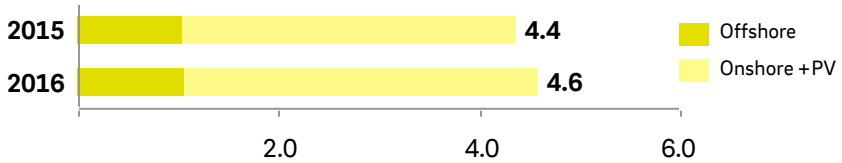
Renewables at a glance

What we do

- We are among the largest renewable energy players in our core markets (Europe and US)
- Our focus is offshore and onshore wind, as well as utility-scale PV and energy storage
- We deliver and own utility scale renewable projects, engaging in development, construction and operation
- We partner with investors offering stakes in our existing green assets or projects under development
- We provide long term green energy PPAs[1] to our customers as well as offering Wind O&M/ AM/ EM services[2] to 3rd parties
- We have developed more than 6 GW of renewable energy projects since inception in 2007
- 1,100 E.ON employees work in Renewables



Owned capacity[3] (GW)



TWh produced[3]

1. Power Purchase Agreements
2. O&M: Operations & Maintenance; AM: Asset Management; EM: Energy Management, via "E.ON Energy Services"
3. Pro rata

Source: E.ON Facts & Figures 2017

E.ON Climate & Renewables in numbers

>6 GW
delivered renewable capacity

>€10 billion
Invested in renewable energy

4.6 GW
owned renewable capacity

7
countries where E.ON Climate & Renewables operates

5.3 GW
operated renewable capacity

90%
projects built on time, on budget

Global # **3** in offshore wind[1]

>10,000
blades regularly inspected each year

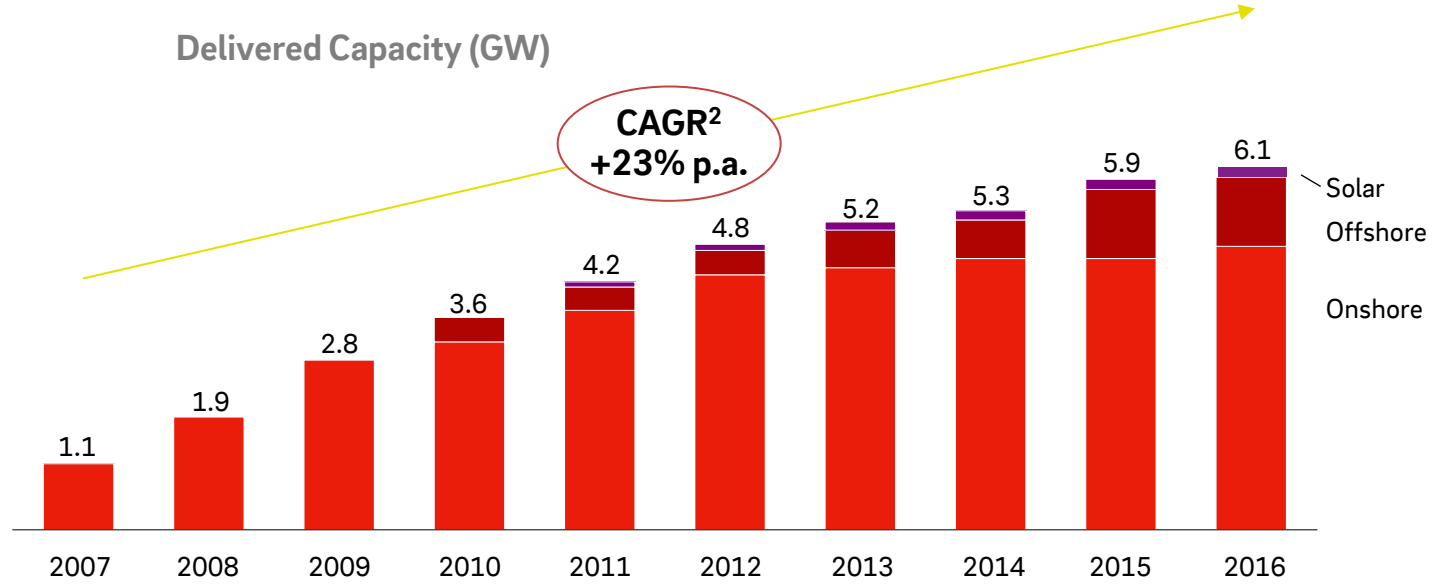
~1,100 employees

1. The European offshore wind industry – key trends and statistics 2016, Wind Europe

E.ON Climate & Renewables has achieved a very solid position and excellent delivery

Global #3 in offshore wind[1]

Global leader in onshore wind

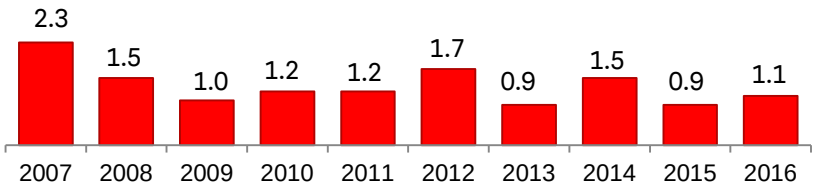


We own a diversified renewables portfolio of 4.6 GW and operate 5.3 GW across Europe and the US. Our total investment surpassed €10bn

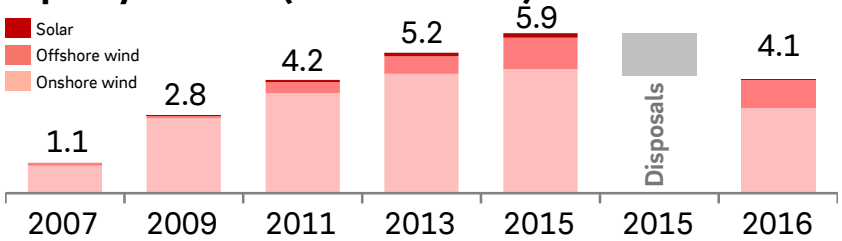
1. The European offshore wind industry – key trends and statistics 2016, Wind Europe
2. CAGR = Compound Annual Growth Rate

We bring a wealth of experience and industrial scale know-how to further build out our Renewables business

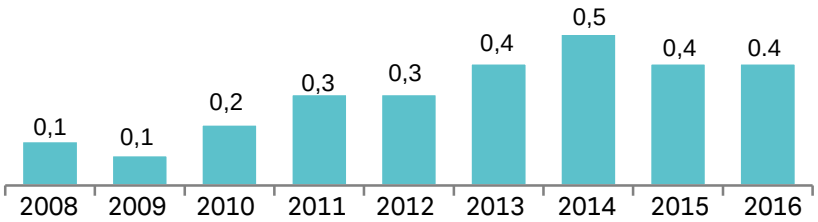
Investments (bn€)



Capacity installed (GW cumulated)



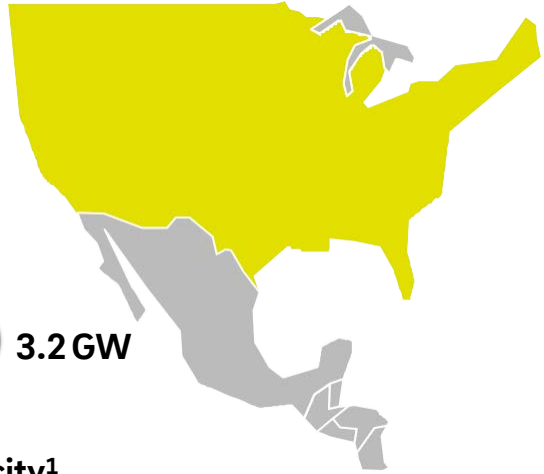
EBIT development (bn€)



Key take away

- Total **investments of €10bn** in new capacity since inception of E.ON Climate & Renewables
- Over **50 projects** delivered with vast majority completed **on time and on budget**

E.ON renewables portfolio



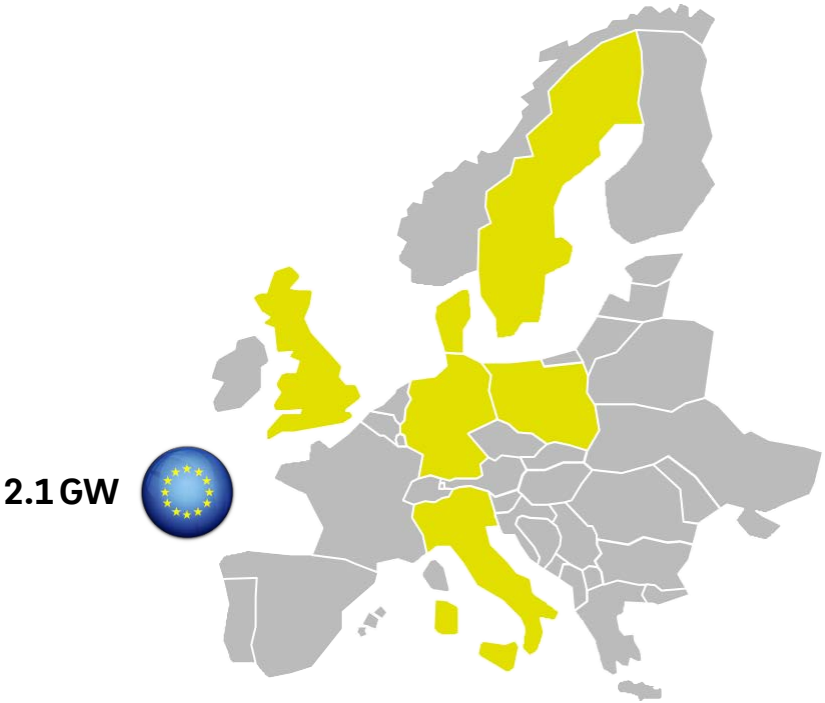
3.2 GW

Highlights

5.3 GW Operated capacity[1]

4.6 GW Owned capacity[2]

- 1.1 GW Offshore capacity
- 3.5 GW Onshore + PV capacity



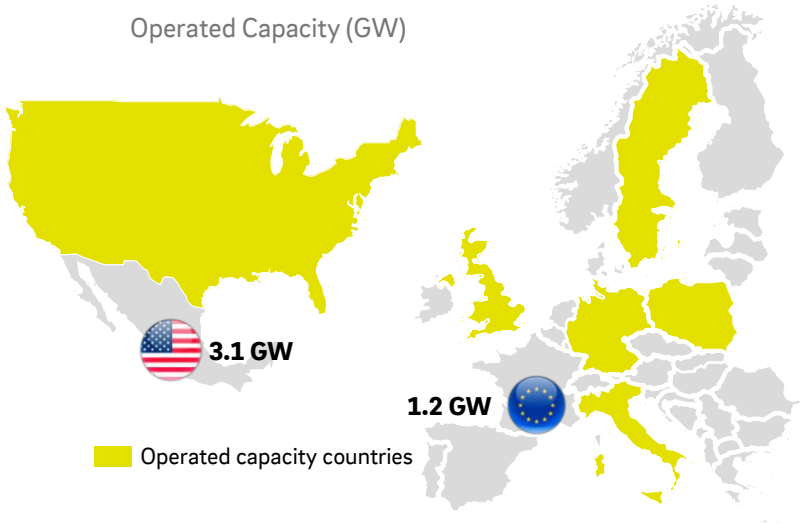
2.1 GW

1. Operated sites, where E.ON is the operator, regardless the ownership share
2. Pro rata

Source: E.ON Facts & Figures 2017

Technologies

We have a strong track-record in Onshore Wind



Key facts

- 4.3 GW operated capacity
- Portfolio spread across Europe and the US

Project examples

Camster, onshore wind farm in the north of Scotland

COD:	2013
E.ON share:	100%
Capacity:	50 MW

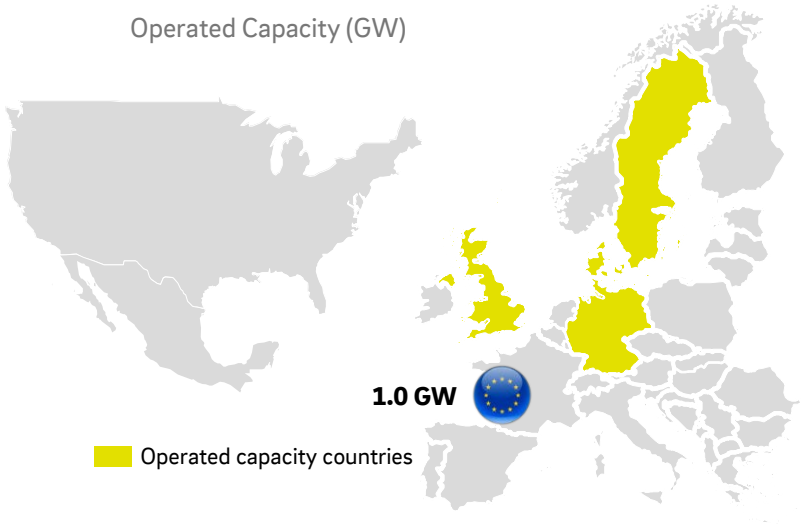
Grandview, onshore wind farm in Texas Panhandle

COD:	2014
E.ON share:	50%
Capacity:	211 MW

Roscoe, onshore wind farm in West Texas

COD:	2008
E.ON share:	100%
Capacity:	209 MW

We rank among the top tier in Offshore Wind experience



Key facts

- 1.0 GW operated capacity, global #3 for owned capacity[1]
- Portfolio across Germany, Nordic and UK

Project examples

London Array, the world's largest offshore wind farm

COD:	2013
E.ON share:	30%
Capacity:	630 MW

Humber Gateway, offshore windfarm UK North Sea

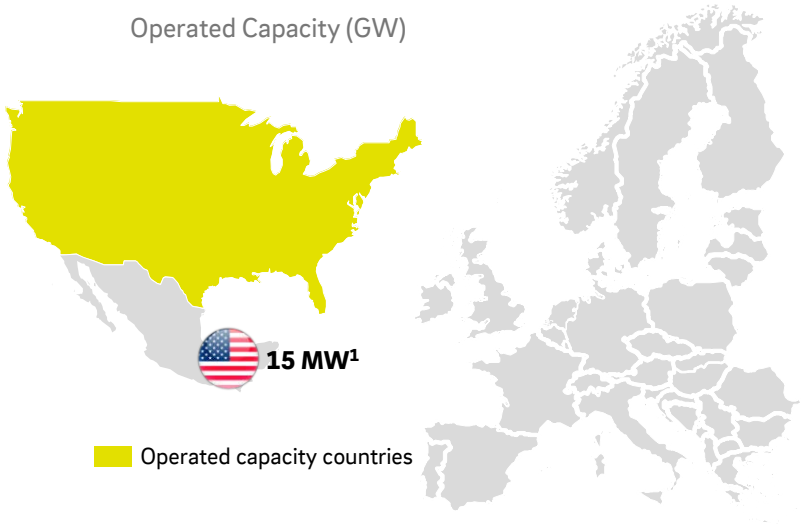
COD:	2015
E.ON share:	100%
Capacity:	219 MW

Amrumbank West, offshore windfarm German North Sea

COD:	2015
E.ON share:	100%
Capacity:	302 MW

1. The European offshore wind industry – key trends and statistics 2016, Wind Europe

We are creating value by transferring our experience in onshore wind to PV in the US



Key facts

- 15 MW PV operated capacity in the US[1]
- Close to 150 MW solar capacity delivered worldwide

Project examples

Tech Park Solar, PV park in Tucson, Arizona

COD:	2012
E.ON share:	100%
Capacity[1]:	5 MW

Valencia, PV park in Tucson, Arizona

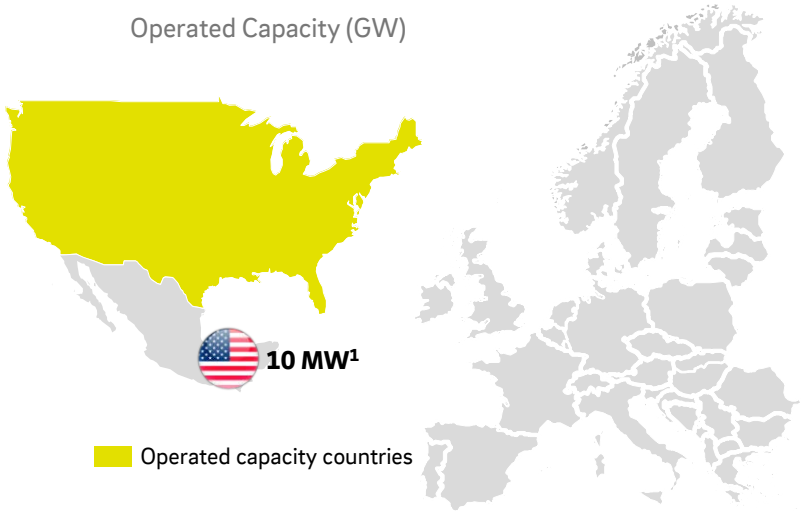
COD:	2013
E.ON share:	100%
Capacity[1]:	10 MW

Maricopa West, PV park in Kern County, California

COD:	2015
E.ON share:	0%
Capacity[1]:	20 MW

1. Capacity shown in MW AC

We are starting to grow in the North American grid-scale Energy Storage Market: 1st project delivered in 2017



Key facts

- Storage+PV: 10 MW[1] / 2.5 MWh Battery adjacent to 2 MW PV plant
- Application: Frequency response, Voltage control
- Technology: Lithium Titanium Battery

Project examples

Iron Horse, Energy Storage & Solar park in Tucson, Arizona
COD: 2017
E.ON share: 100%
Capacity: 10 MW

1. Capacity shown in MW AC

Energy solutions

We offer attractive propositions to our customer group

Our offering

Green energy

Providing **long-term Power Purchasing Agreements** (PPA) to Utilities and B2B customers[1]

Green assets

Monetizing parts of our development pipeline and operating asset portfolio through establishing long-term partnerships

Services

Offering **full scale operations & maintenance, short term repairs, as well as technical & commercial site management services** to customers

Our customers (examples)

Utilities

Commercial & Industrial

Financial Investors

Strategic Investors

Asset managers

Wind farm Owners

1. Including selling renewable energy to customers across Europe via our local retail organizations

As a seller of Renewable Energy, E.ON offers its customers competitive pricing and customized solutions

Our offer

The purchase / sale of renewable energy generated by our wind, solar & energy storage projects

Benefits to customers

- Credit-**worthy** counterparty
- Ability to offer customers **competitive pricing** and more **tailored** off-take **solutions**, such as
    - **Flexibility** in term (tenor) & size (MW) of offtake
    - **Renewable Energy** Credits (included or not)
- Can offer **wind, solar & energy storage** projects across the United States from our large pipeline of projects
- Balance sheet finance through construction helps keep projects **on target** schedule

As partner of choice E.ON offers outstanding investment opportunities in renewable assets

Our offer

Attractive investments in our development pipeline and operating **asset portfolio as long-term partner**

Benefits to customers

- Infrastructure investment with **stable, long-term returns**
- **Access to** E.ON's global **asset base** and **technical management expertise**
- **Complementary service offerings** to match ownership structure

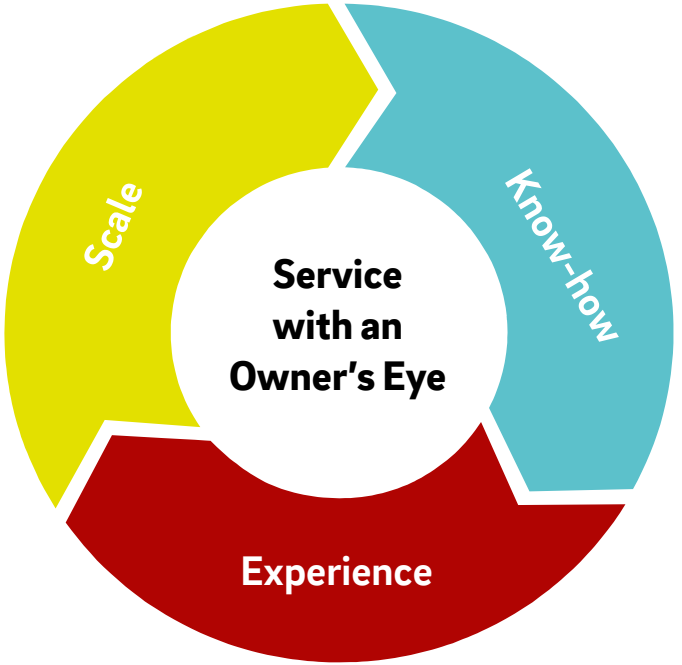
As an owner of a vast, global renewables fleet, customers benefit from E.ON's service experience

Our offer

- **Operations & maintenance**
- **Site management**
- **Wind farm optimizations**
- Major correctives
- Energy management

Benefits to customers

- Sustainable operations and maximized production from our extensive experience in operations and maintenance of wind farms
- Minimized downtime through the availability of local technicians close to operating sites
- Learnings and best practices transferred from E.ON's global organization and fleet of over 3000 turbines across multiple proven turbine technologies

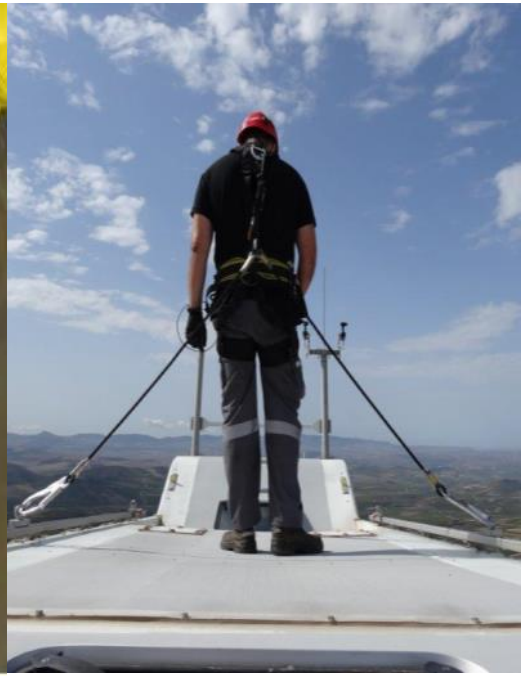


How we work and who we are

We have an uncompromising focus on Health & Safety

- E.ON Renewables TRIF[1] has **declined more than 60%** over the last 7 years
- Strong leadership in HSE – shaped further by a **Tailor-made Leadership Program** and preventative safety management
- Robust **HSE management system** integrated into all aspects of the business and externally certified[2]
- Founding member of **G+ Global Offshore Wind Health & Safety Association** and active member of H&S working groups in WindEurope[3], GWO[4], Renewables UK Wind Association, American Wind Energy Association

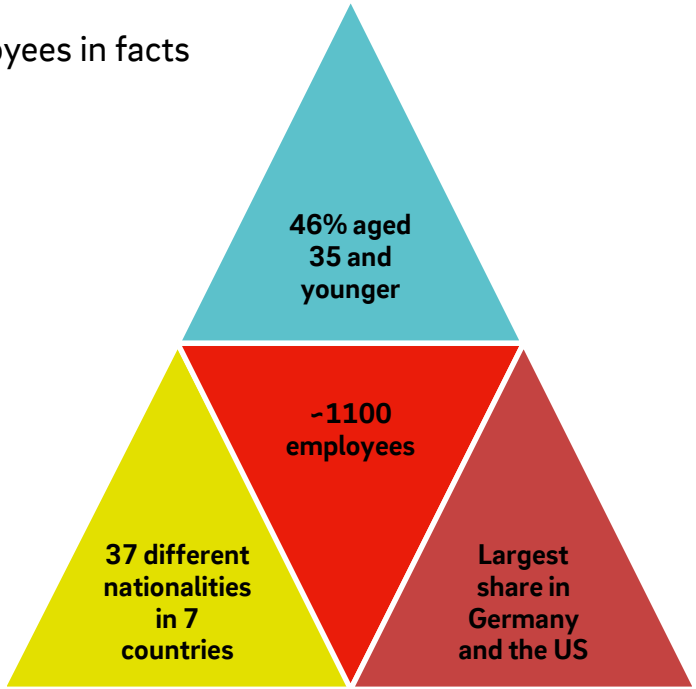
Profound Health, Safety and Environment culture key element of E.ON's value system



1. Total recordable incident frequency (TRIF) is the sum of recordable incidents per one million hours worked
2. According ISO 14001 and OSHAS 18001 since 2010
3. Formerly known as European Wind Energy Association
4. Global Wind Organization

Lean and diverse workforce is E.ON Climate & Renewables' most valuable asset

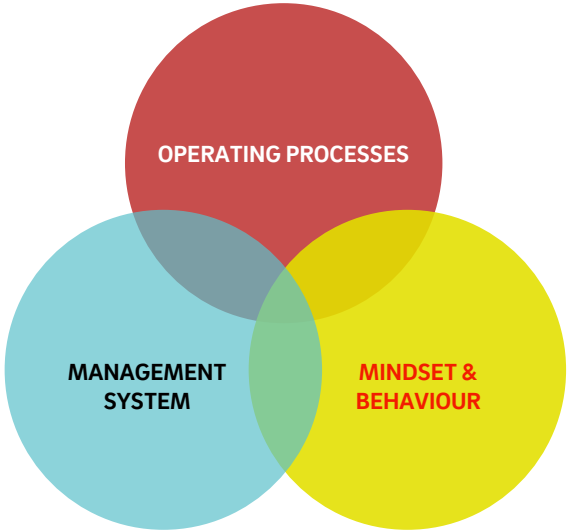
E.ON Climate & Renewables employees in facts and figures[1]



1. HR analytics as of Q1 2017

Deploying Operational Excellence in various dimensions fosters our competitiveness

Operational Excellence (OE) drives performance improvement across three main dimensions



Operating Processes	The set of physical assets, operating standards and practices that generate value
Management System	The way that the organization works, decides, drives and improves the performance, supported by healthy HR processes
Mindset & Behaviour	The way that people think, behave and evolve, upgrading their capabilities to work together, communicate and improve

E.ON Climate & Renewables Board of Management

Chief Executive Officer (CEO)

Anja-Isabel Dotzenrath

20+ years industrial and consulting experience in utilities

Functional expertise in strategy development, transformation, post-merger integration and finance

Degrees in Electrical Engineering and Business Administration

Chief Operating Officer (COO)

Sven Utermöhlen

20+ years industrial and consulting experience in energy and oil & gas

Expertise in project development and execution, asset operations, strategy and organizational design

Degree in Geophysics

Chief Financial Officer (CFO)

Judith Buss

20+ years finance and M&A experience in banking, industrial and utility industry

Negotiation and project leadership experience in M&A; capital markets /IPO experience in investment banking

Degree in Business Administration

Market: Favorable for Renewables

Lower costs, emissions among key drivers for global renewables deployment

NEW ENERGY WORLD

Ever-cheaper clean tech[nology] provides a real opportunity for investors to get more for less. This is exactly the kind of situation, where the needs of profit and people meet, that will drive the shift to a better world for all

Erik Solheim
Executive Director,
UN Environment Programme

SUSTAINABILITY

This pursuit of renewable energy benefits our customers and communities through cleaner air while strengthening our business through lower and more stable energy costs

Mary Barra,
General Motors
Chairman and CEO

INDUSTRIAL POLICY

Investments aimed at dramatically raising energy efficiency standards and expanding the supply of clean renewable energy sources will also generate tens of millions of new jobs in all regions of the world.

University of
Massachusetts, Amherst

LOW CARBON EMISSIONS

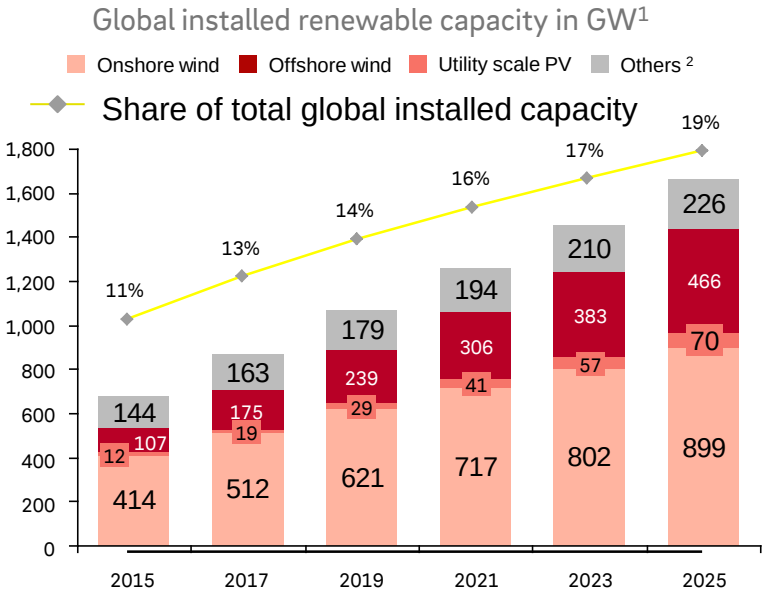
The European Union has also managed to significantly reduce the greenhouse gas intensity of its economy. It is presently one of the most greenhouse gas efficient major economies, and is set to become the most greenhouse gas efficient economy in the G20 through the implementation of the 2030 climate and energy targets

European Commission

Second Report on the
State of the Energy Union

Renewables becoming crucial in global generation mix

Growth in utility scale renewables



Key drivers for renewable support

✓ **Demand for sustainability**
Global public demands more sustainable power sources. In some cases combined with CO2 reduction targets

✓ **Security of supply**
Renewables make countries and individuals independent from energy imports

✓ **Local jobs & value creation**
Renewables create many jobs in local economies

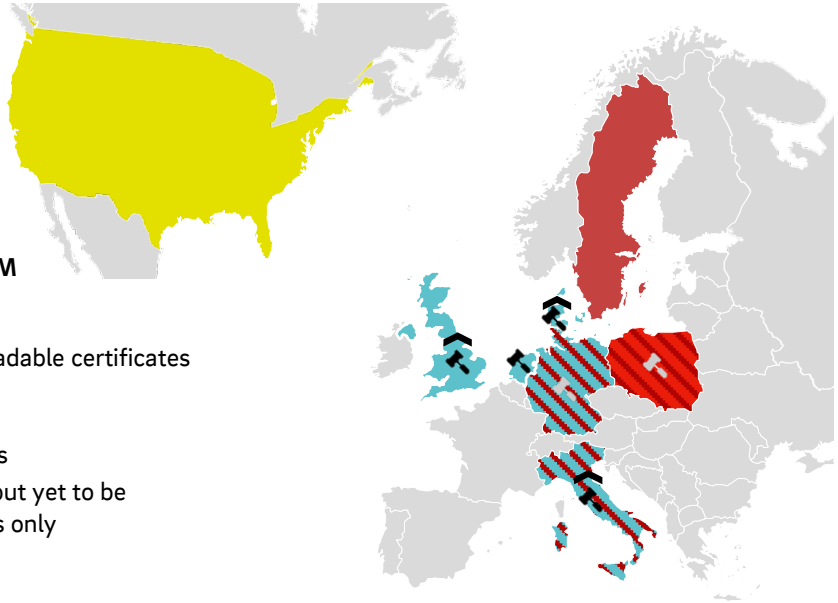
✓ **Cost reduction**
Levelized costs of electricity dropped significantly

1. Global including OECD and non-OECD countries as per BNEF definition. Excluding small-scale PV and hydro. Forecast does not reflect yet extension of PTC/ITC in the US
2. Others including geothermal, biomass and solar thermal

Source: Bloomberg New Energy Finance as of 23 June 2015

A variety of current regulatory regimes and frameworks helps support renewables in Europe and North America

Remuneration scheme by geography



PAYMENT MECHANISM
- Feed-in tariff
- Premium
- Quota obligation & tradable certificates
- Others

ALLOCATION
- Competitive auctions
- Auctions legislated but yet to be held or pilot auctions only

SUBSIDY BUDGET
- Capped

Source: Bloomberg New Energy Finance

Select market description

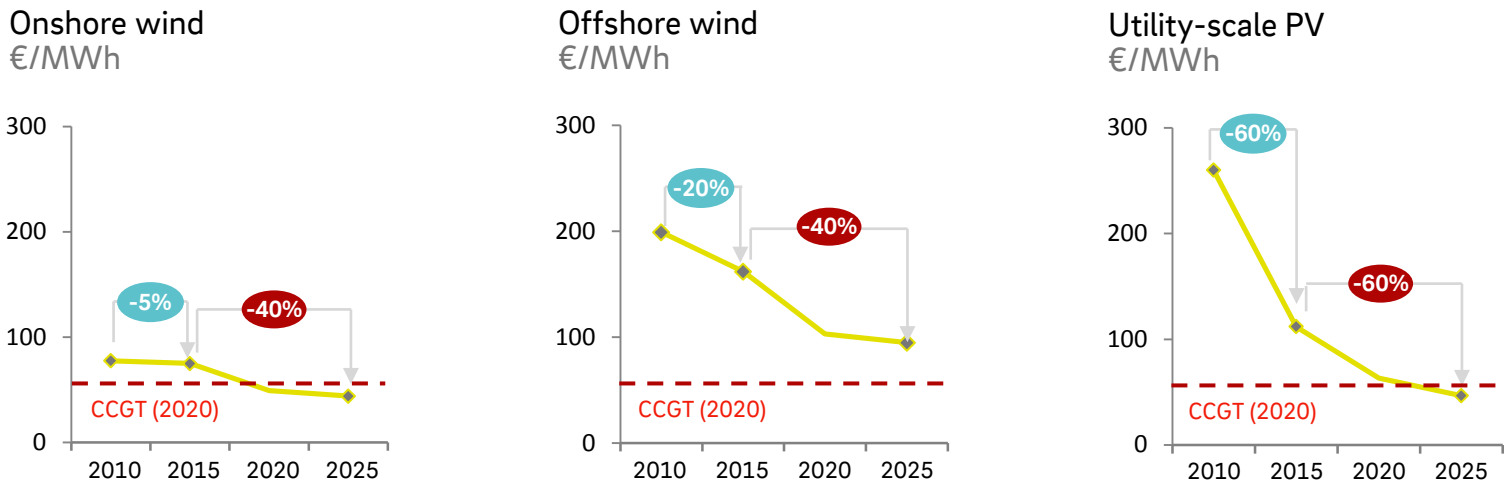
US:
- Tax Credits (PTC and ITC)
- Accelerated Depreciation (MACRS)
- Renewable Portfolio Standards (RPS)

UK:
- Renewable Obligation Certificates (ROC)
- Contracts for difference (CfD)
- Levy Exemption Certificates (LEC) have been withdrawn (Aug 2015)

Germany:
- Feed-In Tariff (FIT) with direct marketing obligation for German offshore
- For upcoming new projects remuneration will be determined through tender processes

Decreasing cost of energy makes renewables competitive in energy marketplace

Levelized cost of electricity (LCOE)[1] [2]



1. Assumed conversion rate €/$ = 1.12. Average of US and Europe. Costs are in 2016 real terms. Years on the respective horizontal chart axis represent the date of commissioning
2. LCOE degressions are rounded

Source: Bloomberg New Energy Finance as of 21 April 2017 for onshore wind & utility-scale PV, as of 23 November 2016 for offshore wind

Strategy and Focus

E.ON will focus on core technologies in Onshore, Offshore wind and PV and Storage in Europe and North America

✓ **Wind Onshore**

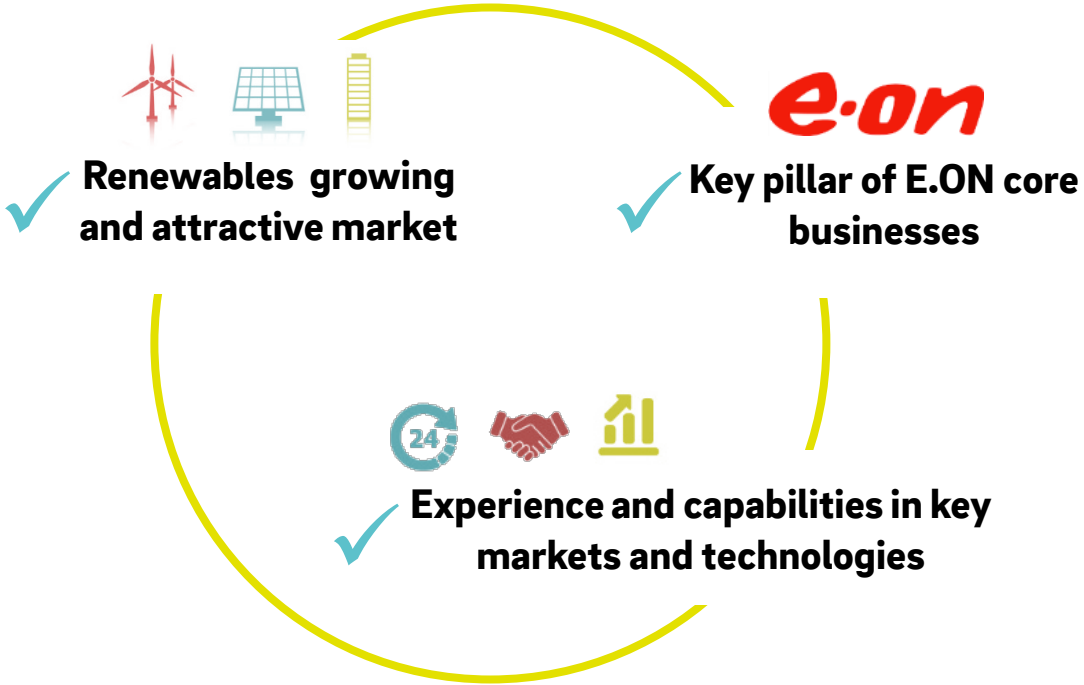
✓ **Solar PV**

✓ **Wind Offshore**

✓ **Storage**

- Continued focus on core technologies to maintain **leading position** in the industry
- Capitalize on **existing pipeline & capabilities** in North America and Europe to deliver projects
- Maintain **robust development pipeline** with superb project options
- Focus on **industrial scale assets** as **integrated player** to create value (development, construction, operations & maintenance)
- **Expand attractive** partnering and third party business **energy solutions** to our customers

Renewable business well positioned to enable E.ON to set pace in new energy world



This document may contain forward-looking statements based on current assumptions and forecasts made by E.ON Climate & Renewables management and other information currently available to E.ON. Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the company and the estimates given here. E.ON Climate & Renewables does not intend, and does not assume any liability whatsoever, to update these forward-looking statements or to conform them to future events or developments.

E.ON Climate & Renewables GmbH
Brüsseler Platz 1
45131 Essen
Germany

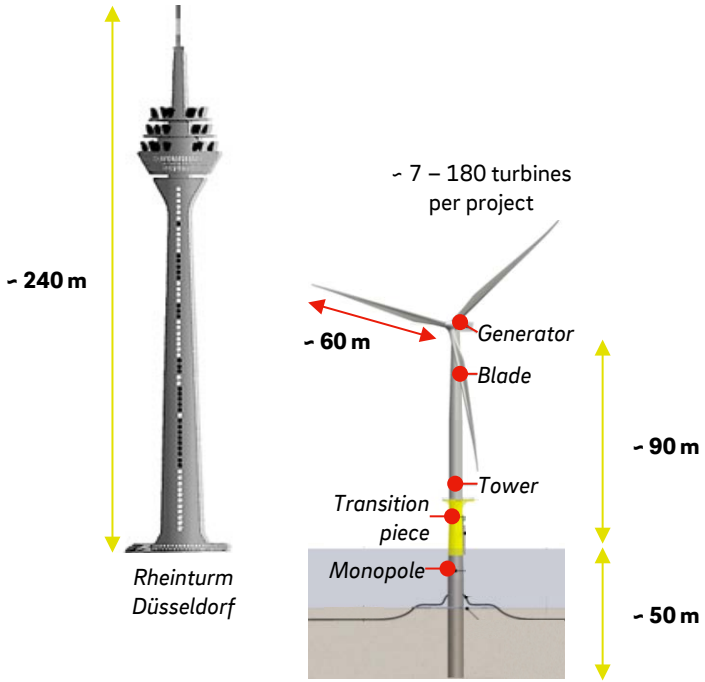
www.eon.com/renewables

Backup

Content

Deep dive offshore wind

Deep-dive Offshore Wind



Capacity	~ 200 – 600 MW	*~ 1/5 – 1/3 of a conventional power plant[1]*
Investment	~ 0.7 – 2.0 b€ CAPEX	*Comparable to a 1 GW conventional plant[2]*
Production	~ 700 – 2300 GWh p.a.	*Enough to power ~200,000 – 600,000 homes[3]*
Area	~ 20 – 60 km²	*~ 1/10 – 1/3 of the surface of Düsseldorf*
LCOE	~100 €/MWh[4] decreasing fast	-

1. Assumed average typical size of a CCGT or a Coal power plant: 1.0 GW
2. Assumed ~ 1 m€/MW for CCGT and ~ 2 m€/MW for coal (average of EMEA and AMER). Source: Bloomberg New Energy Finance
3. Assumed average household consumption of 4 MWh p.a.
4. Levelized Cost of Electricity in 2017. Indicative figures (arithmetic average of Europe, China). Assumed 0.9 € / US$

E.ON ranks as global #3 in offshore wind power companies[1]

1. The European offshore wind industry – key trends and statistics 2016, Wind Europe
2. E.ON share 30% (189 MW)
3. E.ON share 50% (200 MW)
4. E.ON share 26% (16 MW)
5. E.ON share 20% (41 MW)
6. E.ON share 50% (193 MW)

Project highlight

Amrumbank West

€1 billion investment

- 48% load factor

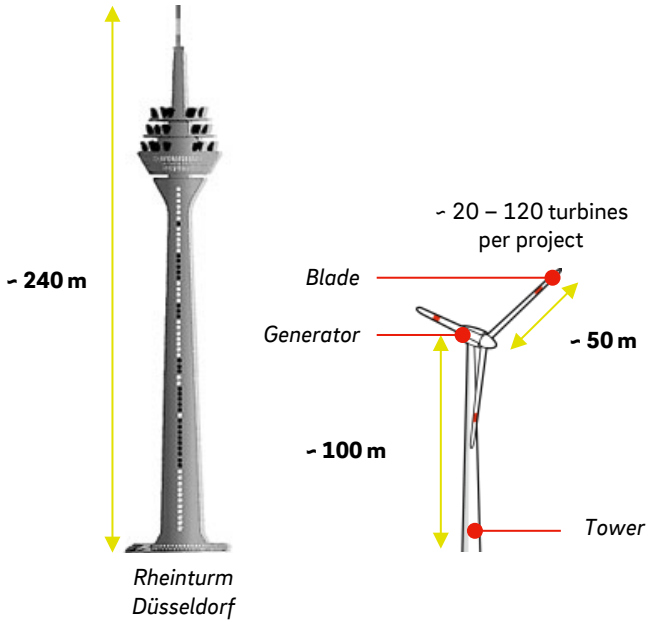
302 MW

80 Siemens 3.6 turbines

German North Sea

Deep dive onshore wind

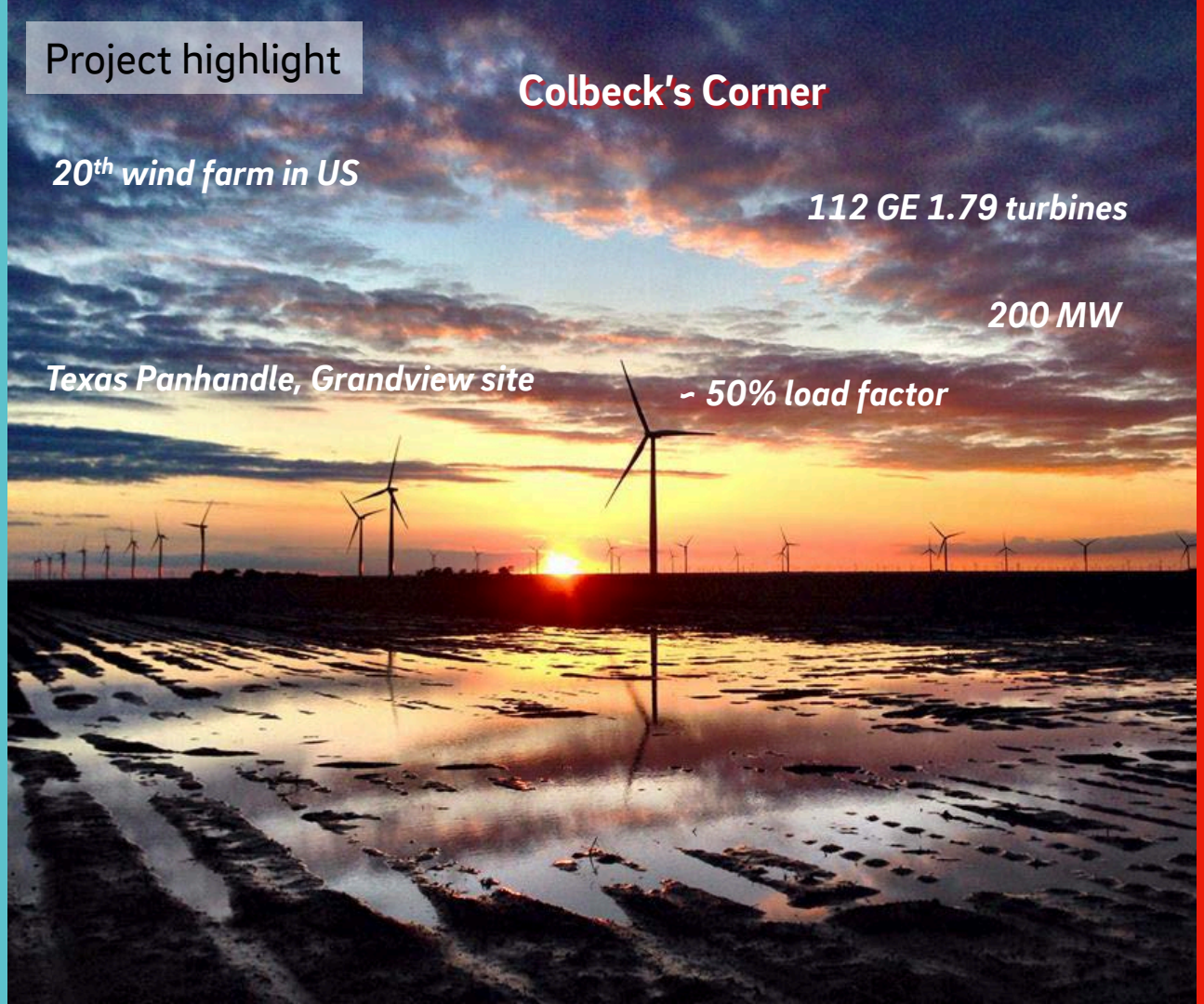
Deep-dive Onshore Wind



Capacity	~ 50 – 200 MW	*~ 1/20 – 1/5 of a conventional power plant[1]*
Investment	~ 75 – 300 m€ CAPEX	*~ 1/8 of a 1 GW conventional plant[2]*
Production	~ 150 – 750 GWh p.a.	*Enough to power ~ 40,000 – 200,000 homes[3]*
Area	~ 5 – 20 km²	*~ 1/50 – 1/10 of the surface of Düsseldorf*
LCOE	~ 65 €/MWh[4] decreasing fast	-

1. Assumed average typical size of a CCGT or a Coal power plant: 1.0 GW
2. Assumed ~ 1 m€/MW for CCGT and ~ 2 m€/MW for coal (average of EMEA and AMER). Source: Bloomberg New Energy Finance
3. Assumed average houseold consumption of 4 MWh p.a.
4. Levelized Cost of Electricity in 2017. Indicative figures (arithmetic average of Europe, US, China, India). Assumed 0.9 € / US$

Project highlight



Deep dive utility-scale PV

Deep-dive utility-scale PV

~ 50,000 to 500,000 panels per project

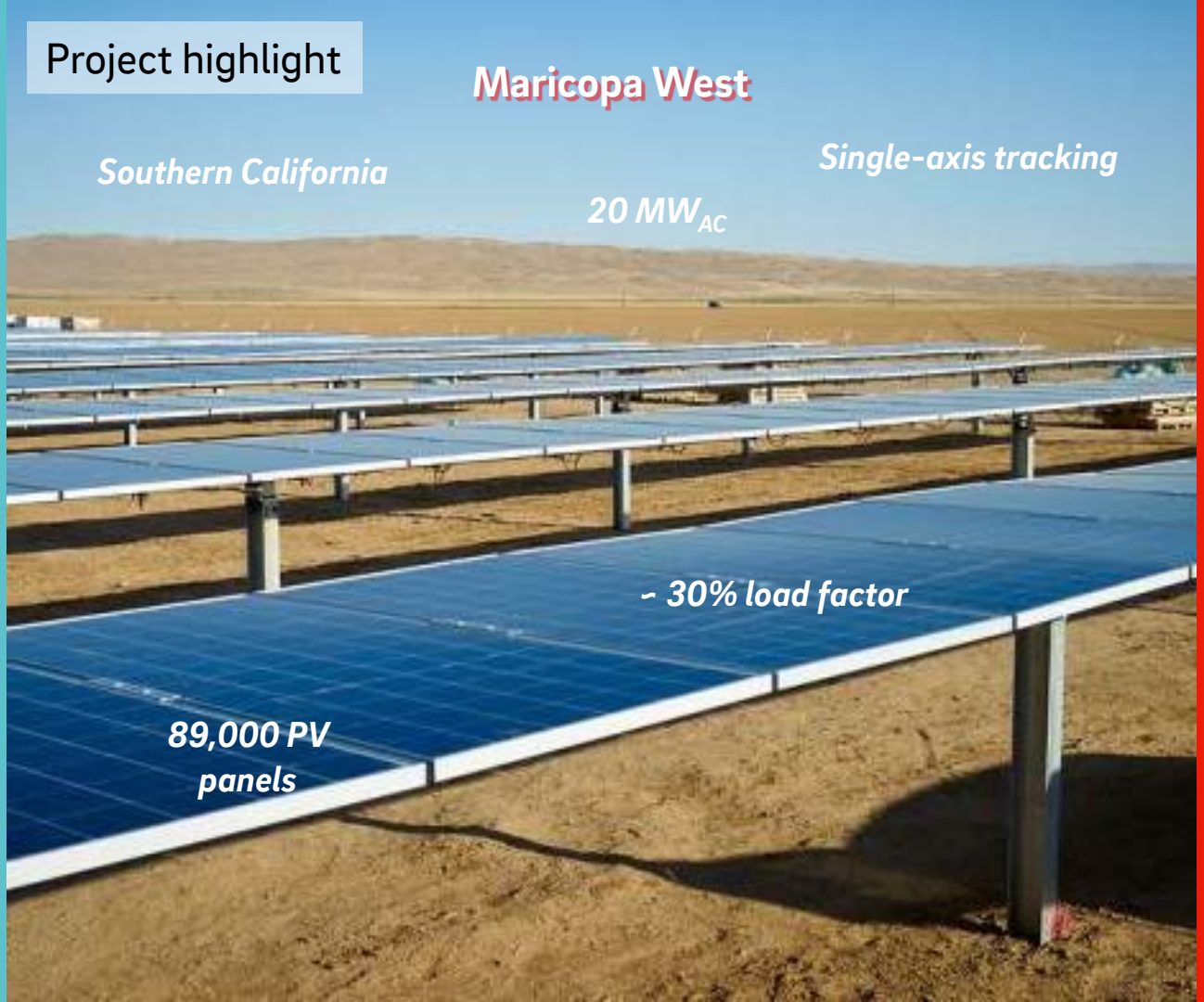
~5 MW PV farm[5]

Football field

Capacity	~ 10 – 100 MW	*~ 1/100 – 1/10 of a conventional power plant[1]*
Investment	~ 20 – 180 m€ CAPEX	*~ 1/15 of a 1 GW conventional plant[2]*
Production	~ 20 – 200 GWh p.a.	*Enough to power ~5,000 – 50,000 homes[3]*
Area	~ 0.5 – 4 km^2	*~60 – 500 football fields*
LCOE	~ 75 €/MWh[4] decreasing fast	-

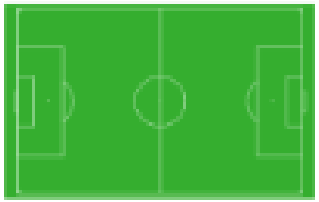
1. Assumed average typical size of a CCGT or a Coal power plant: 1.0 GW
2. Assumed ~ 1 m€/MW for CCGT and ~ 2 m€/MW for coal (average of EMEA and AMER). Source: Bloomberg New Energy Finance
3. Assumed average household consumption of 4 MWh p.a.
4. Levelized Cost of Electricity in 2017. Indicative figures (arithmetic average of Europe, US, China, India). Assumed 0.9 € / US$
5. E.ON plant at Tucson, Arizona

Project highlight



Deep dive grid energy storage

Deep-dive grid energy storage



Football field

Capacity	~ 1 – 100 MW	-
Investment	~ 1 – 100 m€ CAPEX[1]	-
Area	~ 0.001 – 0.02 square km	~ *1/7 – 3 football fields*
LCOE	~ 200 €/MWh[2] decreasing fast	-

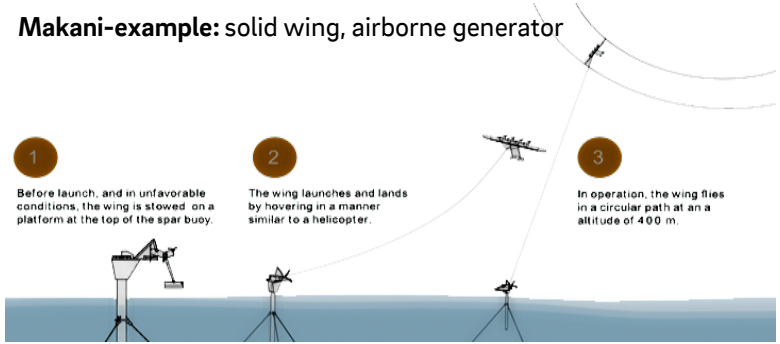
1. CapEx corresponds to a 2 hours Li-ion battery with a capacity between 1 and 100 MW and COD in 2018 (source: IHS)
2. Unsubsidized Levelized Cost of Storage based on a typical Frequency Regulation Li-Ion asset (10 MW / 5 MWh), source: Lazard

Deep dive innovation

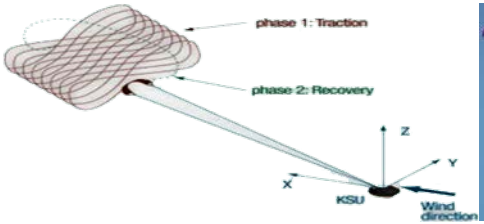
Deep-dive innovation: Airborne Wind

Fundamental approaches

Makani-example: solid wing, airborne generator



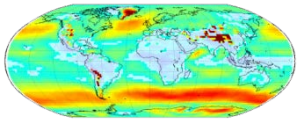
KPS-example: soft wing, ground-based generator

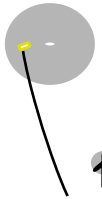


Advantages

✓ **New Markets and Sites**

Many regions have attractive wind conditions at 500 meters

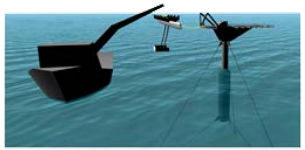




Big swept area & low energy extraction

✓ **Less Material**

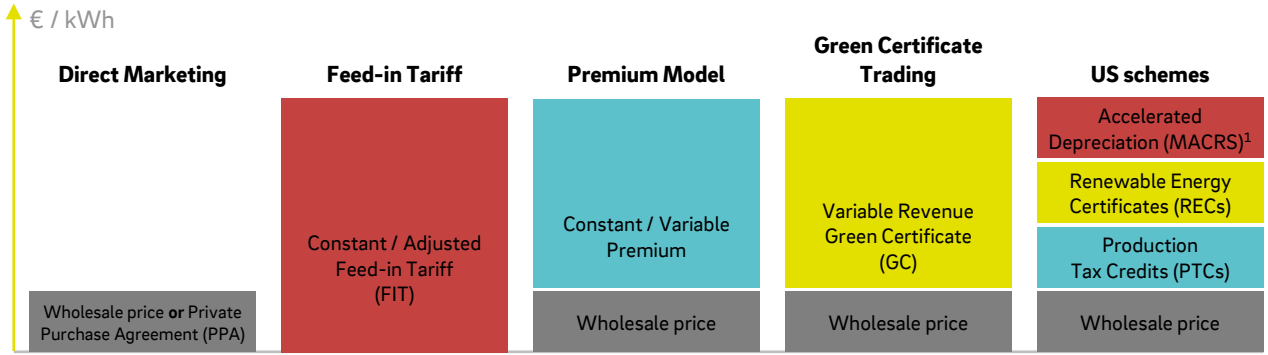
1. Moving device → smaller generating units
2. De-coupling structural load from generating unit



E.ON believes Airborne wind energy has disruptive potential

Market information

Governments use a range of support schemes to drive development of renewable generation



No support in addition to normal market price.

Production is not traded in the market, generator receives revenue from authority. Either constant over support duration or annually adjusted, e.g. by consumer price index.

Generator receives premium in addition to market price. Premium is either constant over support duration or annually adjusted depending on market price development.

Generator sells into the market and receives GCs per MWh produced (may be technology-specific). Suppliers have to fulfill increasing RES quotas, creating a GC market, where GC price is formed.

No unified support across the US. Federal support includes cash grants, tax credits, and accelerated depreciation options. In addition, state certificate systems (RECs).

In some markets support schemes are allocated via competitive auctions

1. Accelerated depreciation options for renewables assets exist in many countries, in addition to the specific support schemes

Influential stakeholders believe that Renewables are set to dominate the future energy market …

> *There is an urgent need to develop sources of renewable energy*

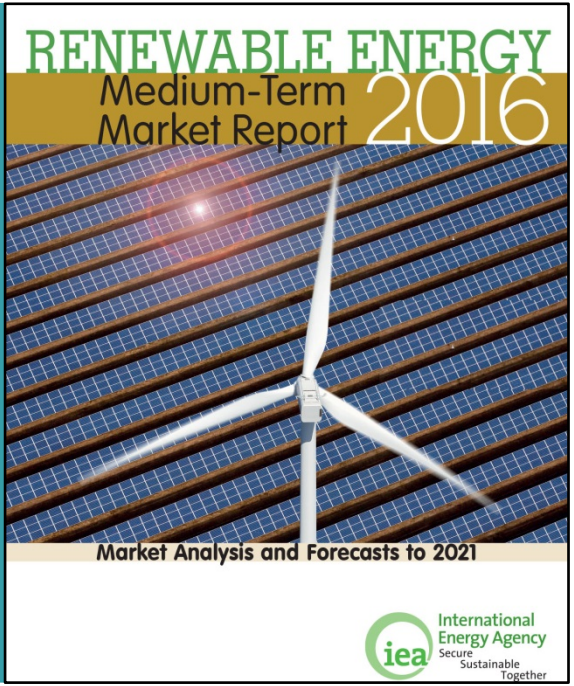
Pope Francis

Picture: Wikimedia

… and in case faith is not enough, analysis confirms Renewables are in the lead!

> *On average, world renewables output is expected to provide over 60% of total electricity generation growth during the forecast period (to 2021)*

IEA[1] Medium-Term Market Report 2016



1. International Energy Agency

Photos of assets

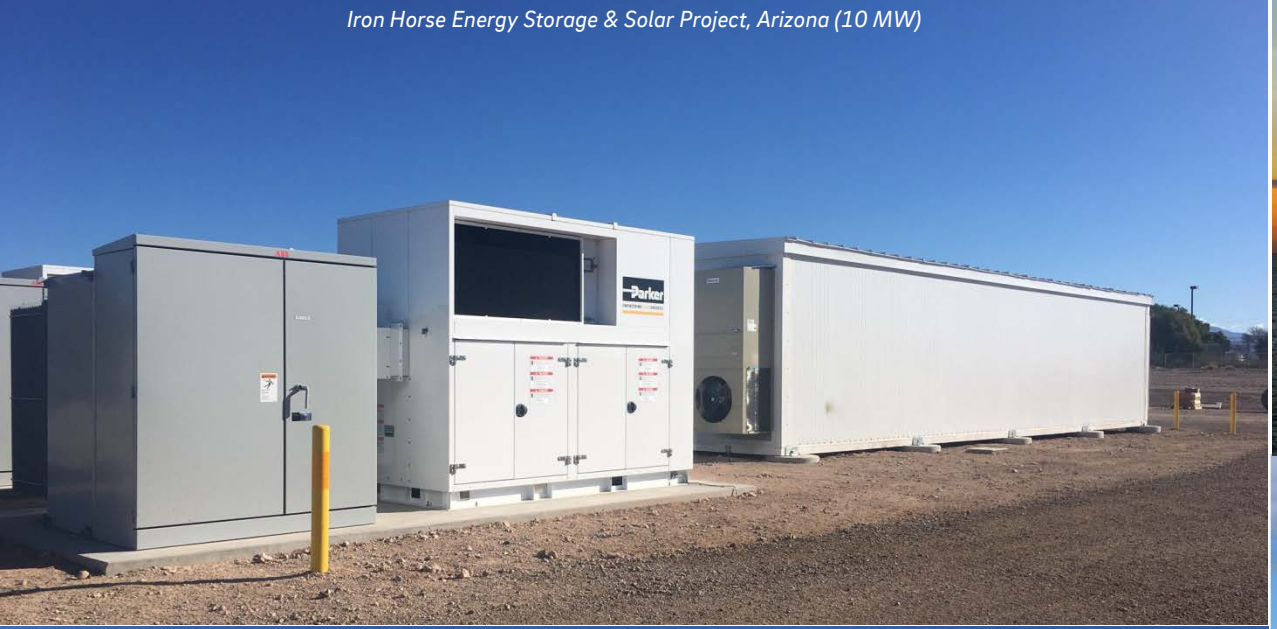
Roscoe, Texas, one of the world's largest onshore wind parks (782 MW) – half the size of New York City

Valencia Solar PV Park, Arizona (10 MW)

Amrumbank West, Germany (301 MW)

London Array, the world's largest offshore wind farm (630 MW)

Grandview I, Texas, (211 MW)



Iron Horse Energy Storage & Solar Project, Arizona (10 MW)

2 MW Solar PV accompanying array at Iron Horse Energy Storage & Solar Park, Arizona (10 MW)

Humber Gateway, UK (219 MW)

Camster, UK (50 MW)

Colbeck's Corner, Texas, E.ON's 20th wind farm in NA (200 MW)