
FREE
ELECTRONS

Innovation Overview and Advanced Technology Focus Areas

Chris Johnson, Managing Director
Enterprise Innovation and Technology
(cdjohnson@aep.com)

AEP IS GLOBALLY LOOKING FOR NEW TECHNOLOGIES AND BUSINESS MODELS IN THREE PRIMARY AREAS DEPLOYABLE IN 2-5 YEARS INTO THE FUTURE

Nick Akins, Chairman, President and CEO:

"I am confident in our ability to transform our industry for the benefit of the communities we serve. AEP is globally searching for, and validating innovative, advanced technologies, especially to integrate into the distribution grid of the future, for all of our customers and for our operations. Our electrification activities need to improve the lives of all members of society."

AMERICAN ELECTRIC POWER

EXAMPLES OF AEP'S AREAS OF INTEREST IN TRANSFORMATIONAL TECHNOLOGIES AND BUSINESS MODELS READY TO DEPLOY ON A MID-TERM TIME HORIZON

CLEAN ENERGY PATHFINDING

- **Going green without going dark**
- **Universal access for all citizens**
- **Clean energy software**
- **Hydrogen fuel storage**
- **Mitigating weather-related impacts**
- **Long duration energy storage**
- **Does not include large scale renewables and behind the meter technologies**

EXAMPLES OF AEP'S AREAS CONTINUED...

DISTRIBUTED ENERGY FUTURE

- **Distributed generation**
- **Solar plus storage**
- **BTM solutions**
- **MG to CHPs**
- **Renewable natural gas**
- **DER Grid management**

ADVANCED DATA PLATFORMS

- **Advanced data innovation**
- **Data value chain**
- **Transactive platforms**
- **Customer privacy blockchain**
- **Customer needs identification**

START-UP PITCH DECK QUESTIONS TO ANSWER ABOUT YOUR TECHNOLOGY

1. What is the challenge your technology can solve for AEP?
2. What is the solution that your technology provides?
3. Describe a pilot with the minimum, fastest to complete activities that would demonstrate its benefits to AEP and its customers
4. What would you need from AEP to have a successful pilot?
5. What would be the approximate cost of your pilot?
6. What would be the milestones and duration of your pilot?

AMERICAN ELECTRIC POWER

AusNet services

FREE ELECTRONS 2020

Introduction to AusNet Services for start-ups

OUR BRANDS

AusNet services

Owns, operates and controls energy delivery infrastructure for 6.5 million Victorians.

Recognised as national leaders in efficiency and innovation.

mondo®

Energy and infrastructure services for businesses, government, and communities.

Development and deployment of world leading solutions, connecting you to the new energy future.

Mondo is a commercial, unregulated subsidiary of AusNet Services.

WE ARE LOOKING FOR

Ideas, products and solutions that help drive digital transformation.

New ways of operating that improve performance and quality of service for our customers, employees, suppliers and partners.

WE ARE INTERESTED IN

Improving Safety
For our people and our customers

Distributed Energy Resources
SME and Industrial DER, Microgrid, Grid integration of DER, Network Demand & DER Generation forecasting, DER marketplace

Demand Response & Demand Management
Energy Aggregation & Orchestration

Data Driven Intelligence / Insights
Using smart meter and asset data for Risk based and predictive maintenance, Predictive outage management, Network modeling, HV/LV modeling & Spatial analytics

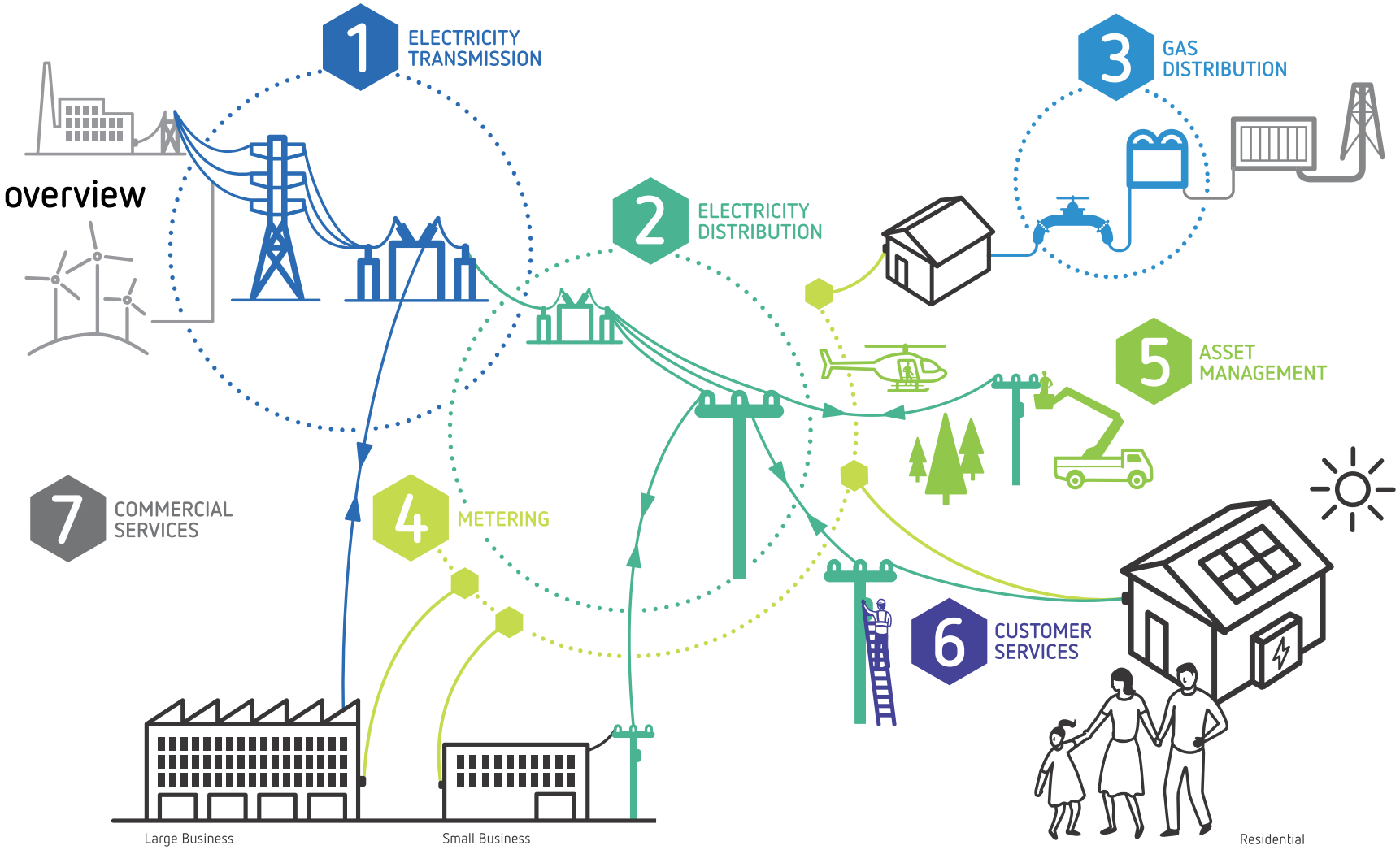
Digital Asset Models
Using satellite remote sensing data, aerial/mobile LiDAR and image data for Automated defect identification, Predictive vegetation growth & Digital 3D design and modelling

Enhanced Customer & Employee experience
Improving our end to end service provision for our customers.

Cyber Security

Something Amazing
An application in an area of interest or a new or disruptive business model that we can't go past - feel free to convince us

Who we are and what we do



1 ELECTRICITY TRANSMISSION

Moves electricity long distances from multiple generation sources at high voltages along transmission powerlines and towers into the distribution network.

2 ELECTRICITY DISTRIBUTION

Converts and delivers electricity at lower voltages into homes and businesses.

3 GAS DISTRIBUTION

Converts gas from high to lower pressures for delivery into homes and businesses.

4 METERING

Collecting and analysing consumption data for billing and network operation purposes.

5 ASSET MANAGEMENT

The inspection and maintenance/ enhancement of gas and electricity assets, including vegetation management.

6 CUSTOMER SERVICES

Supporting our customers to enhance their electricity and gas network experience.

7 COMMERCIAL SERVICES

Providing infrastructure assets and services, and energy solutions to commercial customers.

WHY US

Working with us will give you access to

Electricity distribution

50,000km+
network

700,000+
Customers

100% Smart Meters
homes and businesses

Electricity transmission

6,000km+
transmission lines

13,000+
transmission towers

Gas distribution

11,000km
of network

600,000+
Customers

Come and work with us down under

Collaborate to Innovate:
Shaping the Energy Landscape of Tomorrow

CLP

We want to work with you!

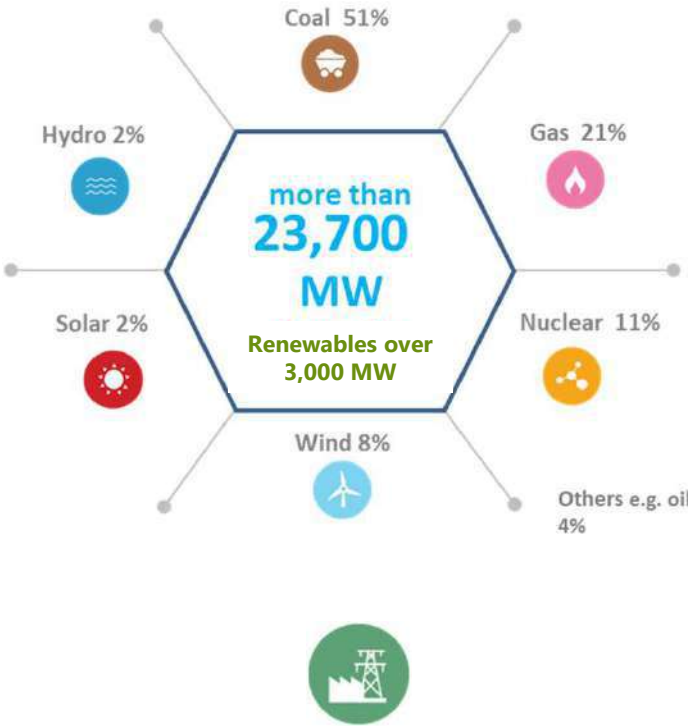
CLP is a leading utility in APAC

APAC operations

Revenue in 2018

~US$ 12 billion

Generation and Transmission



Over 15,800 km transmission lines

Retailer and Services

Over 5.1 million Customers

EV charging network

Smart Energy Connect

Smart Energy Services

Smart CITY and GRID

CLP Businesses in APAC

CLP Power Hong Kong

Generation

Transmission & Distribution

Over 2.6 million customers

New Energy Services

CLP*e* Solutions

- Power engineering
- Infrastructure
- Facilities management
- Consulting
- Smart energy services
- DER

Smart Energy Connect powered by CLP

Platform that offers digital energy management solutions to save energy, money and time:

- Sustainability
- Energy cost saving
- Wellness
- Security
- Connectivity
- Productivity

Smart Charge™ by HKT and CLP

EV charging infrastructure

CLP Businesses in APAC

Mainland China

Generation: One of the largest external independent power producers with a focus on clean and low-carbon energy, including nuclear and renewables

Developer of Incremental Distribution Networks (IDN) and energy services

India

Generation: Operate broad generation portfolio covering coal, gas and wind and solar energy.
CLP is one of the largest foreign players in the Indian power industry

Southeast Asia and Taiwan

Generation: Investments in a solar project in Thailand and a coal-based generation plant in Taiwan

Australia

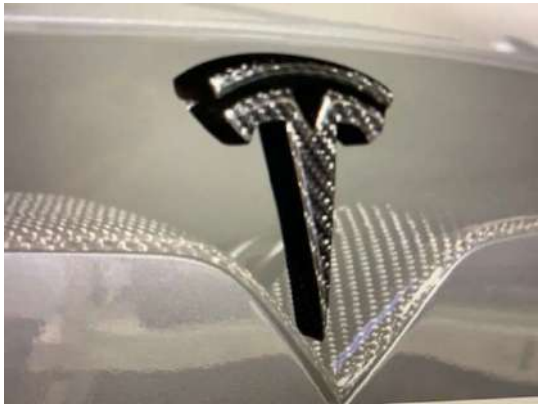
Gentailer: Provide gas and electricity to 2.50 customer accounts and owns & operates a portfolio of generation assets, including coal, gas, wind power and battery storage

Energy Solutions: CLP is actively offering innovative energy solutions focused on ***C&I and industrial parks,*** including:

- Microgrid solutions
- PPA
- EV charging
- Battery
- DER
- Smart Energy Services

Why does CLP work with Start-ups?

To provide new *digital*, *connected*, *smart* and *low carbon* products and services to our customers and *prepare* our assets for the future.



From producing electricity to offering customer centric energy related services.
Energy is one of the last industries to be disrupted

Digitalisation
Decarbonisation
Decentralisation
Democratisation
Electrification

Competition from disruptive players and convergence of industries

Why Work With CLP?

Revenues → Route to Market within CLP and to our Customers:
Access to APAC Markets, 5 mln+ customers, World class brand

Domain and Marketing Expertise:
We have 118 years of experience and a Diverse Portfolio for you to test solutions

We really make it easy to work with us:
Simple agreement and a process to quickly pilot & deploy your solution

We have outstanding People:
Diverse range of skills, all committed to the future of energy

What are we looking for?

Customer Solutions

Our customers need solutions that increase **insights, efficiency, sustainability, connectivity, safety, wellbeing** and **productivity.** We are in the process of rolling out smart meters to all our Hong Kong customers.

- Smart Home and Solutions using Smart Meter data
- Smart Office – comfort, services offerings
- Smart Buildings – retro-commissioning, energy effiency, BEMS
- Facility Management – productivity
- Green Energy - PPA

Distributed Generation and Demand

Flexible generation and demand are playing a large role in the future of the grid.

- Integration of customer solutions with grid solutions
- Demand management solutions

Smart City Solutions

Industries are converging and CLP as infrastructure provider has an important role in the city of the future. How can you help our citizens and public services.

- Data optimization and sharing tools
- Energy sharing platforms
- Data centre solutions
- Public lighting, safety, transport, healthcare, education

Smart Grid and Distribution

The future of networks is connected and decentralized. We are preparing our grid and offering microgrid solutions to end customers

- Microgrid solutions for HK, China, Thailand and India
- Distributed Energy Resources
- Demand Management for Hong Kong
- Integration of renewables
- Future proofing of grid operations and business model

Transportation and Mobility

The number of EV's is increasing and hence creating an impact on CLPs grid in Hong Kong. CLP also owns a charging network

- EV solutions for grid operator
- EV Charging platform
- Fleet management (busses, trucks, taxis etc)

Operational efficiency

Improving the resource allocation of our current operations.

- Wind farm analytics – fault predictions & (price) forecasting
- Predictive maintenance for critical assets in our infrastructure
- Increase insights in our customer base

Moonshot Ideas

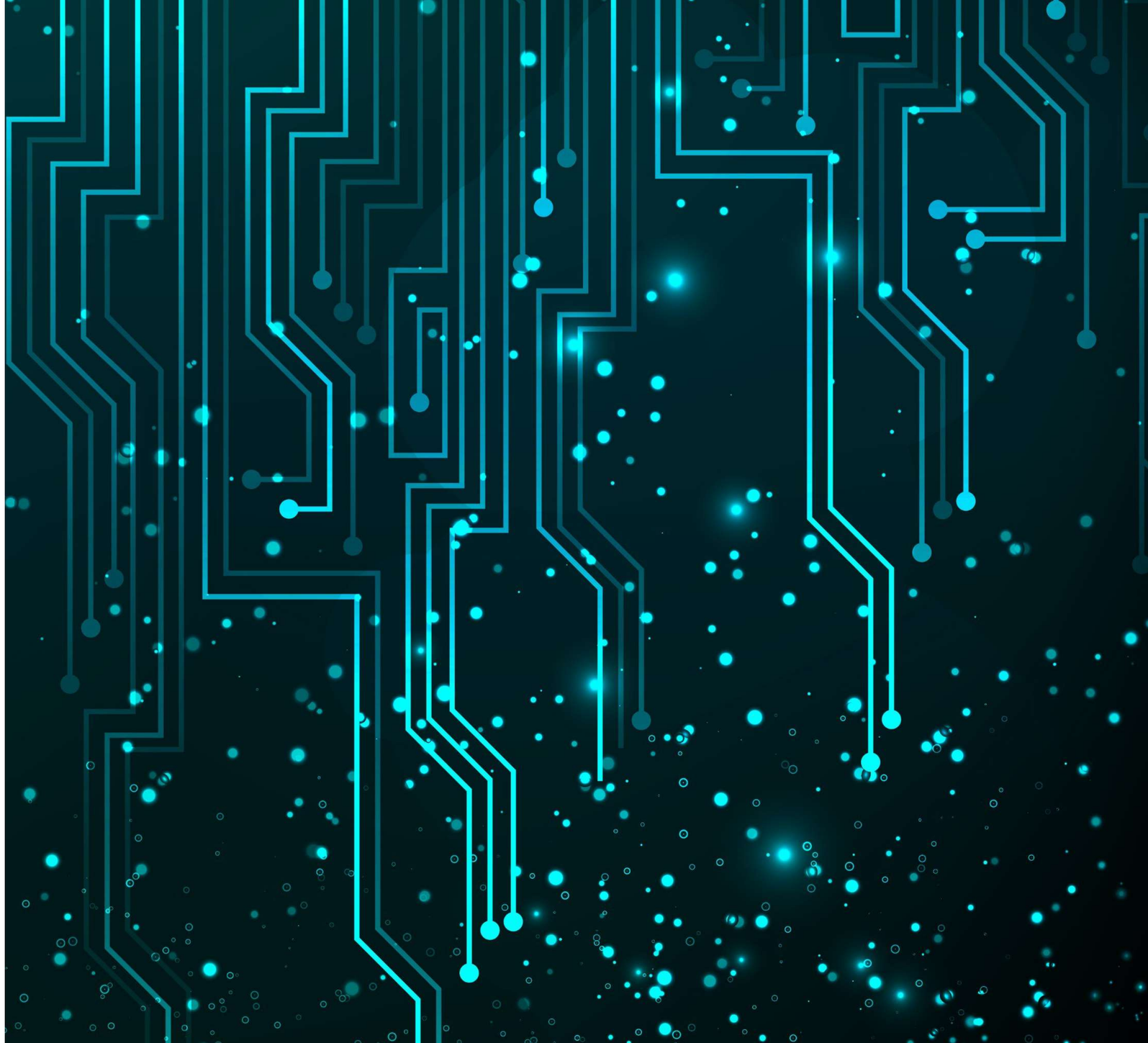
Surprise and convince us! How can we not have thought about this and why should CLP do this! We are all ears!

DEWA

Dubai Electricity & Water Authority

هيئة كهرباء ومياه دبي

Dubai Electricity & Water Authority



SUPPORT FROM OUR LEADER

H.H Sheikh Mohammed bin Rashid Al Maktoum Directed the Nation to Focus on Innovation at a Global Level and Become One of the Most Innovative Nation

“The UAE is already the most innovative Arab nation. Our target is to be amongst the most innovative nations in the world”

His Highness Sheikh Mohammed bin Rashid Al Maktoum

Vice President ad Prime Minister of the UAE and ruler of Dubai

SUPPORT FROM MD&CEO OF DEWA

H.E. opened the doors for all DEWA employees to use their innovative minds to lead DEWA toward it's vision

"The stage is yours to prove your capabilities, improve your skills and enhance your knowledge to help DEWA consolidate it's leadership at the global level. You can achieve this in the highly motivating environment that DEWA provides to encourage innovation and success, so that excellence becomes a lifestyle and a way of thinking"

His Excellency Saeed Al Tayer

MD&CEO of DEWA

DEWA's Vision

A Globally Leading Sustainable Innovative Corporation

DEWA AREAs of FOCUS

DEWA is aligned with many Agendas, Strategies, Government Plans and Visions of Our Great Leaders

To be a Digital Utility and Lead the Way of Digital Transformation

Global Innovation Index

UAE Artificial Intelligence Strategy Vision 2031

Dubai Model for Government Services

UN Sustainability Development Goals

UAE Science, Technology & Innovation Policy

SMART Dubai 2021 Strategy

Dubai Clean Energy Strategy

UAE National Innovation Strategy (NIS)

Dubai Government Excellence

Dubai Innovation Strategy

UAE Vision 2021 & National Agenda

Future National Vision

Dubai Happiness Agenda

Dubai Integrated Energy Strategy

UAE Government Innovation Framework

Dubai Future Foundation

Dubai Plan 2021

Global Focus

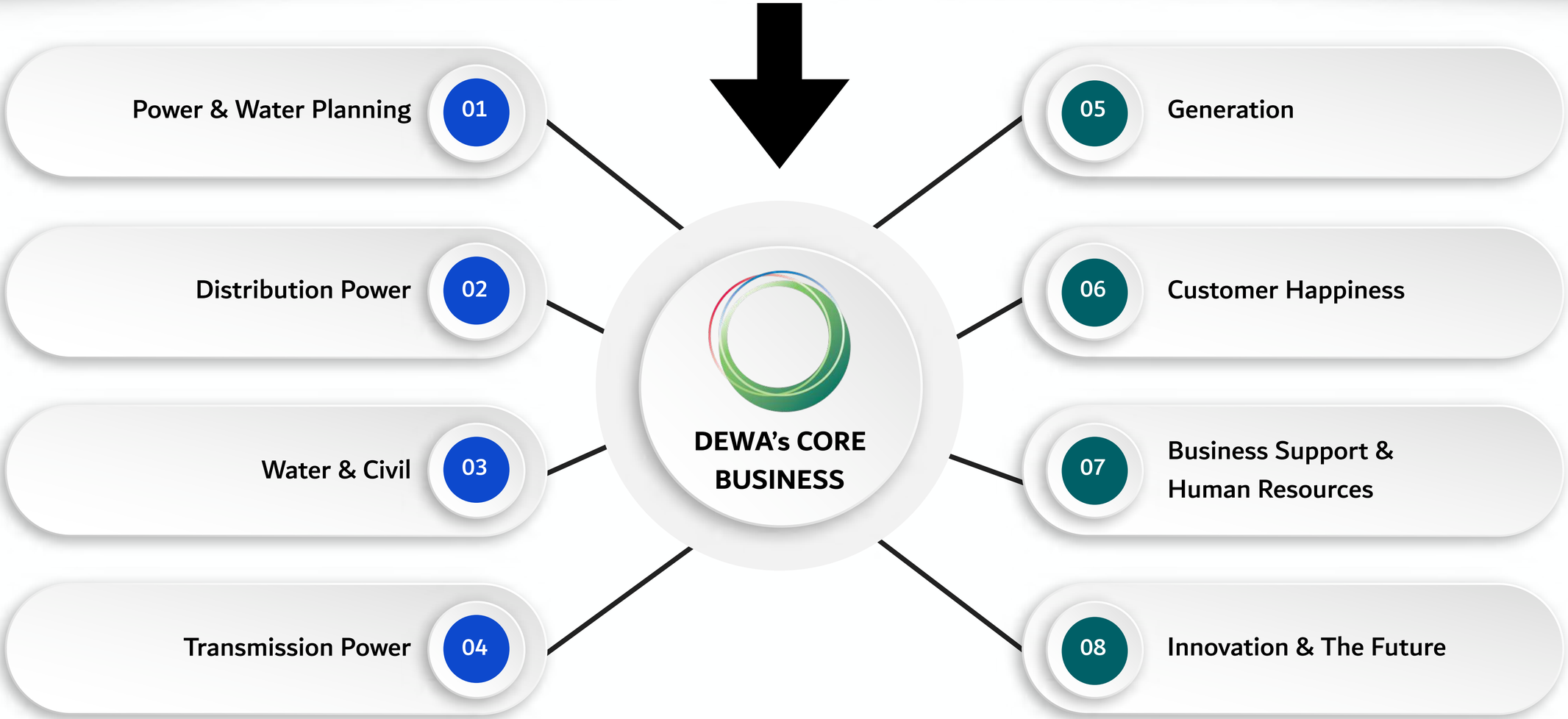
UAE Focus

Dubai Focus

SOLUTION REQUIREMENTs

FREE ELECTRONS: THE GLOBAL ENERGY ACCELERATOR

“Accelerate digital transformation in the energy industry through disruptive technologies that are not limited to Quantum Computing, and can include Artificial Intelligence (AI), Blockchain, Automation, Robotic Process Automation (RPA), Internet of Things (IoT), Augmented Reality and others”

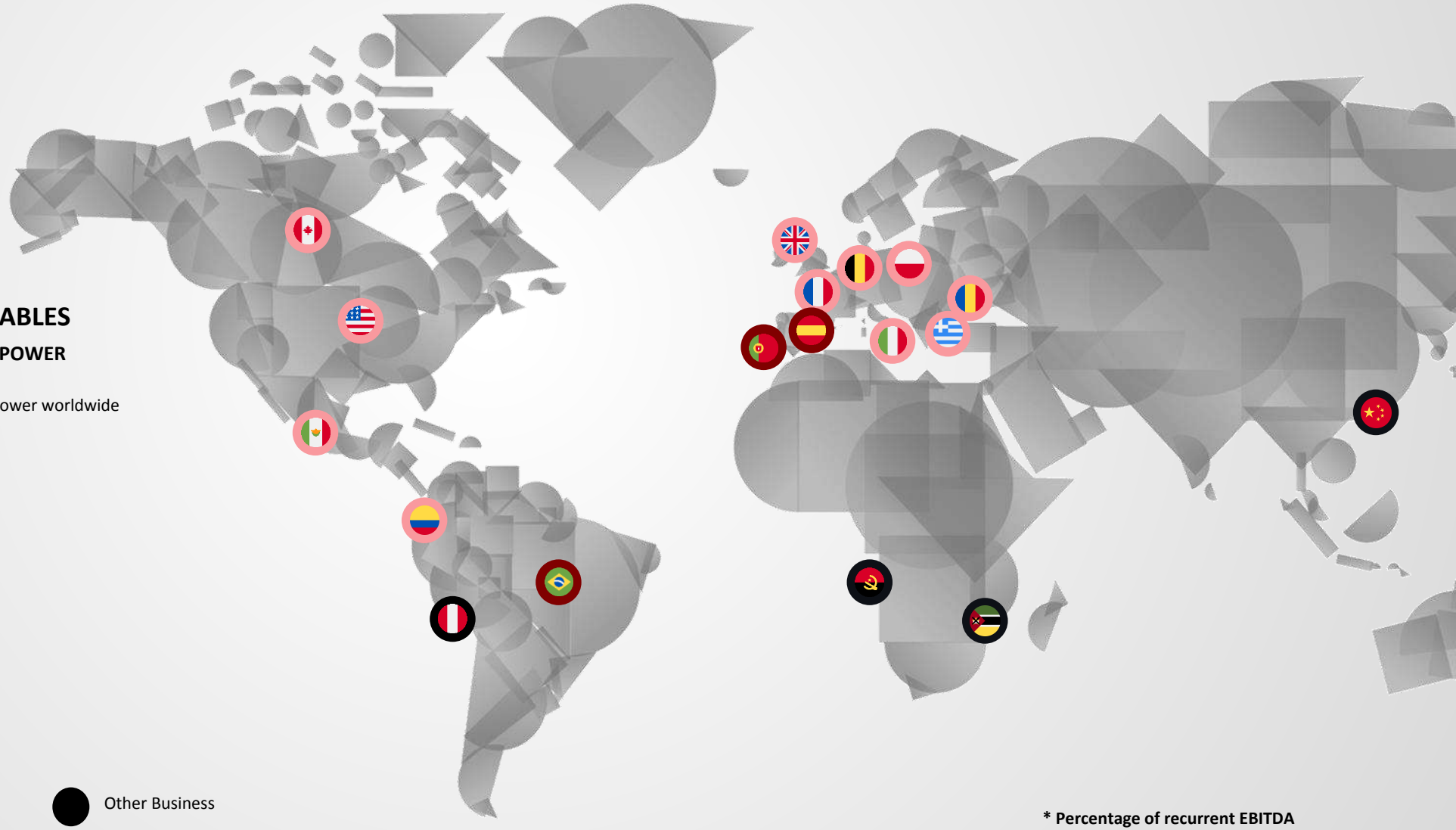


DIGITAL TRANSFORMATION IN DEWA

EDP Innovation

EDP GROUP OVERVIEW

CONSOLIDATED 2018
Clients: ~11Mn
EBITDA: € 3.3 Bn
Generation cap: 27.1GW



EDP PORTUGAL

32% of EBITDA*
#1 Producer, distributor and trader in Portugal

EDP RENEWABLES

WIND & SOLAR POWER
39% of EBITDA*
#4 player in wind power worldwide

EDP BRAZIL

20% of EBITDA*
#4 private wholesale market player
#5 private power generation

EDP SPAIN

9% of EBITDA*
2 in gas retail

Gen., Dist., Retail + Renewables

Renewables

Other Business

*** Percentage of recurrent EBITDA**

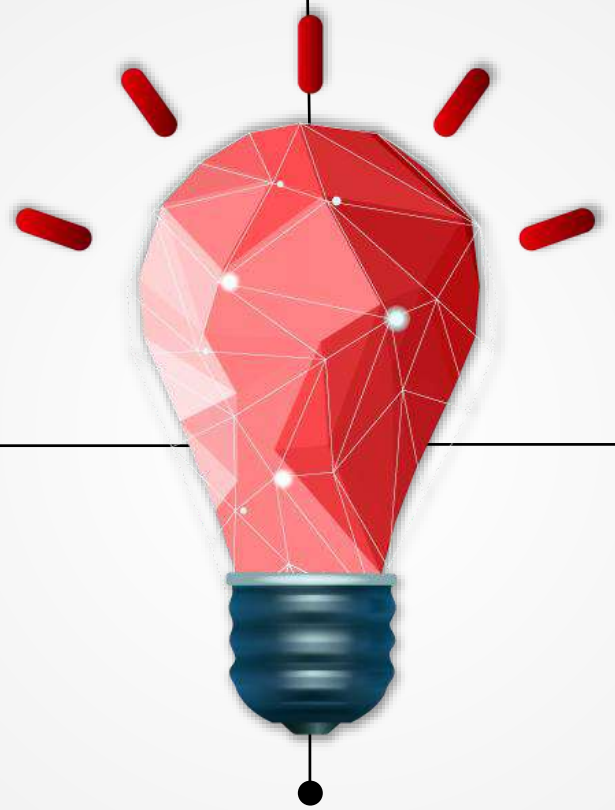
EDP INNOVATION PRIORITIES

SMARTER GRIDS

- Smart Grids Infrastructure
- Energy Distribution Management
- Demand Response
- Energy Aggregation
- Micro-Grids

CLEANER ENERGY

- Centralized Renewable Energy
- Assets Monitoring and Sensing
- Preventive / Predictive analytics
- O&M



CLIENT-FOCUSED SOLUTIONS

- Energy Efficiency
- Mobility
- Connected/Smart Homes
- Distributed Solar
- New services / new offers

DATA LEAP / DIGITAL

- Big Data and Advanced Analytics
- IoT
- Cybersecurity
- Artificial Intelligence
- Augmented Reality
- Blockchain
- Quantum Computing

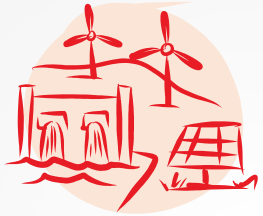
STORAGE AND FLEXIBILITY

- Flexibility and aggregation for demand response
- Preventive / Predictive analytics for energy storage technologies
- Storage behind-the-meter
- Utility-scale storage

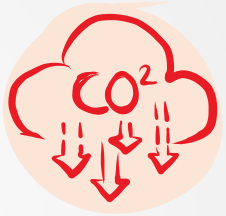
OUR 2030 VISION

Leading the energy transition to create superior value

- **Decarbonization**
- **Digitalization**
- **Decentralization**

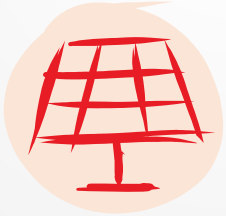


>90% renewables generation



Reduce 90% specific **emissions** (vs 2005 levels)

Become **coal-free**



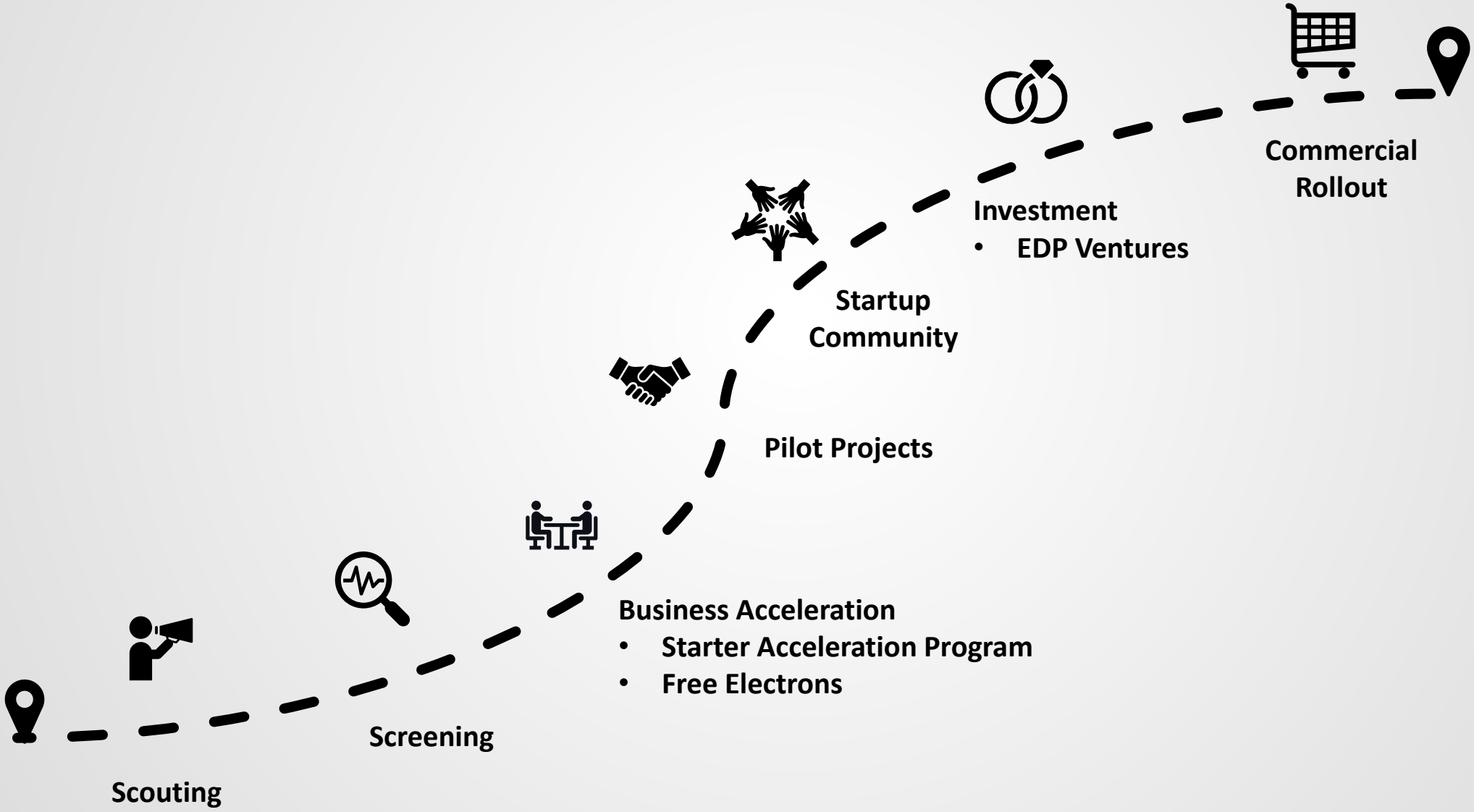
>4 Mn decentralized solar PV panels installed

>1 Mn clients with e-mobility solutions

100% smart grids (in Iberia)

EDP's STARTUP ROUTE

How we work with startups



Facts & Figures

Edition 2020

e·on

Content

E.ON at a glance

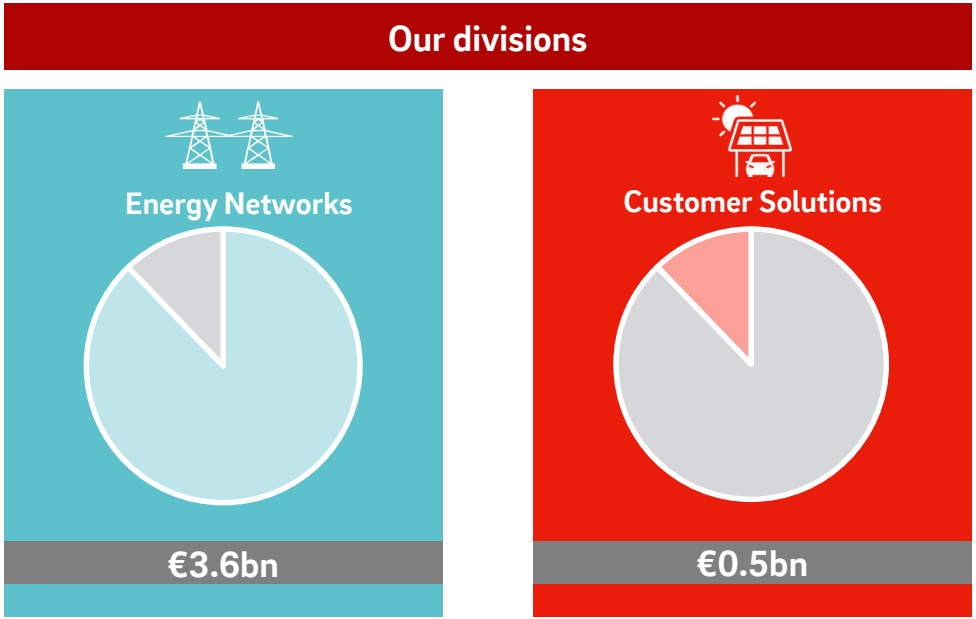
Group EBIT[1,2]
€ bn

4.1

Adj. Net Income[1,2]
€ bn

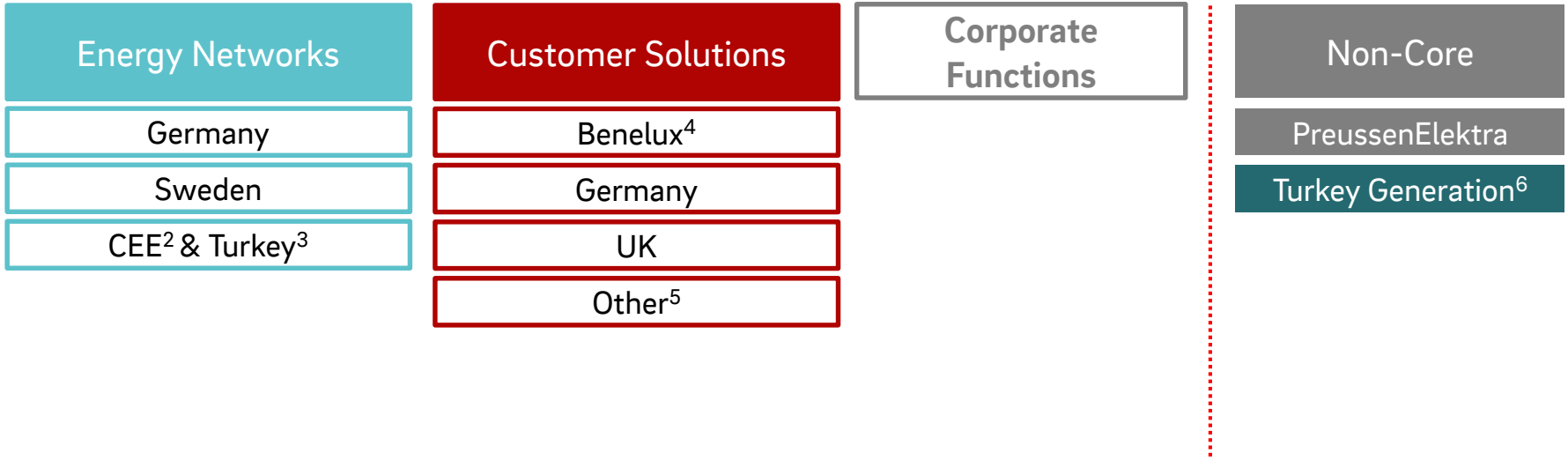
1.6

Core EBIT[1] 2019[2]



1. Adjusted for non operating effects.
2. Pro forma.

E.ON is divided into two main businesses[1]



1. Segmentation from 2020 onwards.
2. Central and Eastern Europe, including Czech Republic, Hungary, Poland, Romania, Slovakia, Croatia.
3. Networks business (Enerjisa Enerji).
4. Belgium, The Netherlands and Luxemburg.
5. Including Czech Republic, Hungary, Italy, Poland, Romania, Sweden, Slovakia, Slovenia and Croatia.
6. Generation business (Enerjisa Üretim).

E.ON's two core businesses

Energy Networks

- **€33bn Regulated Asset Base[1]**
  Germany €21.9bn
  Sweden €3.8bn
  CEE[2] & Turkey[3] €7.6bn

- **74 GW Renewables capacity connected to E.ON networks**

- **3.0m Smart Meters rolled out in our grid areas**
  In total more than 17m Smart Meters to be rolled out until 2032

Customer Solutions

- **51m[4] customers across Europe**
  Germany 13.8m
  UK 9.6m
  Other EU 16.9m[5]

- **30% of adj. EBIT[6] from decentral energy infrastructure**
  Resilience from long-term customer relations built on satisfaction and trust

Market leading position with 4x Top 1 and 6x Top 3 positions

1. Regulated Asset Base (RAB) is the value of all distribution assets determined by the regulator. In general, RABs from different regulatory regimes are not directly comparable due to significant methodical differences. These include for example different regulatory asset lifetimes, asset valuation methods or treatment of customer contributions for network connections.
2. 100% view for Slovakia.
3. 100% view for Turkey.
4. Including Turkey.
5. Other including Benelux, Sweden, Romania, Hungary, Czech Republic, Poland, Slovakia, Italy, Slovenia and Croatia.
6. Adjusted for non operating effects.

E.ON's Board of Management

Dr. Johannes Teyssen
Chief Executive Officer

- Strategy & Innovation
- Human Resources
- Communications & Political Affairs
- Legal & Compliance
- Corporate Audit
- Sustainability & HSE
- Culture and Performance

Dr. Marc Spieker
Chief Financial Officer

- Finance
- Investor Relations
- Mergers & Acquisitions and Participation Management
- Risk, Accounting & Controlling
- Tax
- S4 Transformation

Dr.-Ing. Leonhard Birnbaum
Chief Operating Officer Integration

- innogy integration
- Consulting
- PreussenElektra

Dr. Thomas König
Chief Operating Officer – Networks

- Energy Networks
- Procurement
- Turkey

Dr. Karsten Wildberger
Chief Operating Officer – Commercial

- Customer Solutions
- Decentralized Generation
- Energy Management
- Marketing
- Digital Technology





E.ON Supervisory Board
Shareholder representatives

Dr. Karl-Ludwig Kley
Chairman of the Supervisory Board
Born 1951, German
Member since 2016
Extensive leadership and supervisory board experience

Erich Clementi
Deputy Chairman
Born 1958, Italian
Member since 2016
Expert in digital transformation and strategy

Klaus Fröhlich
Born 1960, German
Member since 2018
Expert in brand and product strategies and digitization; particular focus on e-mobility

Ulrich Grillo
Born 1959, German
Member since 2019
Excellent network in German industry as well as management and strategy expertise

Carolina Dybeck Happe
Born 1972, Swedish
Member since 2016
Profound experience in finance and digital transformation of products and services

Andreas Schmitz
Born 1960, German
Member since 2016
Particular expertise in financial analysis and capital markets

Dr. Rolf Martin Schmitz
Born 1957, German
Member since 2019
Extensive management and strategy expertise paired with technical knowledge

Dr. Karen de Segundo
Born 1946, Dutch
Member since 2008
In-depth knowledge of energy market and regulated industries experience

Deborah Wilkens
Born 1971, United States of America
Member since 2019
Proven capital market expert specialized in the energy sector

Ewald Woste
Born 1960, German
Member since 2016
Extensive expertise in the energy sector, ESG expert

E.ON Supervisory Board
Employee representatives

Andreas Scheidt
Deputy Chairman of the Supervisory Board
Born 1964, German
Member since 2015
In-depth knowledge of the energy business

Eugen Gheorghe Luha
Born 1957, Romanian
Member since 2012
Profound expertise in the gas business

Szilvia Pinczésné Márton
Born 1969, Hungarian
Member since 2018
In-depth knowledge of the network business and co-determination matters

Stefan May
Born 1970, German
Member since 2019
Technical expertise as well as extensive knowledge in co-determination

Monika Krebber
Born 1962, German
Member since 2019
Profound knowledge of business administration and supervisory board experience

René Pöhls
Born 1970, German
Member since 2019
Expert in network operation, HR and experience in co-determination

Christoph Schmitz
Born 1965, German
Member since 2020
Expert in press and public relations

Fred Schulz
Born 1962, German
Member since 2014
Experience in grid operations and HR management

Elisabeth Wallbaum
Born 1975, German
Member since 2016
Expertise in Energy generation and IT-based process control

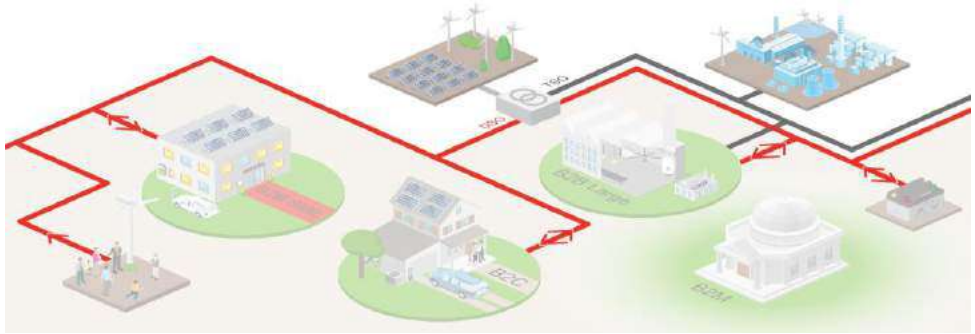
Albert Zettl
Born 1966, German
Member since 2016
Background in the fields of grid management, grid distribution

Content

Energy Networks at a glance

What we do

- Within Energy Networks we provide the infrastructure for the new energy world. We manage our grids from high to low voltage in a smart way, to promote a growing connection of renewable capacity.
- Power and gas distribution is predominantly a regulated business in our countries of operation.
- We have a strong network presence in power and gas in our core markets.
- About 39.400 employees work in Energy Networks.

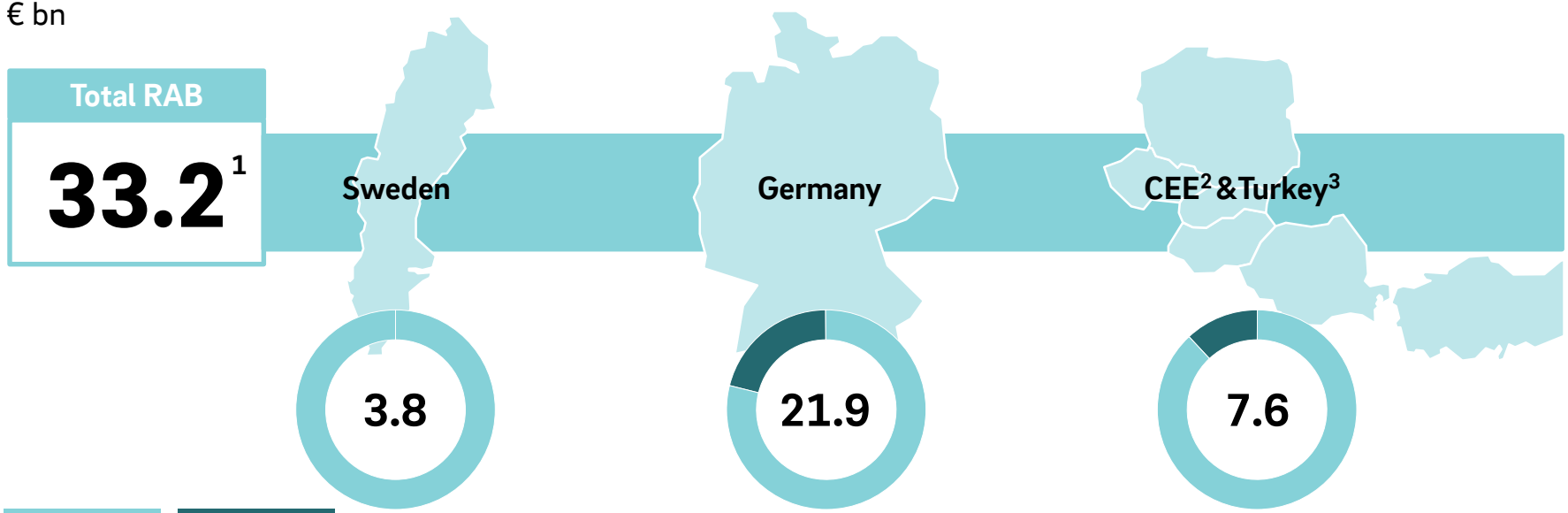


2019 [1,2]	Germany	Sweden	Hungary	Czech Republic	Poland	Romania	Slovakia [3]	Turkey [3]	Total [4]
Wheeling volumes power (TWh)	238	36	36	14	8	6	10	46	**394**
Wheeling volumes gas (TWh)	173	n/a	15	3	-	26	-	-	**217**
Grid length power ('000km)	705	138	130	66	18	82	39	232	**1,409**
Grid length gas ('000km)	103	n/a	18	5	-	23	-	-	**149**
RAB power & gas (€ bn)[5]	21.9	3.8	2.5	1.8	0.7	0.8	0.6	1.3	**33.2**

1. Preliminary figures.
2. Excluding Croatia as the nature of the business is not fully comparable.
3. Slovakia and Turkey are not consolidated in E.ON financial statements (here: 100% view).
4. Small differences in reported total figures may occur due to rounding.
5. RAB Sweden, Poland, Slovakia and Turkey only includes power.

Energy Networks — Geographies

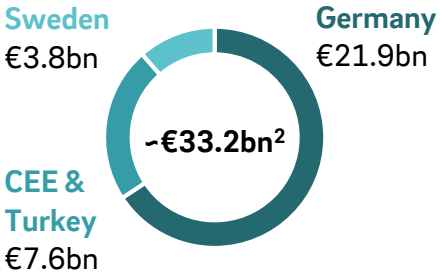
Regulated Asset Base (RAB)
€ bn



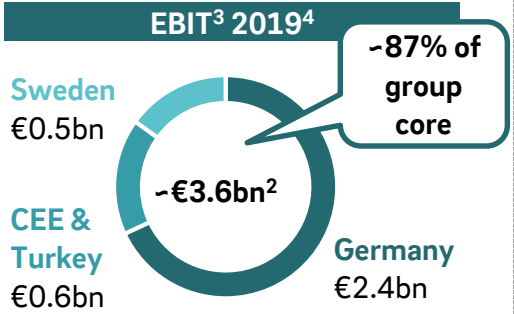
1. Differences may occur due to rounding.
2. Central Eastern Europe including: Czech Republic, Hungary, Poland, Romania, Slovakia.
3. 100% view for Slovakia and Turkey.

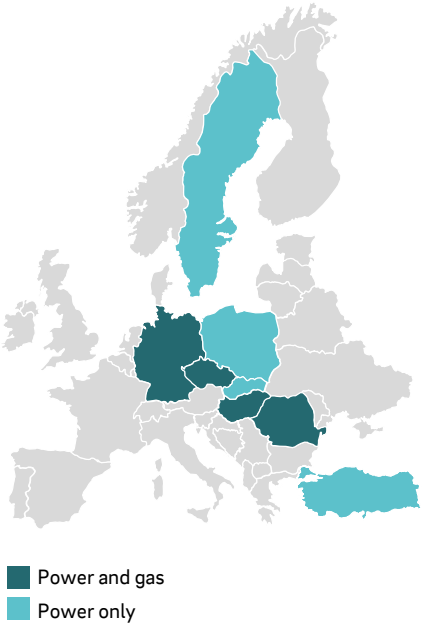
Energy Networks — Overview

Regulated Asset Base 2019[1]

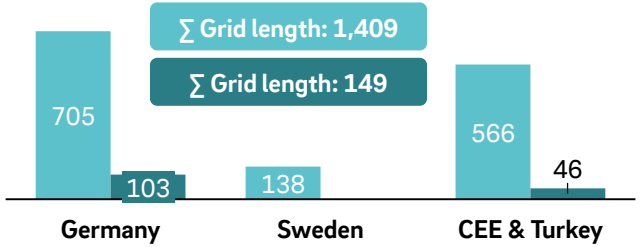


EBIT[3] 2019[4]

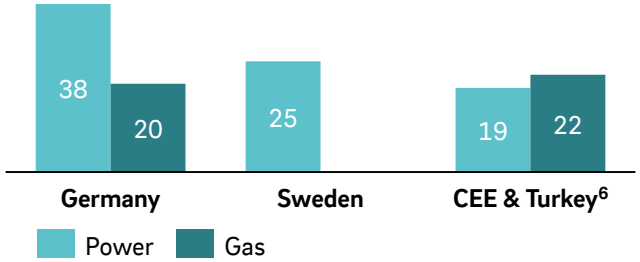




Grid length ('000 km)[2]



Market share[5] (%)



1. 100% view for Slovakia and Turkey.
2. Differences may occur due to rounding.
3. Adjusted for non operating effects. Turkey and Slovakia included as an at-equity participation (i.e. with net income result).
4. Pro forma.
5. Market share determined by grid length.
6. Weighted average by grid length.

Energy Networks — Financial overview




	2019[1]			
€m	**Germany**	**Sweden**	**CEE/Turkey[2]**	**Total**
Adjusted EBITDA[3]	3,717	692	950	**5,359**
Adjusted EBIT[3]	2,438	539	605	**3,582**
Investments (cash-effective)	2,254	313	582	**3,149**
Regulatory D&A[4]	1,028	268	689	**1,985**

1. Pro forma.
2. Turkey and Slovakia included as an at-equity participation (i.e. with net income result).
3. Adjusted for non operating effects.
4. Turkey and Slovakia 100% view.

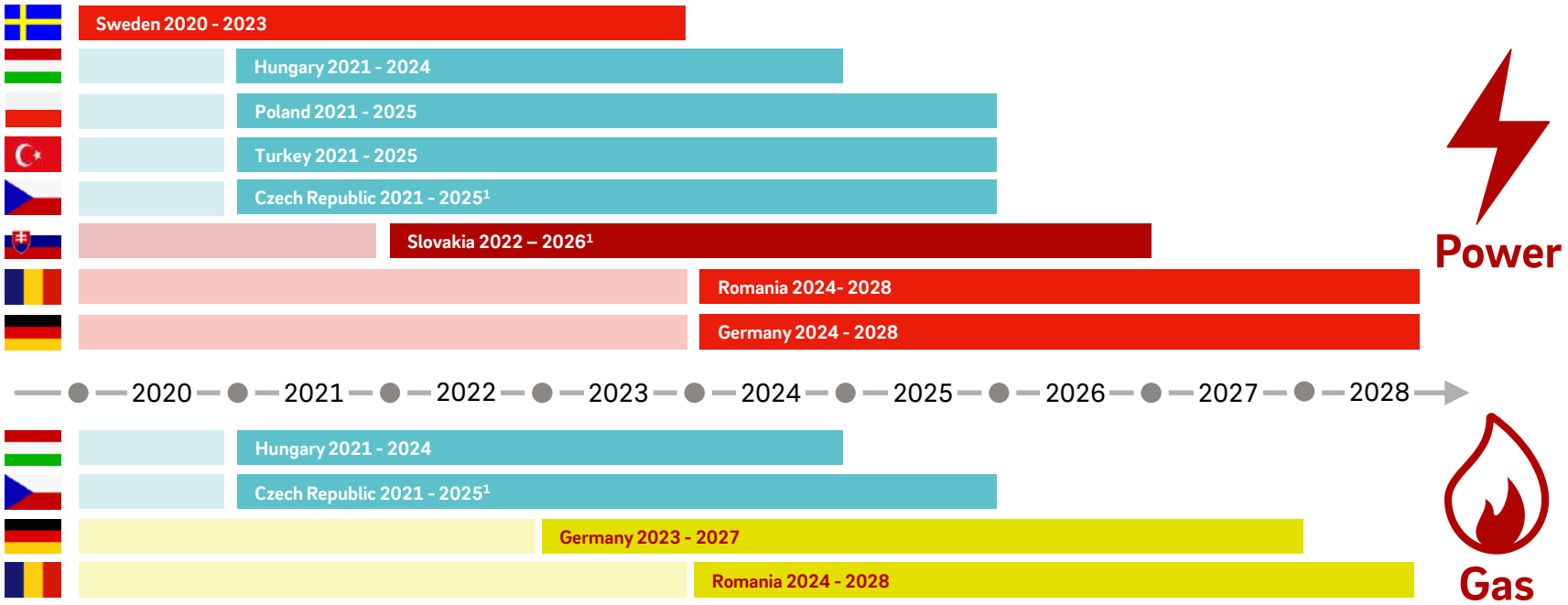
Energy Networks — Earnings components

2019[1]	Germany	Sweden	CEE[2]
Total EBITDA (€ bn)	**3.7**	**0.7**	**0.8**
Components of total EBITDA (%)			
Grid business	77	99	97
thereof regulatory depreciation	28	39	52
Other incl. additional business	15	1	3
Income from participations	8	0	0

2019[1]	Germany	Sweden	CEE[2]
Total EBIT (€ bn)	**2.4**	**0.5**	**0.5**
Components of total EBIT (%)			
Grid business	77	99	95
Other incl. additional business	10	1	5
Income from participations	13	0	0

1. Pro forma.
2. CEE figures include Czech, Hungary, Romania and Poland.

Energy Networks — Upcoming regulatory periods



1. Length of upcoming regulatory period still under discussion.

Content

Energy Networks Germany — Business overview

Germany	2018	2019
Grid length		
Power ('000km)[1]	697	705
Market share (%)	*38*	*38*
Gas ('000km)[1]	102	103
Market share (%)	*20*	*20*

	2018	2019
Grid conduct		
Wheeling volumes power (TWh)[2]	245	238
Wheeling volumes gas (TWh)	172	173
RAB power & gas (€ bn)[3]	**21.3**	**21.9**

Major shareholdings

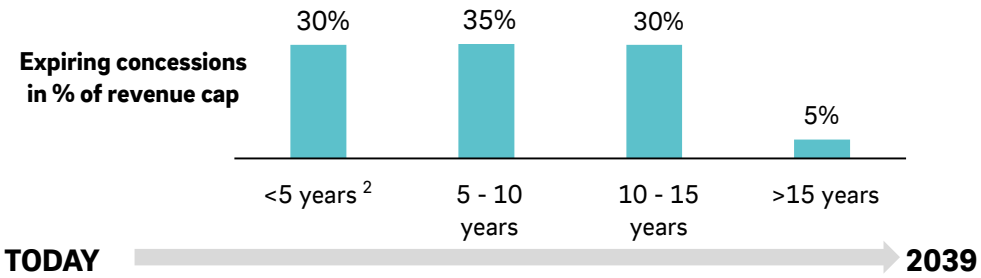
Avacon AG	61.5%	
Bayernwerk AG	100%	
E.DIS AG	67.0%	
envia Mitteldeutsche Energie AG	58.6%	+ 1 share
HanseWerk AG	66.5%	
innogy Westenergie GmbH	100%	
Lechwerke AG	89.1%	
Süwag Energie AG	77.6%	
VSE AG	50%	+ 1 share

1. Preliminary figures.
2. Wheeling Volumes include High Voltage (110kV).
3. Pro forma RAB not applicable for current regulatory period in power and gas; applicable RAB for current regulatory period is RAB of 2015 (gas): €4.5bn / 2016 (power): €16.7bn.

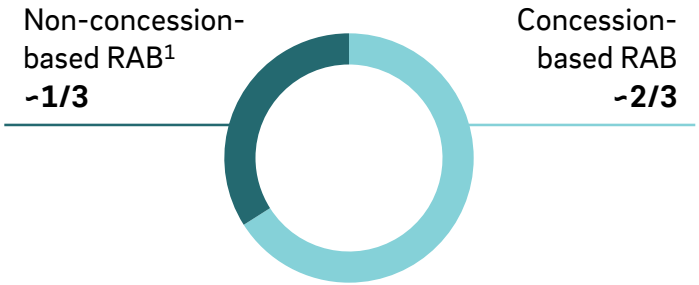
Energy Networks Germany — Concessions business

Good track record in the past

- The German networks business holds more than **9,000** concessions
- The German networks business is based on long-term concessions granted by municipalities in the network area
- Maximum period of concession contract is **20 years**



Existing concessions



1. Includes for example 110 kV grid and meters.
2. Includes currently open concessions.

Energy Networks Germany – Regulatory environment power & gas

Process steps of regulatory system[1]

Basics

- Method: Revenue cap (incentive regulation)
- Regulatory period: 5 years - power: 3rd reg. period: 2019-2023, gas: 3rd regulatory period: 2018-2022

Cost audit + benchmarking — *every 5 years*

- Cost audit and benchmarking (for Opex/capital costs) once per regulatory period
- Total costs of historic base year (three years prior to start year of new regulatory period, e.g. 2016 for 3rd regulatory period power / 2021 for 4th regulatory period power) basis for benchmarking & revenue cap

Annual revenue cap — *annual adjustment*

- Annual adjustment of revenue cap by
  - Consumer Price Index (CPI)
  - General efficiency factor for power of 0.9%; general efficiency factor for gas 0.49%
  - Individual efficiency factors based on benchmarking result

Adjustment of capital costs — *annual adjustment*

- Annual adjustment of RAB for investments (growth/replacement) and regulatory depreciation ("true up") leads to annual adaptation of capital costs

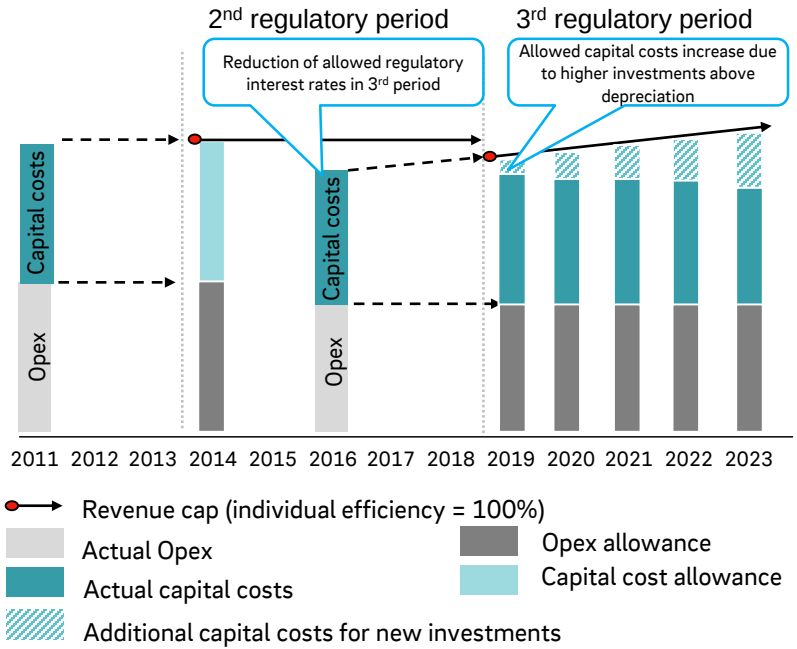
Network tariff — *annual adjustment*

- Based on revenue cap, estimated energy consumption and revenue differences (too high/ low) from prior years

1. Please note, that the information provided is a simplified version of the German regulatory framework.

Energy Networks Germany – Regulatory schedule

Power distribution[1] - illustration



Commentary

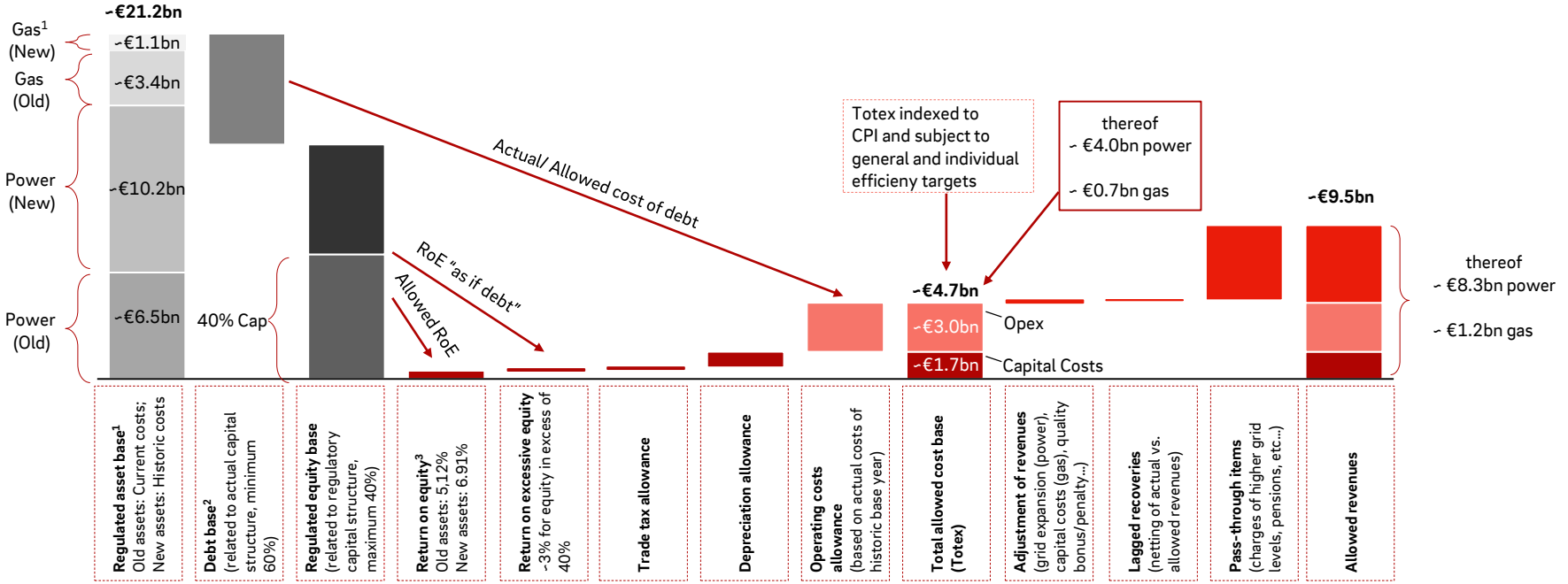
3rd regulatory period:

- Opex of base year 2016 are basis for allowed revenues from 2019 onwards1
- Annual adjustment of RAB for investments (growth/replacement) and regulatory depreciation ("true up") leads to annual adaptation of capital costs
- Capital costs of base year 2016 for investments from 2007 to 2016 are kept constant in the 3rd regulatory period as interim solution due to change of regulatory system

1. For gas the base year for the third regulatory period is 2015. The third regulatory period started in 2018.

Germany – Building blocks of allowed revenues

Schematic illustration for 2019 (power & gas)



1. Old assets are those capitalized before January 1, 2006. New assets are those capitalized after January 1,2006. Old assets are indexed up to 40% with asset-specific indices to determine the current costs. Relevant asset base for calculation of allowed return in 2019 is 2016 for power and 2015 for gas.
2. Debt base consists of non-interest and interest bearing capital.
3. Return on equity rate is post trade tax and pre corporate tax.

Energy Networks Germany – Determination of regulatory returns

Regulatory returns in German power networks	2nd regulatory period			3rd regulatory period[4]		
Equity return	New assets[1]	Old assets[1]	Total	New assets[1]	Old assets[1]	Total
Asset share	32%	68%	100%	53%	47%	100%
Base rate	3.80%	2.24%		2.49%	1.04%	
Market premium	4.55%	4.55%		3.80%	3.80%	
Beta	0.38	0.38		0.40	0.40	
Levered Beta	0.79	0.79		0.83	0.83	
Equity return after tax	7.40%	5.84%		5.64%	4.19%	
Equity return pre tax	**10.49%**	**8.27%**		**8.00%**	**5.94%**	
Equity return pre corporate tax	9.05%	7.14%		6.91%	5.13%	
Cost of debt (for equity above 40%)						
pre tax	**3.98%**			**2.72%**		
post tax	2.81%			1.92%		
WACC[2]						
pre tax	6.58%	5.70%	**5.98%**	4.83%	4.01%	**4.45%**
post tax	4.64%	4.02%	4.22%	3.41%	2.83%	3.14%
Tax rate	29.53%			29.53%		
Corporate tax	15.83%			15.83%		
Trade tax	13.70%			13.70%		
Financing structure[3]						
Equity	40%			40%		
Debt	60%			60%		

1. Old assets are those capitalized before January 1, 2006. New assets are those capitalized after January 1, 2006. Old assets are indexed up to 40% with asset-specific indices to determine the current costs.
2. Weighted average cost of capital. The German regulator does not use a WACC-approach. The pro-forma WACC can be used to compare German regulatory returns internationally
In Germany, the regulator determines an allowed return on equity (RoE). This RoE is applied to the regulated equity base (RAB + current assets - debt base).
3. Interest free liabilities (such as construction grants) not considered.
4. E.ON DSO filed an appeal against BNetzA decision.

Energy Networks Germany — Results from participations 2019

Company	Contribution to E.ON result 2019[1] (€m)
Energy Networks	
At equity consolidation	**219**
RheinEnergie AG	34
Dortmunder Energie- und Wasserversorgung GmbH	15
Städtische Werke Magdeburg GmbH & Co. KG	12
GASAG AG	11
Rhein-Main-Donau GmbH	10
REWAG Regensburger Energie- und Wasserversorgung AG & Co. KG	8
AVU Aktiengesellschaft für Versorgungs-Unternehmen	8
Other	121
At cost consolidation	**85**
SERVICE plus GmbH	7
Other	78

1. Pro forma.

Content

Energy Networks Sweden — Business overview

Sweden[1]	2018	2019
Grid length		
Power ('000km)	138	138
Market share (%)	*25*	*25*
Gas ('000km)	-	-
Market share (%)	-	-

	2018	2019
Grid conduct		
Wheeling volumes power (TWh)	37	36
Wheeling volumes gas (TWh)	-	-
RAB power & gas (€bn)[2]	**3.7**	**3.8**

Major shareholdings

E.ON Energidistribution AB	100%

1. Disposal of gas grid in 2018; preliminary figures for 2019.
2. RAB figures converted at a SEK/EUR rate of 10.26 (2018) and 10.59 (2019); RAB value for 2018 only shows Power RAB.

Energy Networks Sweden – Regulatory environment power

Overview

Basics

- Method: Revenue cap
- Regulatory period: 2020-2023
- Next regulatory period: 2024-2027
- Photo year for Opex allowance: Four year average
- Inflation adjustment: Opex

Cap formula[1]

- Revenue cap =
  (Controllable costs x (PI - efficiency factor)) + non-controllable costs + (age adjusted value (number of recognized assets and planned assets x regulatory standard prices)) x WACC + depreciation[2] +/- quality adjustment

Key Cost factors

- Regulatory return (WACC) on RAB (pre-tax, real): 2.16%[3]
- RAB set once a period by the regulator based on standard prices applied to recognized historic assets; annual adjustment based on inflation, planned assets, minus disposals and depreciation
- Depreciation period for power lines, cables is ~50 years, stations is ~40 years and ~10 years for meters and IT-systems

Opex

- Historical average costs 2014-2017 indexed to 2018
- Opex annually adjusted for inflation (PI)
- Inflation factor (PI) is the customer price index
- Efficiency factor: 1% p. a.
- Non-controllable costs are pass-through costs reflected in the revenue cap

Other important factors

- Quality adjustment considers outages above 3 minutes and below 12 hours and incentives for grid losses
- Most RES[4] connections are cash neutral

1. The cap formula is an E.ON internal interpretation of the national regulatory framework.
2. Average regulatory depreciation (2019-2021): ~€ 239 m p. a.
3. WACC for prior regulatory period 2016-2019: 5.85%.
4. Renewables.

Content

Energy Networks Czech Republic – Business overview

Czech Republic[1]	2018	2019
Grid length		
Power ('000km)	66	66
Market share (%)	*28*	*28*
Gas ('000km)	5	5
Market share (%)	*6*	*6*

	2018	2019
Grid conduct		
Wheeling volumes power (TWh)	14	14
Wheeling volumes gas (TWh)	3	3
RAB power and gas (€ bn)[2]	**1.7**	**1.8**

Major shareholdings

E.ON Distribuce, a.s.	100%
Local Energies, a.s.	100%

1. Preliminary figures for 2019.
2. RAB figures converted at a CZK/EUR rate of 25.65 (2018) and 25.67 (2019).

Energy Networks Czech Republic – Regulatory environment power

Overview

Basics
- Method: Revenue cap
- Regulatory period: 2016-2020
- Next regulatory period[1]: 2021-2025
- Photo year for Opex allowance[2]: Three year average (based on past practice; the laws do not provide an explicit mechanism)
- Inflation adjustment: Opex

Cap formula[3]
- Revenue cap = (Controllable costs + non-controllable costs)[4] x (PI - efficiency factor) + (RAB x WACC) + depreciation[5] + Quality bonus/ malus + Market factor

Key cost factors

Capex
- Regulatory return (WACC) on RAB (pre-tax, nominal): 7.95%
- Depreciation period for power lines is 40 years
- Annual adjustments of RAB for depreciation and planned investments (no time lag)

Opex
- Historical average costs 2012-2013
- Opex annually adjusted for inflation (PI)
- Inflation factor (PI) for Opex is 70% business service price index + 30% (CPI+1%)
- General efficiency factor: 1.0% annually
- Individual efficiency factor: 0% for the current regulatory period

Other important factors
- 80% of customer contributions to investment costs deducted from allowed revenues with 20 year time distribution

1. Not legally set, anticipated based on past experience.
2. Proposal for the next regulatory period.
3. The cap formula is an E.ON internal interpretation of the national regulatory framework.
4. Regulator doesn't distinguish between controllable and noncontrollable costs.
5. Average regulatory depreciation (2019-2021) for power and gas: ~ €137m p. a.

Energy Networks Czech Republic – Regulatory environment gas

Overview

Basics

- Method: Revenue cap
- Regulatory period: 2016-2020
- Next regulatory period[1]: 2021-2025
- Photo year for Opex allowance[2]: Three year average (based on past practice; the laws do not provide an explicit mechanism)
- Inflation adjustment: Opex

Cap formula[3]

- Revenue cap = (Controllable costs + non-controllable costs)[4] x (PI - efficiency factor) + (RAB x WACC) + depreciation[5] + Market factor

Key cost factors

Capex

- Regulatory return (WACC) on RAB (pre-tax, nominal): 7.94%
- Depreciation period for gas pipes is 40 years
- Annual adjustments of RAB for depreciation and planned investments (no time lag)

Opex

- Historical average costs 2012-2013
- Opex annually adjusted for inflation (PI)
- Inflation factor (PI) for Opex is 70% business service price index + 30% (CPI+1%)
- General efficiency factor: 1.0% annually
- Individual efficiency factor: 0% for the current regulatory period

Other important factors

- 80% of customer contributions to investment costs deducted from allowed revenues with 20 year time distribution

1. Not legally set, anticipated based on past experience.
2. Proposal for the next regulatory period.
3. The cap formula is an E.ON internal interpretation of the national regulatory framework.
4. Regulator doesn't distinguish between controllable and noncontrollable costs.
5. Average regulatory depreciation (2019-2021) for power and gas: ~ €137m p. a.

Energy Networks Hungary — Business overview

Hungary[1]	2018	2019
Grid length		
Power ('000km)	129	130
Market share (%)	*79*	*79*
Gas ('000km)	18	18
Market share (%)	*23*	*23*

	2018	2019
Grid conduct		
Wheeling volumes power (TWh)	36	36
Wheeling volumes gas (TWh)	15	15
RAB power and gas (€ bn)[2]	**2.5**	**2.5**

Major shareholdings

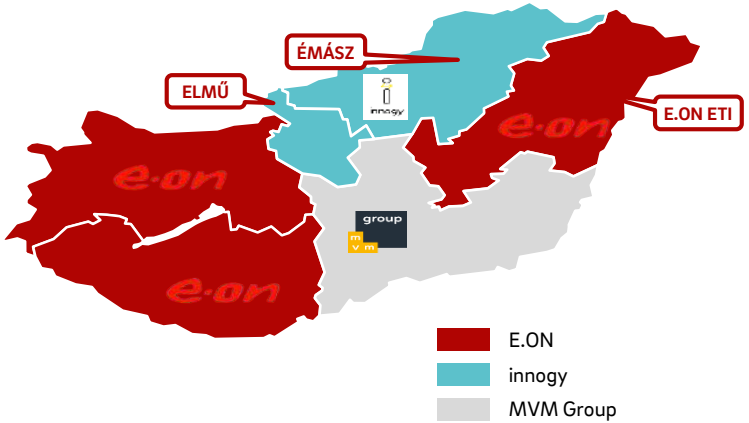
E.ON Dél-dunántúli Áramhálózati Zrt.	100%
E.ON Észak-dunántúli Áramhálózati Zrt.	100%
E.ON Tiszántúli Áramhálózati Zrt.	100%
E.ON Dél-dunántúli Gázhálózati Zrt.	99.96%
E.ON Közép-dunántúli Gázhálózati Zrt.	99.84%
ELMŰ Nyrt.	98.94%
ÉMÁSZ Nyrt.	97.05%

1. Preliminary figures for 2019.
2. RAB figures converted at a HUF/EUR rate of 318.89 (2018) and 325.30 (2019).

Energy Networks Hungary — Restructuring overview

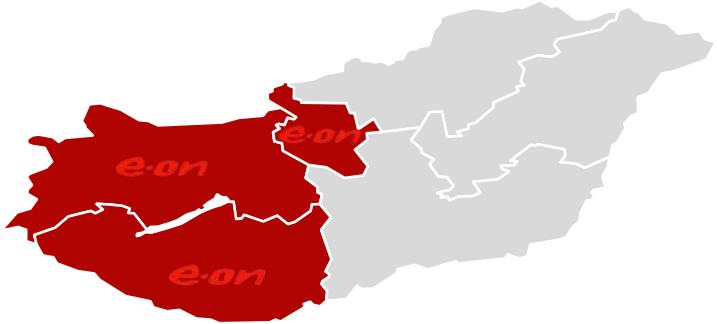
Before Transaction

DSO & USP[1]

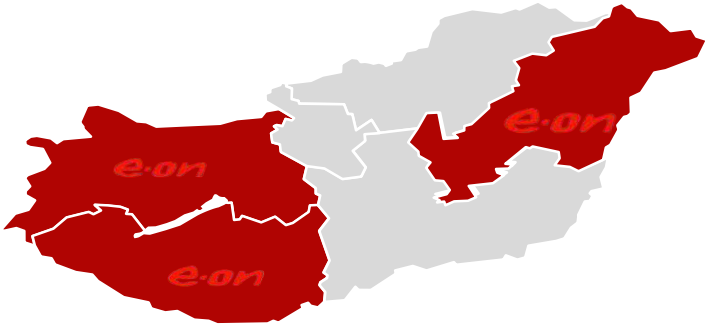


After Transaction

DSO



USP



1. Universal Service Provider.

Energy Networks Hungary – Regulatory environment power

Overview

Basics
- Method: Price cap[1]
- Regulatory period: 2017-2020
- Next regulatory period: 2021-2024
- Photo year for Opex allowance: The year two years prior to the start year of the new regulatory period
- Inflation adjustment: Opex; RAB

Cap formula[2]
- Price cap[3] = (Allowed controllable costs + non-controllable costs + (RAB x WACC) + depreciation[4] ± quality bonus/malus ± investment bonus/malus) / forecasted volume[5]

Key cost factors

Capex
- Regulatory return (WACC) on RAB (pre-tax, real): 4.69%
- Annual adjustments of RAB for inflation and depreciation
- Smart grid investments get a 1.1 return multiplier
- Depreciation period for power lines is 37 years

Opex
- Historical costs 2015
- Opex annually adjusted for inflation (CPI) and required efficiency (X)

Other important factors
- Quality factor for unplanned SAIDI[6], SAIFI[6] and an outage rate min. level defined. Sanctions possible if non-compliant in 3-years average
- Additional revenues granted for RES integration and connection of economy boosting investments (i.e. connection of industry parks)
- Public utility tax (125 HUF/meter) and "Robin Hood tax" (31% of tax base) not recognized in network tariffs

1. Price-cap-like system; modified with actual quantity acceptance with two year time lag.
2. The cap formula is an E.ON internal interpretation of the national regulatory framework.
3. Accepted tolerance +/-2%.
4. Average regulatory depreciation (2019-2021) for power and gas: ~ € 196m p. a.
5. Actual volumes from year N-2 is used as forecast.
6. System Average Interruption Duration Index, System Average Interruption Frequency Index.

Energy Networks Hungary – Regulatory environment gas

Overview

Basics
- Method: Price cap
- Regulatory period: 2017-2020[1]
- Next regulatory period: 2021-2024[1]
- Photo year for Opex allowance: The year two years prior to the start year of the new regulatory period
- Inflation adjustment: Opex; RAB

Cap formula[2]
- Price cap = (Allowed controllable costs + non-controllable costs + (RAB x WACC) + depreciation[3]) / forecasted volume[4]

Key cost factors

Capex
- Regulatory return (WACC) on RAB (pre-tax, real): 4.62%
- Annual adjustments of RAB for inflation and depreciation
- Depreciation period for gas pipes is 40 years

Opex
- Historical costs 2015
- Opex annually adjusted for inflation (CPI), additional yearly cost adjustment

Other important factors
- Public utility tax (125 HUF/meter of grid) and "Robin Hood tax" (31% of tax base) not recognized as eligible costs in the network tariffs

1. Gas-year starts 1st of October.
2. The cap formula is an E.ON internal interpretation of the national regulatory framework.
3. Average regulatory depreciation (2019-2021) for power and gas: ~ €196m p. a.
4. Actual volumes from year N-2 is used as forecast.

Energy Networks Poland — Business overview

Poland[1]	2018	2019
Grid length		
Power ('000km)	17	18
Market share (%)	*2*	*2*
Gas ('000km)	-	-
Market share (%)	-	-

	2018	2019
Grid conduct		
Wheeling volumes power (TWh)	8	8
Wheeling volumes gas (TWh)	-	-
RAB power and gas (€ bn)[2]	**0.7**	**0.7**

Major shareholdings

innogy Stoen Operator Sp. z o.o.	100%

1. Preliminary figures for 2019.
2. RAB figures converted at a PLN/EUR rate of 4.26 (2018) and 4.3 (2019).

Energy Networks Poland – Regulatory environment power

Overview

Basics
- Method: Price cap
- Regulatory period: 2016-2020
- Next regulatory period: 2021-2025
- Photo year for Opex allowance: Seven years average
- Inflation adjustment: Opex

Cap formula[1]
- Price cap = [Controllable costs x (1+RPI - efficiency factor) + non-controllable costs[2] + (RAB x WACC x Q x WR) + depreciation[3] + grid losses] / (forecasted volumes)

Key cost factors

Capex
- Risk free rate and WACC set yearly (pre-tax, nominal): 6.015% for 2019
- Annual adjustment of RAB for inflation and depreciation and investments of prior year minus non-refundable resources
- Depreciation period for power lines, cables and stations is 40 years, 1 year for meters and 5 years for IT-systems

Opex
- Historical average costs 2008-2014 indexed to 2015
- Opex annually adjusted for inflation (RPI with N-2)
- Efficiency factor set by Regulator for regulatory period: 1.49%

Other important factors
- Q - Quality regulation for SAIDI, SAIFI and connection time (set for 2018 – 2025)
- WR - regulatory factor-used by the Regulator (min-value: 0.9 x return on RAB, max-value: 1.1 x return on RAB)

1. The cap formula is an E.ON internal interpretation of the national regulatory framework.
2. Including TSO costs, non DSO & TSO costs (RES, CHP, transition, capacity fees) and taxes.
3. Average regulatory depreciation (2019-2021): ~ €82m p. a.

Energy Networks Romania — Business overview

Romania[1]	2018	2019
Grid length		
Power ('000km)	81	82
Market share (%)	*17*	*17*
Gas ('000km)	22	23
Market share (%)	*44*	*45*

	2018	2019
Grid conduct		
Wheeling volumes power (TWh)	6	6
Wheeling volumes gas (TWh)	27	26
RAB power and gas (€ bn)[2]	**0.8**	**0.8**

Major shareholdings

Delgaz Grid SA	56.5%

1. Preliminary figures for 2019.
2. RAB figures converted at a RON/EUR rate of 4.65 (2018) and 4.75 (2019).

Energy Networks Romania – Regulatory environment power

Overview

Basics

- Method: Price cap tariffs basket with actual volume acceptance (1 year time lag)[1]
- Regulatory period: 2019-2023
- Next regulatory period: 2024-2028
- Photo year for Opex allowance: Previous period of the new regulatory period with regulatory benchmark
- Inflation adjustment: Opex; RAB

Cap formula[2]

- Price cap =
- [(Operation costs & Maintenance) x (1 - efficiency factor) + Personnel + HS&E costs + Grid Losses costs + Non-controllable costs + (RAB x WACC) + depreciation[3] – revenue from reactive energy]/ forecasted volume

Key cost factors

Capex

- Regulatory return (WACC) on RAB (pre-tax, real): 6.9%[4]
- Adjustments of RAB for inflation (CPI), depreciation and planned investments (no time lag) ex-ante of regulatory period and ex-post with actual investments
- Obligation to achieve a 95% of grid investments included in the annual investment plan approved by regulator
- Depreciation period for power lines is 30 to 40 years

Opex

- Historical costs and annual correction of allowed costs
- Opex annually adjusted for inflation (CPI)
- Obligation to achieve 90% on maintenance plan
- General efficiency factor: max 2 % p. a.
- Opex outperformance: 40% of gained efficiency is kept by DSO, but no more than 5% of EBIT

Other important factors

- Efficiency factor does not apply to personnel expenses and HS&E costs
- Automatic compensations for violated quality standards towards customers
- From 2018 onwards no recognition of "Natural monopoly tax" in network tariffs

1. Tariff cap increase at max. 7% on average tariffs and max 10% on each voltage level (based on current tariffs methodology for 4th Regulatory Period 2019-2023).
2. The cap formula is an E.ON internal interpretation of the national regulatory framework.
3. Average regulatory depreciation (2019-2021) for power and gas: ~ €62 m p. a.
4. 5.66% Jan-Mar 2019; 6.9% as of April 2019; valid by end of April 2020; it is expected to receive a new WACC from Regulator.

Energy Networks Romania – Regulatory environment gas

Overview

Basics
- Method: Revenue cap[1]
- Regulatory period: 2019-2023[2]
- Next regulatory period: 2024-2028[2]
- Photo year for Opex allowance: The year prior to the start year of the new regulatory period
- Inflation adjustment: Opex; RAB

Cap formula[3]
- Revenue cap = [(Operations + Maintenance costs) x (1+CPI - efficiency requirements) + (Personnel + HS&E costs) x (1+CPI) + Grid Losses + non-controllable costs + (RAB x WACC) + depreciation[4]]

Key cost factors

Capex
- Regulatory return (WACC) on RAB (pre-tax, real): 6.9%[5]
- Adjustments of RAB for inflation (CPI), depreciation and planned investments (no time lag) ex-ante of regulatory period and ex-post with actual investments
- Depreciation period for gas pipes is 30 to 40 years

Opex
- Historical costs 2018[6] and annual correction of allowed costs
- Opex annually adjusted for inflation (CPI)
- General efficiency factor: max 1% p. a.
- Opex outperformance: 40% of gained efficiency is kept by DSO

Other important factors
- Efficiency factor does not apply to personnel expenses and HS&E costs
- Automatic compensations for violated quality standards towards customers
- From 2018 onwards no recognition of "Natural monopoly tax" in network tariffs

1. Regulatory revenue will be adjusted based on the difference between approved and actual volumes distribution revenues from prior year (a net effect of both volumes and tariffs).
2. Gas-year starts 1st of July.
3. The cap formula is an E.ON internal interpretation of the national regulatory framework.
4. Average regulatory depreciation (2019-2021) for power and gas: ~ €62m p. a.
5. 5.66% Jan-Mar 2019; 6.9% as of Apr 2019; valid by end of April 2020; it is expected to receive a new WACC from Regulator.
6. Incl. benchmarking and additional substantiated costs.

Energy Networks Slovakia — Business overview

Slovakia[1]	2018	2019
Grid length		
Power ('000km)	38	39
Market share (%)	*49*	*49*
Gas ('000km)	-	-
Market share (%)	-	-

	2018	2019
Grid conduct		
Wheeling volumes power (TWh)	10	10
Wheeling volumes gas (TWh)	-	-
RAB power and gas (€ bn)	**0.6**	**0.6**

Major shareholdings

Západoslovenská distribucná a.s.	49%

1. Preliminary figures for 2019.

Energy Networks Slovakia – Regulatory environment power

Overview

Basics
- Method: Price cap
- Regulatory period: 2017-2021
- Next regulatory period[1]: 2022-2026
- Photo year for Opex allowance: 2010
- Inflation adjustment: Opex

Cap formula[2]
- Price cap per voltage level[3] = (Opex allowance x (1 + core inflation - efficiency factor) + (RAB 2010 YE x WACC) + depreciation (from RAB 2010 YE + from planned Capex for next year)[4] - revenues from connections & recovery of illegal consumption & exceeding reserved capacity ± correction on depreciation (from planned vs. actual Capex)) / forecasted volume

Key cost factors

Capex
- Regulatory return (WACC pretax, nominal) on RAB: set annually; 6.04% for 2019
- RAB: Depreciated asset base based on external value appraisal of assets, investments and depreciation prepared by Slovakian regulator
- Depreciation period for power lines is 30 (LV) to 35 years (MV, HV)

Opex
- Historical costs 2010
- Opex annually adjusted for inflation
- Inflation factor for Opex is core inflation, however escalation index (1+ core inflation - efficiency) cannot be below 1.0
- Efficiency factor (applied to Opex): 3.5% p. a.

Other important factors
- Automatic compensations for violated quality standards towards customers

1. Length of upcoming regulatory period still under discussion.
2. The cap formula is an E.ON internal interpretation of the national regulatory framework.
3. Price caps for high voltage (110 kV), medium voltage (22 kV) and low voltage (0.4 kV).
4. Average regulatory depreciation (2019-2021): ~€92m p. a.

Energy Networks Turkey – Overview

Enerjisa Enerji (networks & retail):

- #1 Distribution network operator by grid length
- #1 Energy supplier by customer number

232,000 km networks

9.9m retail customers

Energy Networks Turkey – Financial overview

Enerjisa Enerji (networks & retail)[1]	2018	2019
Revenues (TRL m)	**18,347**	**19,453**
EBITDA + capex reimbursement[2] (TRL m)	**4,864**	**4,427**
Net Income (TRL m)	**748**	**1,034**
E.ON share of 50% in Jan 18 & 40% since Feb 18 (€ m)[3]	**57**	**64**
Acquisition related depreciation charges (run rate)	-5	-5
FX hedges and other	0	0
Equity result (€ m)[4]	**52**	**60**

1. 100% Enerjisa view.
2. Capex reimbursements refer to cash effective amortization of the regulatory asset base, but due to the application of IFRIC 12 (accounting for concessions) not recognized as income under IFRS. To facilitate the comparability of Enerjisa's earnings across the sector, of which the peers may recognize regulatory amortization as income, the non-IFRS KPI "Operational Earnings" defined as EBITDA plus Capex reimbursements is applied. Includes one-offs.
3. Quarter end FX spot rates applied. Enerjisa Enerji ownership before IPO (Feb-2018) 50%.
4. Differences may occur due to rounding.

Energy Networks Turkey — Networks and Retail

Networks	2018	2019
Power grid length ('000km)[1]	**227**	**232**
Market share (%)[1]	*20*	*20*
Wheeling Power (TWh)	**46**	**46**
RAB (€ bn)[2]	**1.1**	**1.3**
RAB (TRL bn)	**6.9**	**8.4**

Retail	2018	2019
Power sales (TWh)	**41.1**	**36.1**
Market share (%)[1]	*17*	*15*
# of customers	**9.6**	**9.9**
Market share (%)[1]	*23*	*22*

1. Latest available data as of end of 2019.
2. RAB figure converted at a TRL/EUR rate of 6.0 (2018, end of period) and 6.7 (2019, end of period).

Energy Networks Turkey – Regulatory environment networks & retail

Networks

Regulatory - WACC (Pre-tax real, local currency)

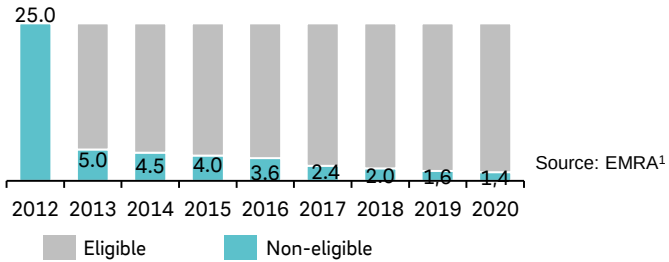
13.6%

Regulatory incentive framework

- 3rd regulatory period: 2016-2020
- Return on RAB (RAB 2019: TRL 8.4bn)
- Opex outperformance
- Theft & loss allowance outperformance

Retail

Evolution of market liberalization - eligibility threshold (MWh p.a.)



Source: EMRA[1]

Partially liberalized energy market

- Above a certain consumption threshold, customers can chose their own energy supplier (eligible customers)
- Below the consumption threshold, customers are bound by regulated tariffs (non-eligible customers)
- Eligibility limit for regulated tariff consistently reduced.
- Continued liberalization expected, opening up new market and profit pools.
- Last resort tariff further reduced for industrials with consumption from >10GWh to >7GWh in 2020

1. Energy Market Regulatory Authority (Turkey).

Content

Customer Solutions — Business overview

What we do

- Customer Solutions includes energy sales, energy infrastructure and solutions for industrial customers and cities, as well as growth businesses such as Future Energy Home and e-Mobility
- The product offering ranges from power and gas sales to district and local area heating solutions, on-site generation, virtual power plants, energy efficiency, smart metering, e-Mobility, home heating, energy management, PV + battery etc.
- The business addresses the needs of three main customer groups: B2C, industrial customers, as well as cities, quarters and real estate developers[3]
- 32,400 employees work in Customer Solutions

2019	Germany	UK	Benelux	Italy	Sweden	Poland	Czech Rep.	Hungary	Romania	Slovakia[1]	Croatia[2]	Slovenia[2]	Turkey[4]	Total
# of customers (m)	14.2	9.6	4.3	0.9	0.8	1.0	1.2	4.7	3.2	1.0	0.2	0.04	9.9	**51**
Power sales (TWh)	213.1	75.7	19.4	9.9	13.3	5.6	16.4	26.5	5.5	6.0	1.1	0.2	36.1	**428.8**
Gas sales (TWh)	163.5	106.7	71.1	11.4	5.0	0.8	9.5	9.5	25.3	3.0	1.0	0.01	n/a	**406.8**

1. Consolidated on a 49% basis in adjusted EBIT/Net Income of E.ON Financial Statements. Figures shown here: 100% view.
2. Customer Solution Business; consolidated within Energy Networks of E.ON Financial statements.
3. City energy solutions addresses the business to municipalities, cities and districts.
4. 100% view.

Customer Solutions — at a glance

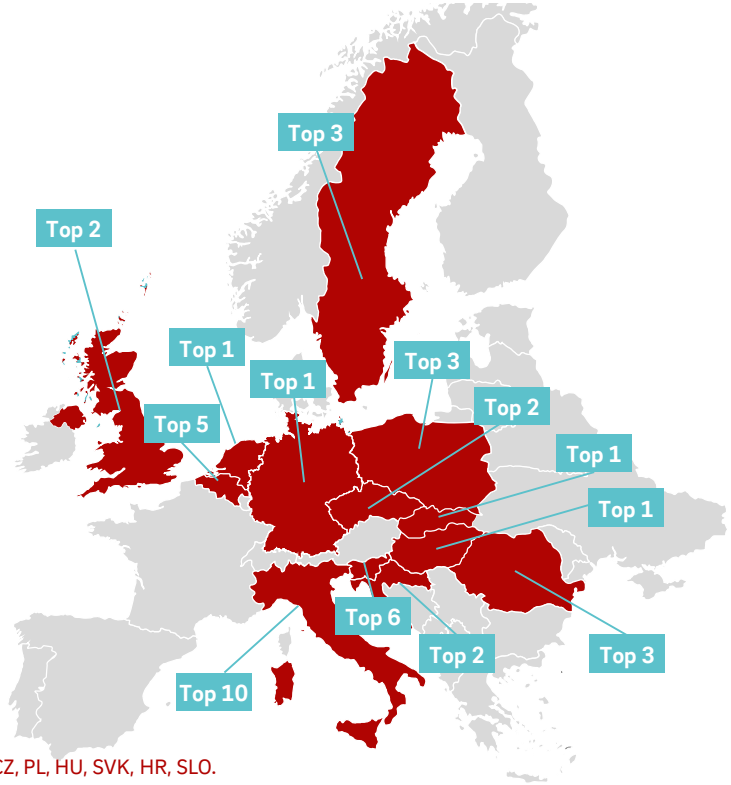
Leveraging customer solutions beyond energy sales

Energy Retail:

- **51m[1] customers in 15 countries**
- **Market leading position with 4x Top 1 and 6x Top 3 positions**

- **Decentral Energy Infrastructure[3] with growing contribution**
- **City Energy Solutions (CES) with market share of 10% in Sweden and 8% in Germany[4]**

E.ON's market position in Energy retail[2]



1. Incl. Turkey and Denmark.
2. Reflects positioning on both power and gas market for UK, DE, NL, BE, IT, RO; only power market for SWE, CZ, PL, HU, SVK, HR, SLO.
3. Including B2B Solutions and City Energy Solutions.
4. Market share based on volumes sold. The market share for Germany is projected based on the E.ON figure.

Customer Solutions – Financial overview

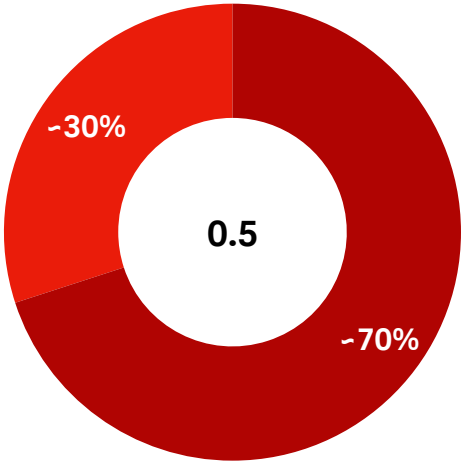
	2019[1]				
€ bn	**Germany**	**UK**	**Benelux**	**Other[3,4]**	**Total**
Adjusted EBITDA[2]	646	-10	192	296	**1,124**
Adjusted EBIT[2]	484	-180	125	97	**526**
Investments (cash-effective)	226	211	90	481	**1,008**

1. Pro forma.
2. Adjusted for non operating effects.
3. Other including Sweden, Romania, Hungary, Czech Republic, Poland, Italy.
4. Customer Solution Business of Slovenia and Croatia is consolidated within Energy Networks of E.ON Financial statements.

Customer Solutions — Financial overview

Adjusted EBIT[1] 2019[2] by customer segment

€ bn

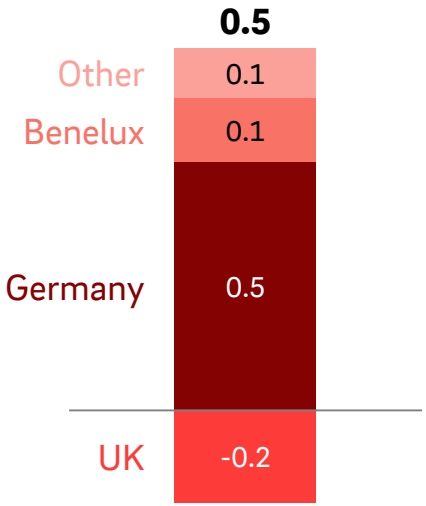


Energy retail[3]

Decentral energy infrastructure

Adjusted EBIT[1] 2019[2] by country

€ bn



1. Adjusted for non operating earnings; slight differences may occur due to rounding.
2. Pro forma.
3. Including New Solutions (Future Energy Home and e-Mobility).

Energy retail — Germany & UK

Germany	2018	2019
Power sales (TWh)[1]	**218.8**	**213.1**
# of E.ON customers - power (m)	**11.7**	**11.9**
# of customers total market - power (m)[2]	46.1	46.1
Market share (%)	*25*	26
Gas sales (TWh)[3]	**127.8**	**163.5**
# of E.ON customers - gas (m)	**2.1**	**2.3**
# of customers total market - gas (m)[2]	12.3	12.4
Market share (%)	*17*	18

Our brands in the market:

1. Combined view including E.ON and innogy for both 2018 and 2019.
2. According to report from Bundesnetzagentur "Monitoringbericht 2018" and "Monitoringbericht 2019".
3. Combined view including E.ON and innogy for both 2018 and 2019. Increase of 7 TWh Gas in 2019 by back sale deals.

UK	2018	2019
Power sales (TWh)[1]	**70.8**	**75.7**
# of E.ON customers - power (m)	**6.5**	**5.9**
# of customers total market - power (m)[2]	29.8	30.0
Market share (%)	*22*	*20*
Gas sales (TWh)	**83.2**	**106.7**
# of E.ON customers - gas (m)	**4.2**	**3.7**
# of customers total market - gas (m)[2]	24.0	24.1
Market share (%)	*17*	*16*

Our brands in the market:

1. Combined view including E.ON and innogy for both 2018 and 2019.
2. Source: Cornwall Energy - Residential accounts & small B2B meters from 31.10.2018 & 31.10.2019.

Energy retail — Benelux & Italy

Benelux[1]	2018	2019
Power sales (TWh)	**14.4**	**19.4**
# of E.ON customers - power (m)	**2.3**	**2.3**
# of customers total market - power (m)	9.3	*9.3*
Market share (%)	*24*	*25*
Gas sales (TWh)	**52.7**	**71.1**
# of E.ON customers - gas (m)	**1.9**	**2.0**
# of customers total market - gas (m)	7.7	*7.6*
Market share (%)	*25*	*26*

Our brands in the market:

essent

powerhouse®

energiedirect.nl

Italy	2018	2019
Power sales (TWh)	**8.3**	**9.9**
# of E.ON customers - power (m)	**0.3**	**0.4**
# of customers total market - power (m)	15.3	17.0
Market share (%)	*2*	*2*
Gas sales (TWh)	**11.3**	**11.4**
# of E.ON customers - gas (m)	**0.5**	**0.5**
# of customers total market - gas (m)	21.2	21.6
Market share (%)	*2*	*2*

Our brands in the market:

e·on

1. Customer Solution Businesses of The Netherlands and Belgium.

Energy retail — Sweden & Poland

Sweden	2018	2019
Power sales (TWh)	**15.8**	**13.3**
# of E.ON customers - power (m)	**0.8**	**0.8**
# of customers total market - power (m)[1]	5.4	5.4
Market share (%)	*15*	14
Gas sales (TWh)	**6.3**	**5.0**
# of E.ON customers - gas (m)	**0.01**	**0.01**
# of customers total market - gas (m)[1]	0.04	0.03
Market share (%)	*35*	*28*

Our brands in the market:

1. Latest available estimate by Swedish official statistics, Statistiska Central Byrån.

Poland	2018	2019
Power sales (TWh)	**5.4**	**5.6**
# of E.ON customers - power (m)[1]	**1.0**	**1.0**
# of customers total market - power (m)[2]	17.6	*17.6*
Market share (%)	*5*	*5*
Gas sales (TWh)	**1.0**	**0.8**
# of E.ON customers - gas (m)	**0.0**	**0.0**
# of customers total market - gas (m)[2]	7.0	7.0
Market share (%)	*0.01*	*0.01*

Our brands in the market:

innogy

1. Customer base for innogy includes segment B2B Solutions.
2. Reflects most recent figure as per 2018.

Energy retail — Czech Republic & Hungary

Czech Republic	2018	2019
Power sales (TWh)	**14.0**	**16.4**
# of E.ON customers - power (m)[1]	**1.0**	**1.0**
# of customers total market - power (m)[2]	6.0	6.0
Market share (%) [1]	*17*	*17*
Gas sales (TWh)	**9.4**	**9.5**
# of E.ON customers - gas (m)[1]	**0.2**	**0.2**
# of customers total market - gas (m)[2]	2.8	2.8
Market share (%)	*8*	*8*

Our brands in the market:

1. In 2018 all customer segments are included.
2. Reflects most recent figure as per Q3 2019.

Hungary[1]	2018	2019
Power sales (TWh)	**26.8**	**26.5**
# of E.ON customers - power (m)[2]	**4.7**	**4.7**
# of customers total market - power (m)[3]	5.6	5.6
Market share (%) [4]	*83*	*83*
Gas sales (TWh)	**9.0**	**9.5**
# of E.ON customers - gas (m)[2]	**0.02**	**0.02**
# of customers total market - gas (m)[3]	3.5	3.5
Market share (%)	*0.0*	*0.5*

Our brands in the market:

Link to restructuring Hungary

1. Combined view including E.ON and innogy for both 2018 and 2019.
2. Customer base for innogy includes segment B2B Large .
3. Actual data for B2C segment (2018-2019) based on Hungarian Central Statistical Office data.
4. Market share overstated as innogy customer base contains SME and B2B Solutions.

Energy retail — Romania & Slovakia

Romania	2018	2019
Power sales (TWh)	**5.6**	**5.5**
# of E.ON customers - power (m)[1]	**1.4**	**1.4**
# of customers total market - power (m)[2]	9.0	9.1
Market share (%)[3]	*15*	*16*
Gas sales (TWh)	**26.9**	**25.3**
# of E.ON customers - gas (m)[1]	**1.7**	**1.8**
# of customers total market - gas (m)[2]	3.9	3.9
Market share (%)[3]	*45*	*45*

Our brands in the market:

1. Data for 2018 has been restated.
2. Available data as per June 2019.
3. Data for 2018 has been restated. Market data as per June 2019.

Slovakia	2018	2019
Power sales (TWh)	**6.0**	**6.0**
# of E.ON customers - power (m)[1]	**0.9**	**0.9**
# of customers total market - power (m)[2]	2.5	2.6
Market share (%)	*37*	*36*
Gas sales (TWh)	**2.7**	**3.0**
# of E.ON customers - gas (m)[1]	**0.1**	**0.1**
# of customers total market - gas (m)[2]	1.5	1.5
Market share (%)	*5*	*5*

Our brands in the market:

1. Retail/SME customer definition includes active metering points since 2018.
2. Market data on number of metering points from latest DSO annual reports.

Energy retail — Croatia & Slovenia

Croatia[1]	2018	2019
Power sales (TWh)	**0.9**	**1.1**
# of E.ON customers - power (m)	**0.2**	**0.2**
# of customers total market - power (m)	2.0	*2.0*
Market share (%)	*8*	*8*
Gas sales (TWh)	**0.7**	**1.0**
# of E.ON customers - gas (m)	**0.04**	**0.04**
# of customers total market - gas (m)	3.0	3.0
Market share (%)	*1*	*1*

Our brands in the market:

1. Customer Solution Business of Croatia.

Slovenia[1]	2018	2019
Power sales (TWh)	**0.2**	**0.2**
# of E.ON customers - power (m)	**0.03**	**0.04**
# of customers total market - power (m)	5.0	5.0
Market share (%)	*1*	*1*
Gas sales (TWh)	**0.01**	**0.01**
# of E.ON customers - gas (m)	**0.001**	**0.001**
# of customers total market - gas (m)	n/a	n/a
Market share (%)	n/a	n/a

Our brands in the market:

1. Customer Solution Business of Slovenia.

Decentral Energy Infrastructure — City Energy Solutions

City Supply		• **Large-scale city heating & cooling solutions** (e.g. in Malmö, Stockholm, Hamburg) • Growth opportunities through new connections to established district heating networks and new grids (e.g. Stockholm Högbytorp)	• Typical duration 20-40 years • Typical TCV[1] €0.1–1.0bn
City Quarter Solutions		• **Sustainable city districts** with integrated heating & cooling solutions based on maximum of renewables (e.g. Kronsberg, Hannover; Kidbrooke Village, London) • Growth opportunities through new-build and retrofit of large areas or districts in cities	• Typical duration 20-40 years • Typical TCV[1] €10-100m
Single Site Solutions		• Decentralized, sustainable **local energy solutions** (office buildings – e.g. Passauer Str., Berlin, shopping malls or hospitals) • Growth opportunities through new-build and retrofit of large single sites in cities	• Typical duration 10-20 years • Typical TCV[1] €1-20m

1. Total Contract Value.

Decentral Energy Infrastructure — B2B Solutions

Energy Generation Solutions		**Onsite Generation and Supply** • Offering of solutions for generating Power, Heat (LTHW, steam) and Cooling under different commercial models like PPA, leasing or DB(O) • Typical underlying technologies: CHP, boilers, Organic Rankine Circle (ORC), Solar PV, Ground Sourced Heat Pumps, Absorption and Compressor Chillers • Investigation of technologies without commercial maturity in B2B yet like Wind Turbines, Pyrolysis or Solvent Recovery
Energy Management Solutions		**Manage energy consumption – Faster and better decisions with effective Digital Solutions & Value Added services** • Optimization of energy and manufacturing processes with AI through partnership with Sight Machine for digital value-added services • Cost reduction via digital platform, e.g. by data-based steering of energy consumption • Remote optimization to enable energy savings and asset reliability • Lighting, HVAC, BEMS, Battery & Electrical as stand-alone or integrated solutions
Energy Consulting		**Designing and delivering integrated energy solutions** • Running an energy audit to identify savings potential • Optimizing of energy usage by designing a detailed action plan based on the insights with individual integrated energy solutions

New Growth Businesses — Future Energy Home

PV & Storage

- Market leading position in residential PV in Europe
- Over 30.000 new residential solar systems sold in 2019
- Growth above market across countries
- Increased installation capacities through acquisitions
- E.ON SolarCloud user base significantly increased in Germany and Czech

Home Heating

- Market leading position in several European markets
- Over 1.1m active service contracts and over 80.000 units sold
- Growth above market across countries
- Continuous portfolio development including launch of E.ON Branded Boiler in Italy, re-design of service and maintenance offerings
- Improved the customer experience with >50 bottom-up NPS scores

E.ON Home

- Launch of a secure, smart and efficient home energy management solution to help customers increase comfort at home and save energy
- Available in Germany, UK, Italy and Sweden

New Growth Businesses — E.ON e-Mobility

e-Mobility Solutions

- Business with strong growth above market level despite the early market stage
- Lighthouse project with BMW in Germany to install and operate >4k charging points, offer green power and charging solutions at home, working sites of BMW and on the road
- Continuous portfolio development of corporate fleet solutions with partner ALD, as well as charging at home offerings
- Co-operations with other OEMs, such as VW to develop mobile quick-chargers and Nissan to develop vehicle-to-grid solutions

Infrastructure

- >9,000 active public charge points across Europe
- Infrastructure in 11 European countries, market leading in Germany and Denmark

Decentral Energy Infrastructure in figures

Heat networks as part of City Energy Solutions	2018	2019
Germany		
Heat sales (TWh)[1]	3.2	6.6
Market share (%) [2]	*5*	*8*
# of connected households (k)[1]	140	324
Sweden		
Heat sales (TWh)[3]	5.1	5.0
Market share (%) [2]	*8*	*9*
# of connected households (k)	370	370
UK		
Heat sales (TWh)[4]	0.8	0.6
Market share (%)	*15*	*21*
# of connected households (k)	24	32
Total		
Heat sales (TWh)	9.1	12.2
# of connected households (k)	534	726

1. Value for 2019 including the innogy heating business.
2. Market share based on volumes sold. The market share for Germany is projected based on the E.ON figure.
3. Value for 2018 restated.
4. Value for 2019 affected by site closures in IG.

B2B Solutions	2018	2019
On-site Generation (incl. industrial generation) (MW)[1]	**1,318**	**1,258**
Thereof Germany[2]	701	594
Thereof UK	474	488
Thereof Italy	87	98
Thereof Belgium[2]	50	50
Thereof Russia	6	6
Energy Efficiency (# sites connected)[3]	**8,783**	**8,821**
Thereof Germany	232	182
Thereof UK	8,448	8,534
Thereof France	103	105
Flexibility (MW)	**463**	**833**
Thereof Germany	230	600
Thereof UK	233	233

1. Includes Czech Republic.
2. Incl. partially owned sites.
3. Definition for connected sites standardized across all markets.

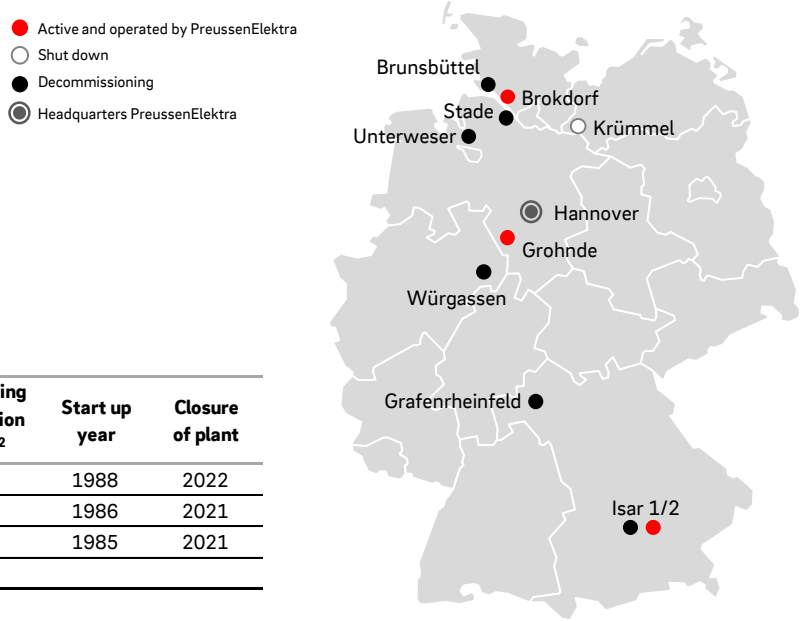
Content

Content

PreussenElektra – Business Overview

What we do:

- PreussenElektra covers our nuclear generation activities in Germany
- The German nuclear exit, which was decided in 2011, will result in the closure of our nuclear fleet by 2022
- 1,900 people work at PreussenElektra



German nuclear power plants active/in operation

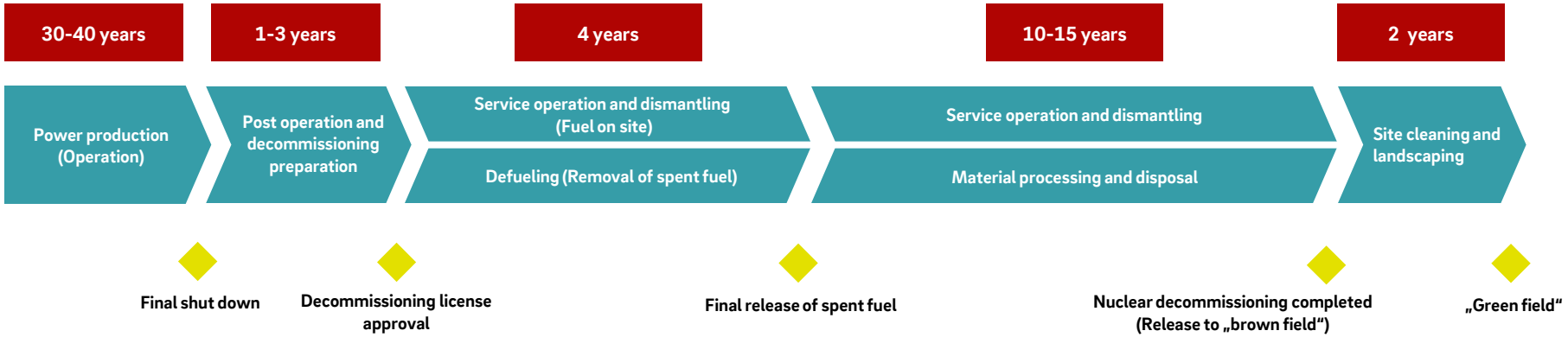
Power plant	Total capacity MW	E.ON share %	Pro rata MW	Accounting MW	Total production TWh	Pro rata production TWh[1]	Accounting production TWh[2]	Start up year	Closure of plant
Isar 2	1,410	75.0	1,058	1,058	11	9	9	1988	2022
Brokdorf	1,410	80.0	1,128	1,410	10	8	10	1986	2021
Grohnde	1,360	83.3	1,133	1,360	10	8	10	1985	2021
Total	**4,180**		**3,319**	**3,828**	**31**	**27**	**30**		

1. Totals include production from Gundremmingen C and Emsland before they were transferred to RWE as part of transaction.
2. Totals include production from Gundremmingen C before it was transferred to RWE as part of transaction.

PreussenElektra – Decommissioning (Process overview)

Decommissioning of a nuclear power plant[1]

Shut down phases



1. Generic view, site specific differences likely.

PreussenElektra – Financial Highlights

Financials

€ m	2018	2019
Revenues	1,370	1,174
Adjusted EBITDA[1]	556	543
Adjusted EBIT[1]	399	292
Investments (cash-effective)[2]	15	148

Nuclear power sales (TWh)	2018	2019
Owned generation (accounting view)	31.2	30.1
Purchases	8.1	2.5
thereof jointly owned power plants (E.ON has minority interest)	1.4	0.9
thereof third parties (long term contracts)	6.7	1.6
Total power procurement	39.3	32.6
Station use, line loss	-0.1	-0.1
Power sales	39.2	32.5

1. Adjusted for non operating effects.
2. Pro forma.

PreussenElektra – Decommissioning (site overview)

Preussen Elektra

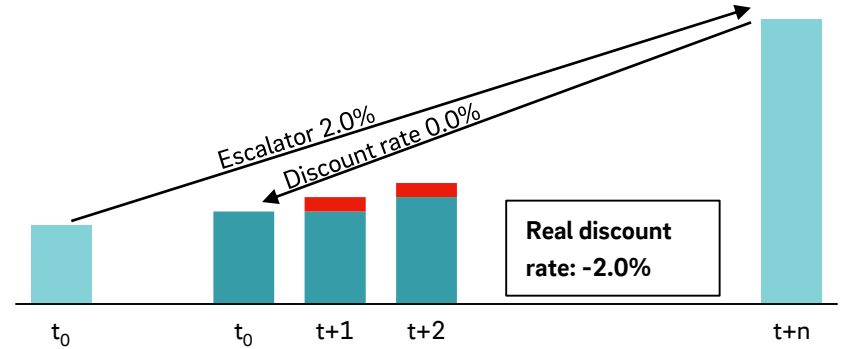
German nuclear power plants shut down

	Capacity MW	E.ON share %	Shut down year	Start of decommissioning	Current phase	Progress of decommissioning
E.ON as operator						
Würgassen	670	100	1995	1997	Decommissioning	●
Stade	640	67	2003	2005	Decommissioning	●
Isar 1	878	100	2011	2017	Decommissioning	◔
Grafenrheinfeld	1,275	100	2015	2018	Decommissioning	◔
Unterweser	1,345	100	2011	2018	Decommissioning	◔
E.ON as minority shareholder						
Brunsbüttel	771	33	2011	2018	Decommissioning	◔
Krümmel	1,364	50	2011	2020	Shut down	◔

◔ Shut down (first step in decommissioning process) ● Decommissioning in final phase

PreussenElektra – Decommissioning (provisions mechanics)

Schematic illustration of provision building at E.ON[1]



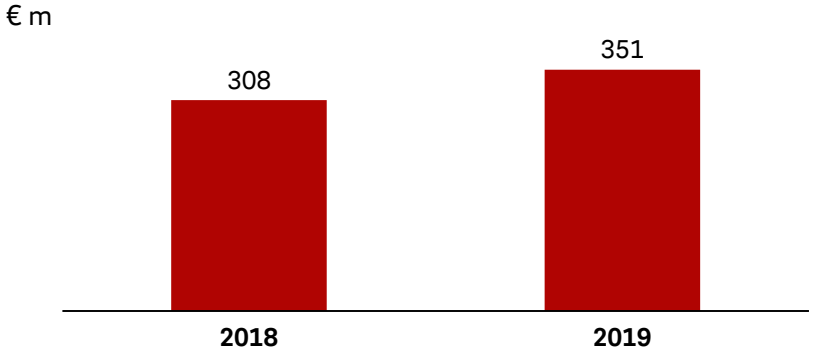
Costs for decommissioning

Decommissioning provisions

Accretion[2]

Current cost approach[3] used for AROs[4] that apply negative real interest rates

Provision utilization for German nuclear



1. Disregarding any provision utilization in the decommissioning provision.
2. Currently zero according to discount rate.
3. Actual amount of the obligations as per year-end 2019 excl. effects of discounting and cost increases.
4. Asset Retirement Obligation.

Content

Generation Turkey — Financial overview

Enerjisa Üretim (Generation & Trading)

Enerjisa Üretim (generation & trading)[1]	2018	2019
Revenues (TRL m)	**5,253**	**6,559**
EBITDA (TRL m)[2]	**1,386**	**2,404**
Net Income (TRL m)	**17**	**1,172**
E.ON share of 50% (€ m)[3]	**1**	**93**
Acquisition related depreciation charges (run rate)	-18	-19
FX hedges and other	0	0
Equity result (€ m)	**-17**	**74**

1. 100% Enerjisa Üretim view.
2. Includes one-offs.
3. Quarter end FX spot rates applied.

Generation Turkey — Asset overview (1)

Assets Enerjisa Üretim[1]						
Power plant	**Type**	**Generation capacity (MW)**	**Production (GWh)**	**Start-up year**	**Revenue stream**	**Remuneration per MWh**
In operation						
Bandırma-I	Gas	936	2,512	2010	Market prices; capacity mechanism[2]	
Bandırma-II	Gas	607	2,441	2016	Market prices; capacity mechanism[2]	
Kentsa	Gas	40	0	1997		
Tufanbeyli	Coal/Lignite	450	2,709	2016	Market prices; capacity mechanism[2]; lignite incentive[3]	TRL301
Menge	Hydro	89	207	2012	FIT[4]	$73
Köprü	Hydro	156	444	2013	FIT	$73
Kuşakli	Hydro	20	48	2013	FIT	$73
Dağdelen	Hydro	8	35	2013	FIT	$73
Kandil	Hydro	208	619	2013	FIT	$73
Sarıgüzel	Hydro	103	353	2013	FIT	$73
Hacınınoğlu	Hydro	142	423	2011	FIT	$73

1. All assets are 100% owned by Enerjisa Üretim.
2. Capacity mechanism implemented starting 2018. Budget for allocation & strike price will be set quarterly by state-owned transmission company.
3. 7-years PPA starting in 2018 with state-owned wholesaler (TETAS). For 2020, starting price is at 322TL/MWh indexed to inflation & USD/TRL development for 2.1TWh1. A corridor between 50$ and 55$/MWh is applied.
4. Feed-in-tariff.

Generation Turkey — Asset overview (2)

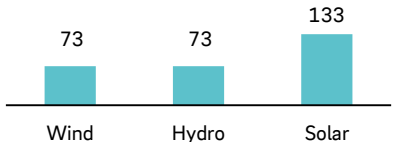
Assets Enerjisa Üretim[1]						
Power plant	**Type**	**Generation capacity (MW)**	**Production (GWh)**	**Start-up year**	**Revenue stream**	**Remuneration USD/MWh**
Çambaşı	Hydro	44	127	2013	FIT	$73
Kavşakbendi	Hydro	191	785	2014	FIT	$73
Arkun	Hydro	245	628	2014	FIT	$73
Yamanlı II	Hydro	82	342	2016	FIT	$73
Doğançay	Hydro	62	174	2017	FIT	$73
Çanakkale	Wind	30	80	2011	FIT	$73
Dağpazarı	Wind	39	101	2012	FIT	$73
Bares	Wind	143	491	2013	FIT	$73
Karabük	Solar	7	10	2017	FIT	$133
Bandırma	Solar	2	3	2017	FIT	$133
Total in operation		**3,602**	**12,532**			

1. All assets are 100% owned by Enerjisa Üretim.

Generation Turkey — Regulatory Environment

Renewables (Feed in Tariff)

USD denominated (USD/MWh)



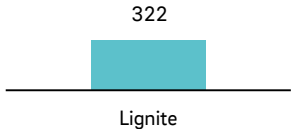
Source: EMRA[1]

Incentive framework

- Stable cash flows from USD-denominated feed-in tariffs (for 10 years)
- Annual flexibility to opt for either feed in tariffs or market prices
- Higher feed in tariff if for power plant parts manufactured in Turkey
- Renewables additionally benefit from participation in the balancing market

Local lignite incentive

TRL denominated - inflation and FX indexed with dollar denominated corridor (TRL/MWh)



2020 starting price,
Source: EMRA[1]

Incentive framework

- Lignite incentive set up in 2016 to foster local energy
- 7-years PPA starting in 2018 with state-owned wholesaler (TETAS). For 2020, starting price is at 322TL/MWh indexed to inflation & USD/TRL development for 2.1TWh[2]. A corridor between 50$ and 55$/MWh is applied.
- Stable cash flows from TRL-denominated incentive with a USD denominated corridor.

Capacity mechanism

Gas & local lignite power plants

Incentive framework

- Capacity mechanism starting from 2018.
- Allocation of budget and strike set quarterly. Local sources are prioritized.

Average power prices in Turkey[3]

2018: 231 TRL/MWh → 49 USD/MWh[4]

2019: 260 TRL/MWh → 46 USD/MWh[4]

1. Energy Market Regulatory Authority (Turkey).
2. TETAS can increase volume up to 40%.
3. Sources: EPIAS.
4. Converted at a TRL/USD rate of and 4.7 (average) for 2018 and 5.65 (average) for 2019.

Content

Relevant at-equity participations of E.ON

Company	Description	E.ON share[1] %	At equity contribution to E.ON proforma result 2019 (€ m)
Energy Networks			
Germany			
RheinEnergie AG	Municipal utility (power, gas, heat, water) in the city of Cologne	20.0	34.2
Dortmunder Energie- und Wasserversorgung GmbH	Municipal utility (power, gas, heat, water) bzw. (energy, water) in the city of Dortmund	39.9	15.4
Städtische Werke Magdeburg GmbH & Co. KG	Municipal utility (energy, water) in the city of Magdeburg	26.7	12.4
Gasag Berliner Gaswerke Aktiengesellschaft	Utility (power, gas, energy services) in the city of Berlin	36.9	10.8
Rhein-Main-Donau GmbH	Utility (water) in Landshut	22.5	10.2
REWAG Regensburger Energie- und Wasserversorgung	Municipal utility (energy, water) in the city of Regensburg	35.5	8.4
AVU Aktiengesellschaft für Versorgungs-Unternehmen	Utility (energy, water) in Ennepe-Ruhr-Kreis	50.0	8.0
CEE&Turkey			
Západoslovenská energetika a.s.	Integrated utility in Slovakia (distribution and retail)	49.0	55.5
Enerjisa Enerji A.Ş.	Integrated utility in Turkey (distribution and retail)	40.0	59.8
Customer Solutions			
ŠKO-ENERGO FIN, s.r.o.	Electricity generation company (main customer: Škoda Auto)	42.5	4.9
Kemkens B.V.	Energy service company	49.0	4.2
Non-core business (PreussenElektra)			
Uranit GmbH[2]	Uranit GmbH is a holding company holding 33% of Urenco Ltd. Urenco Ltd. is an international company active in uranium mining, conversion, enrichment and fabrication.	50.0	49.0
Enerjisa Üretim	Integrated utility in Turkey (generation)	50.0	74.2

1. Direct and indirect share.
2. Uranit GmbH is a joint venture between RWE AG and E.ON SE.

E.ON's Financials[1] — 2019

Adjusted EBITDA[1]

€ m	FY 2019[2]
Energy Networks	5,359
Germany	3,717
Sweden	692
CEE & Turkey	950
Customer Solutions	1,124
Benelux	192
Germany	646
UK	-10
Other	296
Corporate Functions/Other	-203
Non-core business	617
Total	**6,897**

Adjusted EBIT[1]

€ m	FY 2019[2]
Energy Networks	3,582
Germany	2,438
Sweden	539
CEE & Turkey	605
Customer Solutions	526
Benelux	125
Germany	484
UK	-180
Other	97
Corporate Functions/Other	-340
Non-core business	366
Total	**4,134**

1. Adjusted for non operating effects.
2. Pro forma.

E.ON's Financials[1] — 2019

OCFbIT

€ m	FY 2019[2]
Energy Networks	4,255
Germany	2,455
Sweden	718
CEE & Turkey	1,082
Customer Solutions	378
Benelux	84
Germany	71
UK	128
Other	95
Corporate Functions/Other	-657
Non-core business	313
Total	**4,289**

Investments (cash-effective)

€ m	FY 2019[2]
Energy Networks	3,149
Germany	2,254
Sweden	313
CEE & Turkey	582
Customer Solutions	1,008
Benelux	90
Germany	226
UK	211
Other	481
Corporate Functions/Other	130
Non-core business	148
Total	**4,435**

1. Adjusted for non operating effects.
2. Pro forma.

E.ON's Financials[1] — 2019

At-equity contribution to adjusted EBITDA/EBIT[1]

€ m	FY 2019[2]
Energy Networks	349
Germany	219
Sweden	0
CEE & Turkey	130
Customer Solutions	22
Benelux	4
Germany	6
UK	0
Other	12
Corporate Functions/Other	70
Consolidation	-1
Non-core business	125
Total	**565**

Profit & Loss

€ m	FY 2019[2]
Adjusted EBITDA[1]	**6,897**
Depreciation/amortization recognized in Adjusted EBIT	-2,763
Adjusted EBIT[1]	**4,134**
Economic interest expense (net)	-1,252
Adjusted EBT[1]	**2,882**
Income Taxes on Adjusted EBT	-760
% of Adjusted EBT	*26%*
Non-controlling interest on results of operations	-484
Adjusted Net Income[1]	**1,638**

1. Adjusted for non operating effects.
2. Pro forma.

Appendix

Facts and Figures 2020

Glossary & List of Abbreviations

AI	Artificial Intelligence
ARO	Asset Retirement Obligation
B2B	Business to Business
B2C	Business to Consumer
BEMS	Building Energy Management System
Benelux	Belgium, Luxemburg and The Netherlands
Capex	Capital Expenditures
CEE	Central and Eastern Europe
CES	City Energy Solutions
CHP	Combined Heat and Power
CPI	Consumer Price Index
CS	Customer Solutions
CZK	Czech Koruna
D&A	Depreciation and Amortization
DB(O)	Design, Build & Operate
DSO	Distribution System Operator
EBIT	Earnings before interest and taxes
EBITDA	Earnings before interest, taxes, depreciation and amortization
EMRA	Energy Market Regulatory Authority (Turkey)
FIT	Feed-in-tariff
FX	Foreign Exchange
GW	Gigawatt
GWh	Gigawatt hours
hrs	hours
HS&E	Health, Safety and Environment
HUF	Hungarian Forint
HV	High Voltage
IT	Information Technology
JV	Joint Venture
km	Kilometer
LTHW	Low Temperature Hot Water Boilers
LV	Low Voltage
MV	Medium Voltage
MW	Megawatt
NPS	Net Promoter Score
O&M	Operation & Management
OEM	Original Equipment Manufacturer
Opex	Operating Expenditures
ORC	Organic Rankine Circle
p.a.	per annum
PI	Price Index
PLN	Polish Zloty
PPA	Power Purchase Agreement
PV	Photovoltaic
RAB	Regulated Asset Base
RES	Renewables
RoE	Return on Equity
RON	Romanian Leu
RPI	Retail Price Index
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SME	Small and medium-sized enterprises
TCV	Total Contract Value
Totex	Total allowed cost base
TRL	Turkish Lira
TSO	Transmission System Operator
TWh	Terawatt hours
UK	United Kingdom
USP	Universal Service Provider
VPP	Virtual Power Plant
WACC	Weighted Average Cost of Capital
YE	Year End

Disclaimer

This presentation contains information relating to E.ON Group ("E.ON") that must not be relied upon for any purpose and may not be redistributed, reproduced, published, or passed on to any other person or used in whole or in part for any other purpose. By accessing this document you agree to abide by the limitations set out in this document as well as any limitations set out on the webpage of E.ON SE on which this presentation has been made available.

This document is being presented solely for informational purposes. It should not be treated as giving investment advice, nor is it intended to provide the basis for any evaluation or any securities and should not be considered as a recommendation that any person should purchase, hold or dispose of any shares or other securities.

The information contained in this presentation may comprise financial and similar information which is neither audited nor reviewed and should be considered preliminary and subject to change.

Some of the information presented herein is based on statements by third parties. No representation or warranty, express or implied, is made as to, and no reliance should be placed on, the fairness, accuracy, completeness or correctness of this information or any other information or opinions contained herein, for any purpose whatsoever.

This presentation may contain forward-looking statements based on current assumptions and forecasts made by E.ON 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 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.

Neither E.ON nor any respective agents of E.ON undertake any obligation to provide the recipient with access to any additional information or to update this presentation or any information or to correct any inaccuracies in any such information.

Certain numerical data, financial information and market data (including percentages) in this presentation have been rounded according to established commercial standards. As a result, the aggregate amounts (sum totals or interim totals or differences or if numbers are put in relation) in this presentation may not correspond in all cases to the amounts contained in the underlying (unrounded) figures appearing in the consolidated financial statements. Furthermore, in tables and charts, these rounded figures may not add up exactly to the totals contained in the respective tables and charts.

Energy for generations

LEADING THE WAY TO A BRIGHTER FUTURE

ESB

ESB is a leading Irish vertically integrated utility operating across the electricity market, from generation through transmission and distribution, to supply of customers, with an expanding presence in Great Britain's generation and supply markets. In addition, we extract further value at certain points along this chain by supplying gas and using our networks to carry fibre for telecommunications.

Strategy Innovation and Transformation

Strategy, Innovation and Transformation's purpose is to set and manage the strategic direction of ESB, to influence energy policy and regulation and drive business transformation across ESB group to lead the transition to a low carbon future.

We will continue to work collaboratively across ESB to develop and implement our Strategy, drive cross-company transformation projects and incubate new cross value chain innovations from concept to business case before releasing to the business to scale

Generation Trading

"ESB develops, operates and trades the output of ESB's electricity generation assets. The portfolio consists of 5,564 MW of thermal and renewable generation assets across ROI, NI and GB, with a further 158 MW under construction

Networks

ESB builds, manages and maintains the transmission and distribution network in ROI and NI. Over 229,000 KM of Network.

Customer Solutions

Supplying electricity, gas and energy services to customers in ROI, NI and GB.

Engineering and Major Projects

To deliver the major projects and engineering required for ESB to lead the transition to reliable, affordable, low-carbon energy both at home and internationally""

Enterprise Services

Enterprise Services is responsible for providing business critical processes and services to the rest of ESB Group through its two delivery arms, Business Operations and IT Delivery; and responsible for leading the digital transformation of ESB Group, and ensuring excellent IT system availability including management of cyber security risks.

Strategic Framework

Our Purpose

Is to 'Create a **Brighter Future** for the customers and communities we serve, by leading the transition to reliable, affordable, low-carbon energy.'

Our Objectives

PUT CUSTOMERS' CURRENT AND FUTURE NEEDS AT THE CENTRE OF ALL OUR ACTIVITIES

PRODUCE, CONNECT AND DELIVER CLEAN, SECURE AND AFFORDABLE ENERGY

DEVELOP ENERGY SERVICES TO MEET EVOLVING MARKET NEEEDS

GROW THE BUSINESS WHILE MAINAINING ESB'S FINANCIAL STRENGTH

DELIVER A HIGH-PERFORMANCE CULTURE THAT SUPPORTS INNOVATION AND COLLABORATION

Through our diverse businesses across the Republic of Ireland, Northern Ireland and Great Britain we aim to meet customer energy needs by bringing the best of our capabilities together to deliver innovative and value driven solutions for a low-carbon world

Business Environment Factors

Business environment factors that significantly impact on the ESB Strategy

Climate and Energy Policy

The Republic of Ireland (ROI) and the UK have set targets for the proportion of electricity to be produced from renewable sources of 40% and 30%, respectively by 2020. progressive decarbonisation of its energy system, targeting 80% reduction by 2050

Advances in Technology

Technological advances will enable a greater level of electricity production, storage and control, either directly by customers, or by service providers controlling and managing energy demand on their behalf.

Changing Customer Preferences

Customer's ongoing expectations regarding secure, affordable and increasingly low-carbon energy.

Emergence of New Business Models

ESB sees advances in technology, energy and regulatory policy combined with changing customer preferences giving rise to a range of new business models.

Brexit

Notwithstanding the uncertainty related to Brexit the UK energy sector continues to provide a pipeline of growth opportunities in proximate markets

Innovation Priorities

Generation Trading

- New Low Carbon Assets
- Asset Optimisation
- Autonomous Trading
- Data Analytics
- System Services

Networks

- Electrification of Heat & Transport
- Flexibility on our Networks
- Operational Excellence
- Connecting Renewables
- Asset Optimisation
- Network Resilience

Customer Solutions

- Home Care
- Mobility
- Connected/Smart Homes
- Distributed Solar
- Energy Efficiency

Engineering and Major Projects

- Battery Storage
- Flexible Power Generation
- Biomass
- Preventive and Predictive Analytics

Blockchain | Machine Learning Artificial Intelligence | Hydrogen | IoT | Advanced Analytics | Cyber Security


origin
CHINA
INDONESIA
AUSTRALIA
Indian Ocean

One of Australia's leading energy companies

Australia's leading energy retailer

4.2 million gas, electricity and LPG customer accounts

Ensuring domestic gas supply

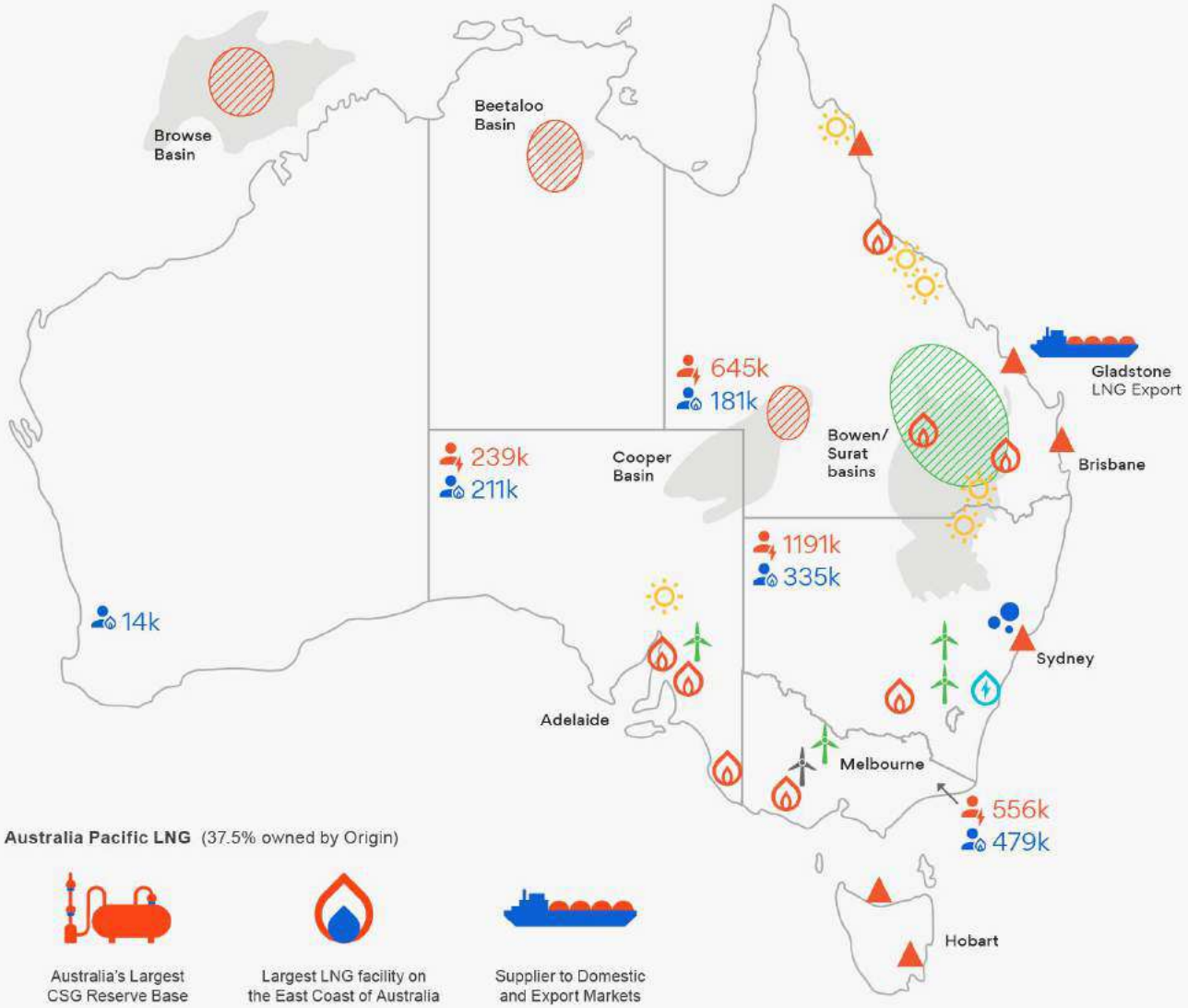
Delivering around 30% of all gas on the east coast with APLNG

Driving future energy innovation

Investing in new technology, start-ups and future fuels

Powering Australia

Almost 7,500 MW of gas, coal and renewables generation and storage across the east coast



Where we operate

Generation
- Gas
- Pumped hydro
- Solar (contracted)
- Wind (contracted)
- Coal
- Under construction

- LPG seaboard terminal

- Electricity customer accounts
- Natural gas customer accounts

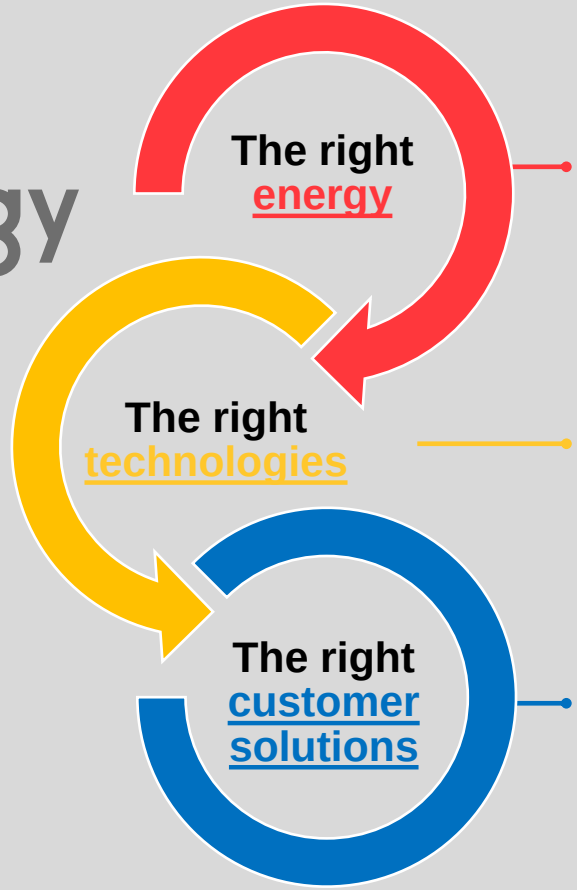
Exploration & production acreage
- Origin upstream acreage
- APLNG upstream acreage
- Production facility
- APLNG pipeline

Origin also has a presence in California's **Silicon Valley** to better connect us to the global epicentre of digital innovation, and an LPG business throughout the Pacific islands

Strategy to deliver value in the future energy world

Connecting customers to the energy and technologies of the future

good energy



- Accelerate towards clean energy
- Low cost operator developing & growing gas resources
- Embrace a decentralised and digital future
- Leading customer experience and solutions

Based on our strategic priorities we are looking for innovative ideas in the following areas

Accelerate towards clean energy

- ✓ Innovations that improve the integration of renewables into the existing transmission / distribution network and market structures
- ✓ Integrated inverter / battery solutions for business customers
- ✓ Solutions for the integration of behind the meter assets, compatibility with BMS systems and major asset brands

Embrace a decentralised and digital future

- ✓ Data and algorithms to analyse competitor behaviour and optimise our energy trading portfolio accordingly
- ✓ Propensity modelling of customer take up of batteries and electric vehicles
- ✓ Low cost hardware for customer homes that send sensor data

Leading customer experience and solutions

- ✓ How might non-tech-savvy consumers make their home smart and connected
- ✓ How can energy companies build deep engagement and trust with customers?
- ✓ Data Driven Business Models

Open Innovation

- ✓ **New ideas that we haven't thought of !**

Broad Categories of Interest

Customer Solutions / Experience B2B & B2C

Energy Storage

Energy Management

Clean Energy

Energy Efficiency

Mobility

IoT

AI / Machine Learning

Connectivity/Communication Solutions

Origin is open for innovation business

Energy markets around the world are transforming and Australia is no exception

The continued penetration of distributed assets, combined with the rise of IoT devices, are changing the way our customers use energy

Origin believes significant opportunity exists in the transformative impact of decarbonisation, decentralisation and digitisation on the energy sector

Innovation is at the heart of seizing this opportunity

- ✓ We have been **scouting** and **evaluating** hundreds of start ups across a wide range of areas
- ✓ We have been **trialling** a number of technologies and solutions across a range of areas - smart home, IoT devices, storage, demand response, virtual power plants, energy management, AI/machine learning
- ✓ We have **partnered** with and **invested** in a number of start ups in the areas of energy management, renewables, storage, digital rights management, distributed transactions
- ✓ We have a mandate to continue these activities in order to find the right technologies and solutions for our customers


SPgroup
A leading energy utility company in
Singapore & Asia Pacific

Business Pillars

Electricity & Gas Transmission and Distribution

Among the world's highest reliability Average Outage Duration (Yr 2019 SAIDI 1.06 min)

Metering & Billing Service

Convenience to customers
One click, one stop service

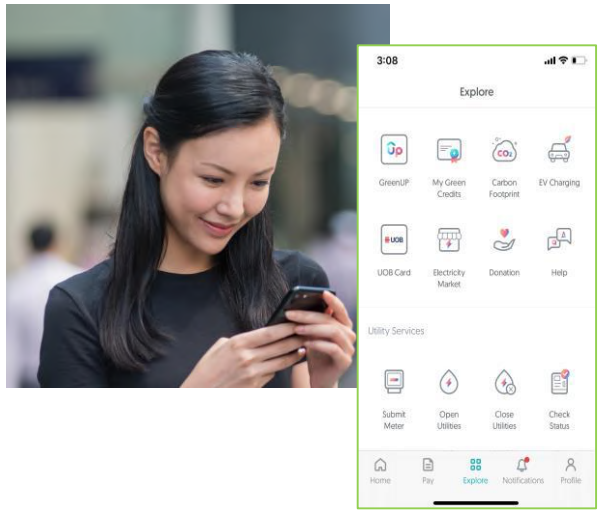
Poweringthenation.sg

Sustainable Energy Solutions

Low Carbon, Smart Energy Solutions; Operating the world's largest underground district cooling network

Innovation & Sustainability

Digitalization



Customer App helping customers save energy and money, and to adopt green and sustainable behaviour

EV Charging

Deploying Singapore's largest public EV charging network

REC Marketplace

One of the world's first blockchain-powered renewable energy certificate marketplace

Poweringthenation.sg

Innovation & Sustainability

PV + ESS

Largest solar rooftop in Singapore with AI-powered digital system

Urban Microgrid

Singapore's first urban university campus micro-grid: targets zero-emission

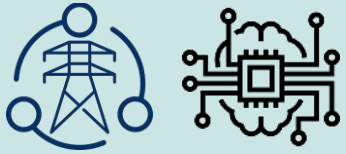
Smart Town

Developing Singapore’s first smart energy town in Tengah

Poweringthenation.sg

Areas of Interest

Smart Grid



Sustainable Energy Solutions

Smart Metering

Cooling Technologies

E-Mobility

Clean Energy/ Distributed Energy Resources

Energy Efficiency

Energy Storage

Low Carbon Solutions

Digital Technologies

AI, Machine Learning, Software

Poweringthenation.sg


SPgroup

1. The largest utility in Japan

Generates
1/3
Power in Japan

TEPCO
Tokyo Electric Power Company Holdings

Generation
CHUBU Electric Power
TEPCO Fuel & Power
JERA
Energy for a New Era

T&D
TEPCO Power Grid

Retail
TEPCO Energy Partner

¥5 Trillion
In Sales

29 Million
Customers

Approx. **40,000** km

Total: **1,614** locations
underground: **199** locations

About **360,000** km

Transmission + **Substation** + **Distribution**

2. “5-D’s”

TEPCO believes that the “5-D’s” (the decreasing population, decarbonization, decentralization, deregulation and digitalization) driving social change in Japan present us with an opportunity to evolve so as to be prepared for the age of Utility 3.0* where not only existing energy operators, but also new operators that have digital technology, such as IoT, etc., will cooperate to provide comprehensive social infrastructure.

**Utility 3.0 is the predicted future state of the energy industry as seen based on various social changes and technological innovation.*

Decreasing population

2050　50% decrease in populations in over 60% of regions (depopulation)

2065　Population in Japan: 88 million people

Decarbonization

Paris Accord (25% CO_2 reduction by 2030)

Cabinet Decision (80% CO_2 reduction by 2050) *2013 levels

Decentralization

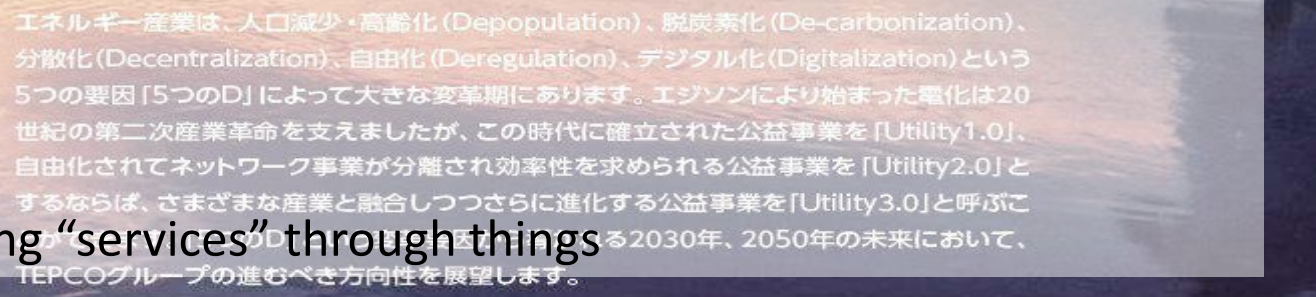
Decentralized power sources, such as solar and wind power, and the spread of energy-storage technology, such as electric vehicles and heat pump water heaters

Deregulation

Electricity system reforms, gas system reforms

Digitalization

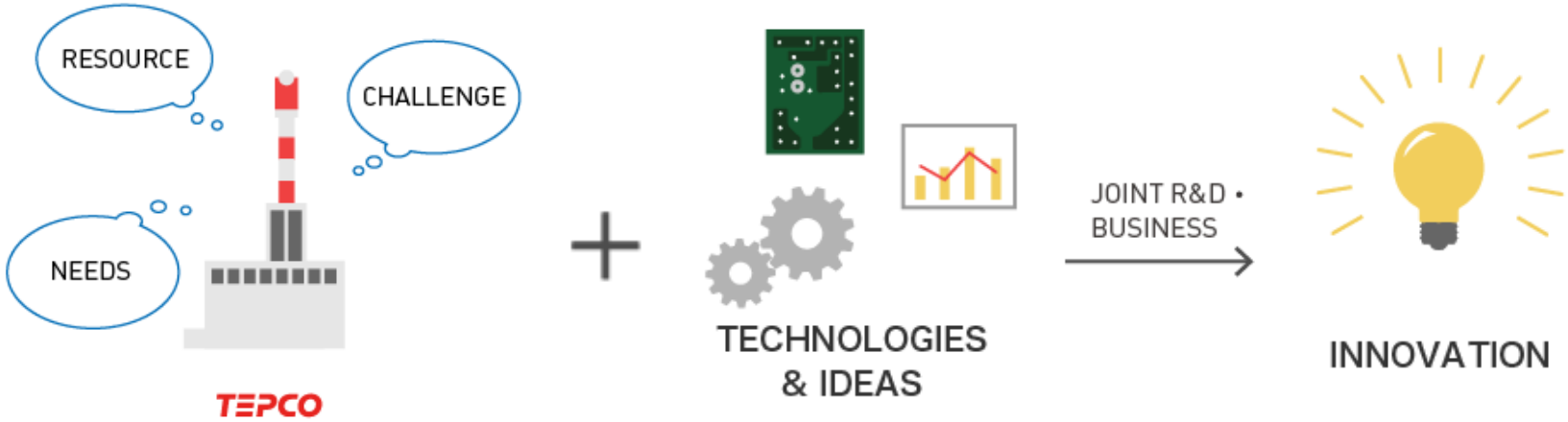
Business of providing “things” → Business of providing “services” through things



3. KEY GOALS

- **Performance improvement**
- **Cost reduction**
- **New revenues / solutions**

TEPCO is an extremely large utility that is involved in a wide range of operations, and that has a great number of customers and assets. So even if the impact for each customer or asset is limited, by working with us the overall impact will become much greater. We have high expectations of adopting your technologies and ideas to help us obtain new revenue streams over the next several years.




FREE
ELECTRONS