

**MVV ENERGIE**  
**ENERGISING THE FUTURE**

**ENERGY FOR  
OUR CUSTOMERS:  
DECENTRALISED  
AND EFFICIENT**

**FACT BOOK**  
**CONSOLIDATED FINANCIAL STATEMENTS 2013/14 PURSUANT TO IFRS**  
**11 DECEMBER 2014**



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**KEY FINANCIAL DATA FOR  
THE 2013/14 FINANCIAL YEAR**

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# 2013/14 financial year at a glance

- ▶ **Sales reduce from Euro 4.04 billion to Euro 3.79 billion**
- ▶ **Adjusted EBIT of Euro 173 million in line with forecast**
- ▶ **At Euro 321 million, investments remain high following record previous year`s figure**
- ▶ **More than half of electricity in generated from renewable energies and in combined heat and power (CHP) generation**
- ▶ **Annual net income of Euro 85 million and earnings per share of Euro 1.29 both unchanged on previous year**
- ▶ **Proposed dividend of Euro 0.90 per share**

# Key figures of the MVV Energie Group for the 2013/14 financial year – Adjusted

in Euro million	2013/14	2012/13	% change
Sales excluding energy taxes	<b>3 793</b>	4 044	-6
Adjusted EBITDA <sup>1, 2</sup>	<b>338</b>	376	-10
Adjusted EBIT <sup>1, 2</sup>	<b>173</b>	208	-17
Adjusted EBT <sup>1, 2</sup>	<b>130</b>	143	-9
Adjusted annual net income <sup>1, 2</sup>	<b>92</b>	101	-9
Adjusted annual net income after minority interests <sup>1, 2</sup>	<b>85</b>	85	0
Adjusted earnings per share <sup>1, 2</sup> (Euro)	<b>1.29</b>	1.29	0
Cash flow from operating activities <sup>2</sup>	<b>418</b>	372	+12

<sup>1</sup> excluding non-operating financial derivative measurement items, excluding structural adjustment for part-time early retirement, excluding restructuring expenses and including interest income from finance leases

<sup>2</sup> previous year`s figures adjusted

# Sales excluding energy taxes by reporting segments in the 2013/14 financial year

in Euro million

	2013/14	2012/13	% change
Generation and Infrastructure	403	390	+3
Trading and Portfolio Management	910	1 054	-14
Sales and Services	2 278	2 356	-3
Strategic Investments	198	243	-19
Other Activities	4	1	>+100
Total	<u>3 793</u>	<u>4 044</u>	-6

# Adjusted EBIT by reporting segments in the 2013/14 financial year

in Euro million

	2013/14	2012/13	+/- change
Generation and Infrastructure	124	149	-25
Trading and Portfolio Management	-22	-16	-6
Sales and Services	31	40	-9
Strategic Investments	31	32	-1
Other Activities <sup>1</sup>	9	3	+6
Total	<u>173</u>	<u>208</u>	<u>-35</u>

<sup>1</sup> previous year`s figure adjusted

# Reconciliation of EBIT (income statement) with adjusted EBIT in the 2013/14 financial year

in Euro million	2013/14	2012/13	+/- change
EBIT as reported in income statement	191	210	-19
Financial derivative measurement items	-24	+3	-27
Structural adjustment for part-time early retirement <sup>1</sup>	+2	+2	0
Restructuring expenses <sup>1</sup>	–	-11	+11
Interest income from finance leases	+4	+4	0
Adjusted EBIT	<u>173</u>	<u>208</u>	<u>-35</u>

<sup>1</sup> previous year`s figures adjusted



# Key factors in the 2013/14 financial year affecting year-on-year adjusted EBIT performance

## Positive factors

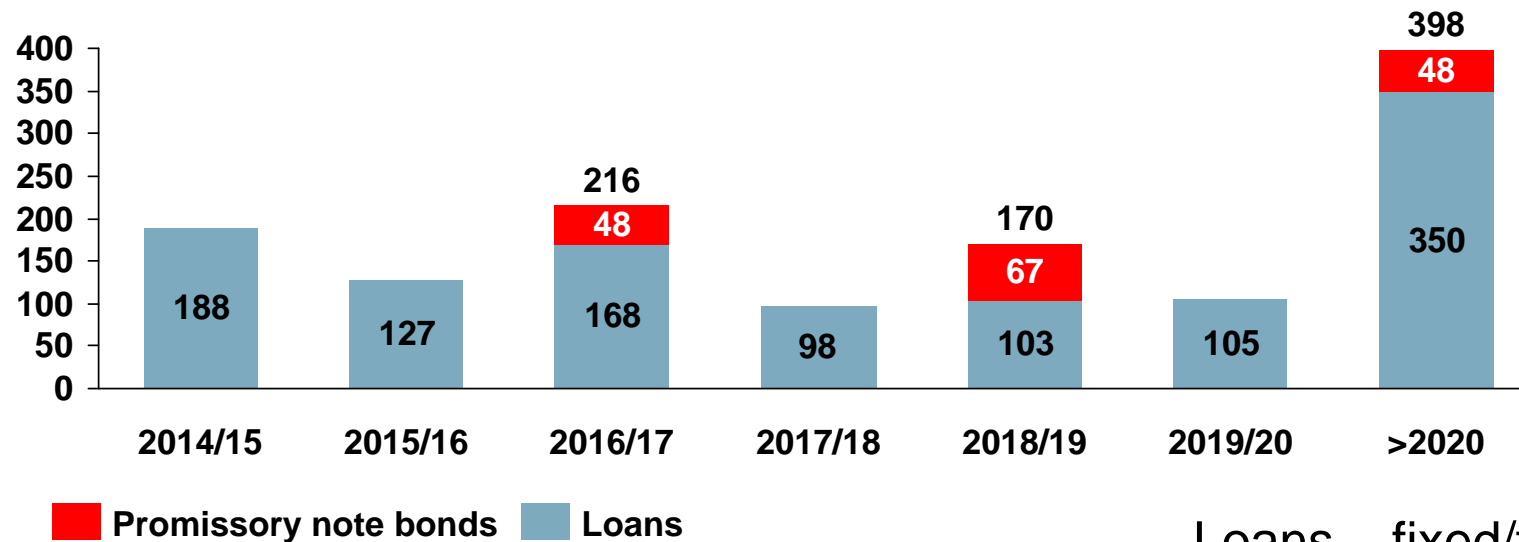
- ▶ Expansion of renewable energy generation portfolio
- ▶ Special items at MVV Enamic subgroup
- ▶ Loss of charge from downtime due to turbine damage in environmental business in previous year
- ▶ Cost discipline

## Negative factors

- ▶ Significantly mild weather conditions
- ▶ Continuing low clean dark spread (CDS)
- ▶ Since January 2013, CO<sub>2</sub> emission allowances previously allocated free of charge to be auctioned
- ▶ Lower waste prices

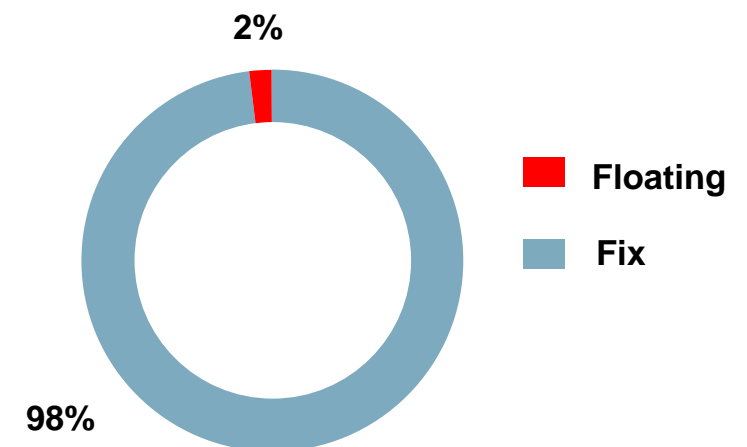
# MVV Energie has a solid financing profile

## Repayment profile in Euro million

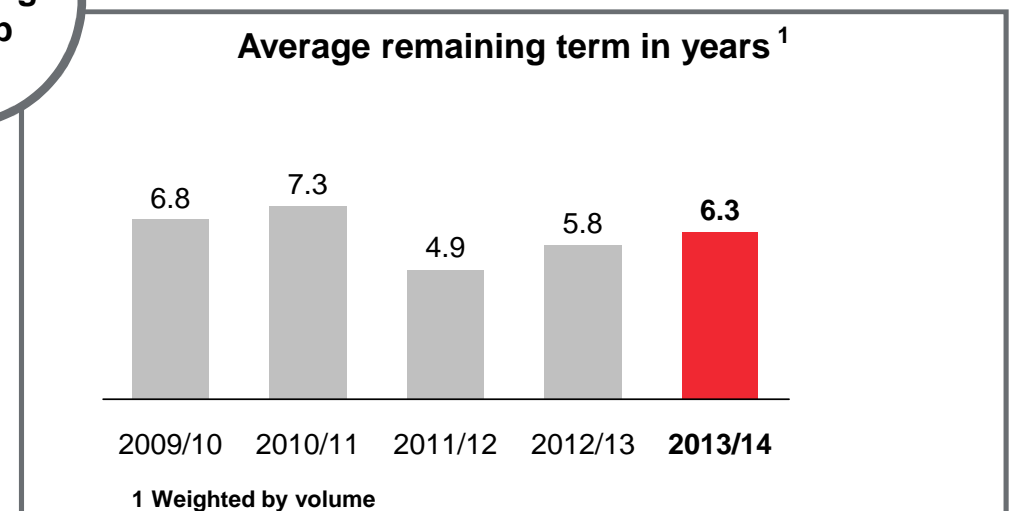
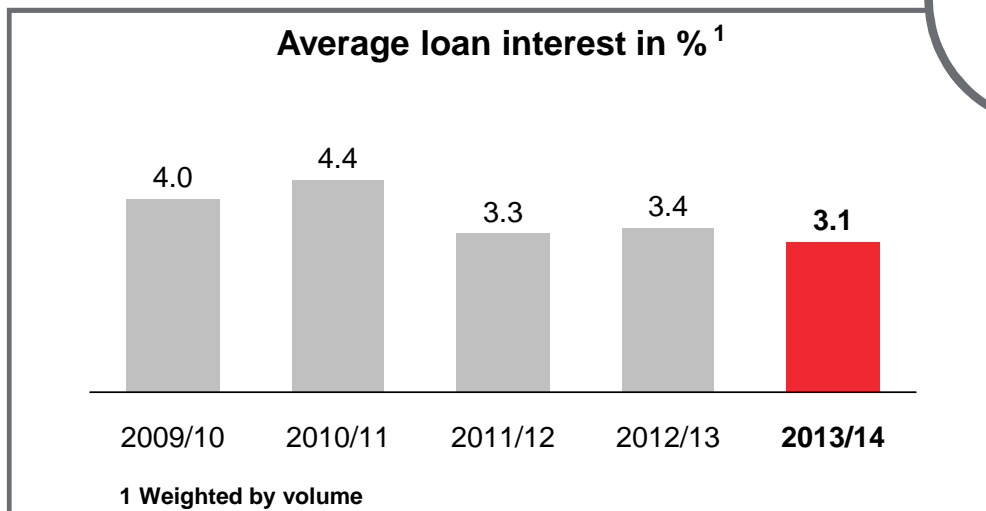
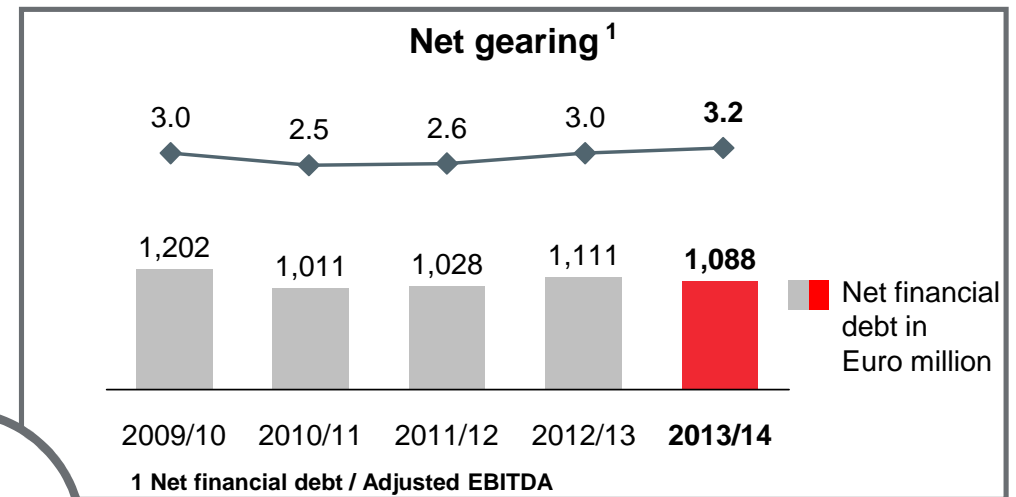
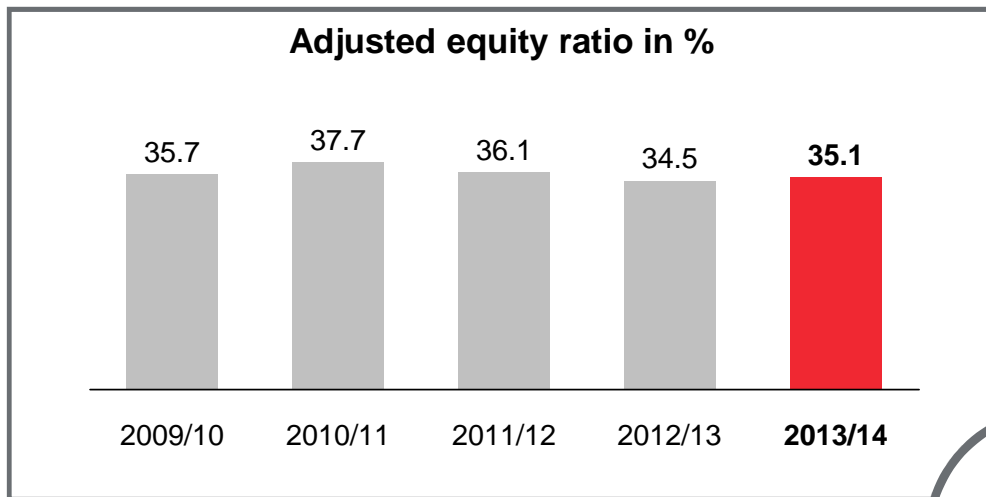


- ▶ Well-balanced maturity profile
- ▶ Long-term financing for investments, i.e. congruent terms
- ▶ High share of fixed interest agreements secures favourable rates on long-term basis

## Loans – fixed/floating shares



# Development in key financial figures



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# ENERGY MARKET TRANSFORMATION AND RENEWABLE ENERGIES

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# The energy industry faces fundamental transformation

## Old world



### Energy supply

- ▶ Central, conventional large power plants
- ▶ Central system management
- ▶ Consumers or points of consumption

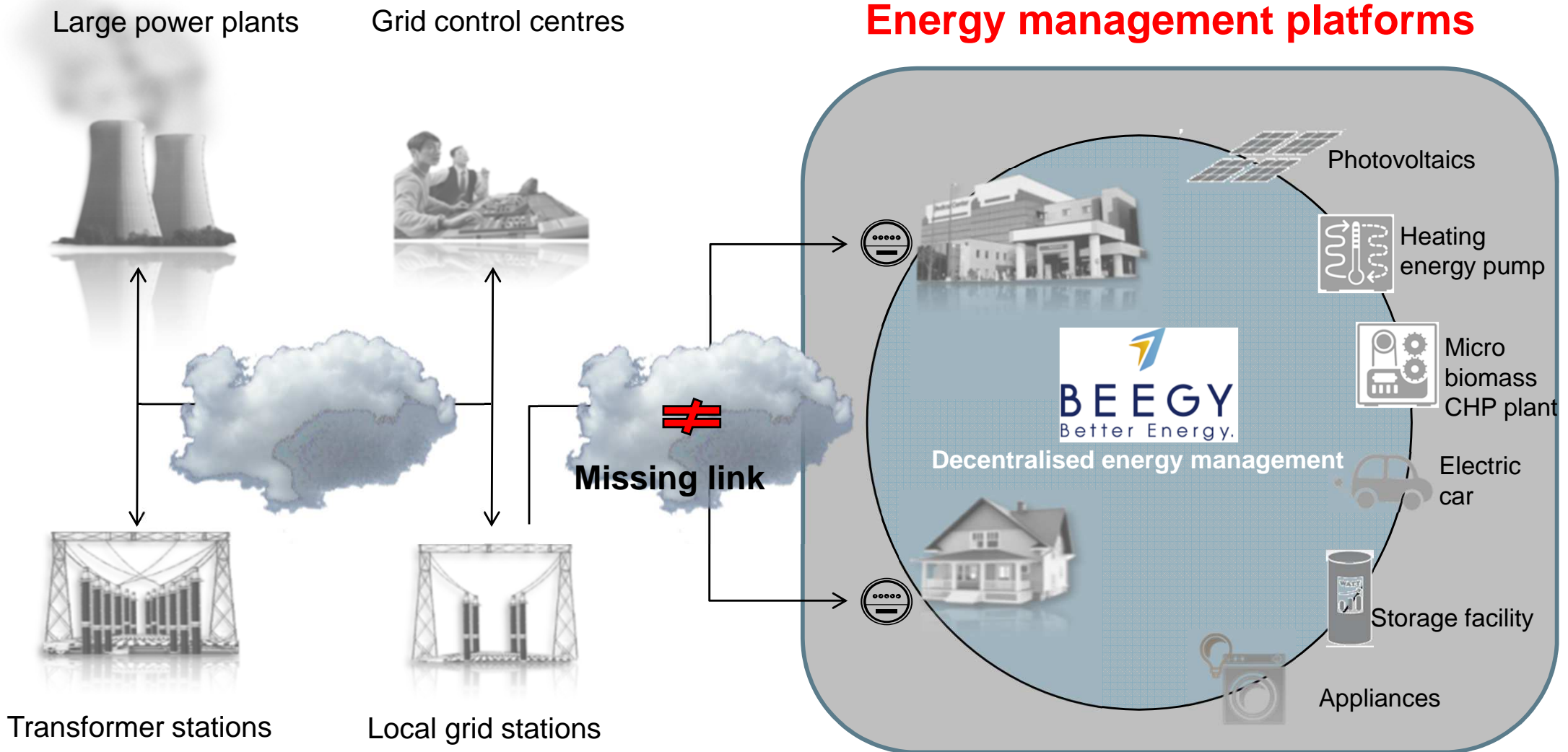
## New world



### Energy management

- ▶ Central and decentralised generation, mix of conventional and renewable sources
- ▶ Central and decentralised system management
- ▶ Customers and prosumers

# New technologies bridge the missing link to integrate decentralised plants into the energy market



# Renewable energies (RE) and combined heat and power (CHP) generation in MVV Energie's portfolio

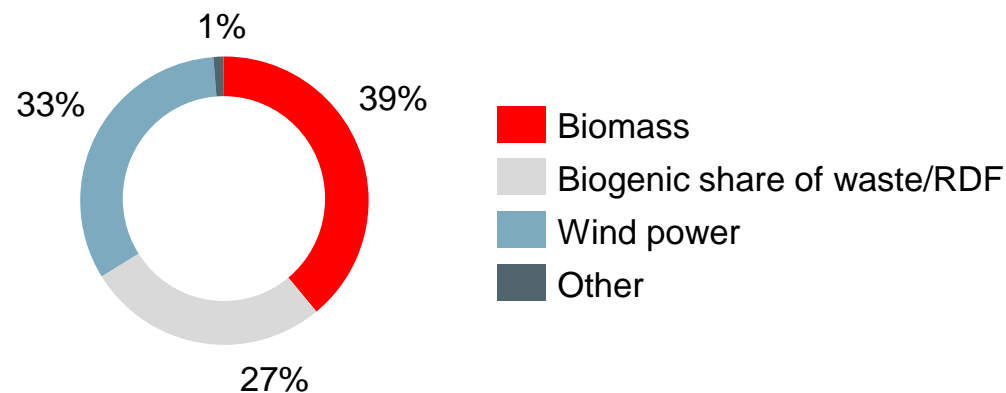


2013/14

2012/13

Share of electricity from RE and CHP	51%	52%	➔
RE electricity capacity	344 MW <sub>e</sub>	315 MW <sub>e</sub>	➔
Direct marketing (capacity under contract)	2 600 MW	2 400 MW	➔
Heating energy and steam generation (CHP)	5.1 bn kWh	5.6 bn kWh	➔
CO <sub>2</sub> emissions <sup>1</sup>	3.8 m tonnes	4.0 m tonnes	➔
CO <sub>2</sub> emissions avoided <sup>2</sup>	0.7 m tonnes	0.6 m tonnes	➔

Electricity generation from renewable energies at the MVV Energie Group in Germany in FY 2013/14: 872 million kWh



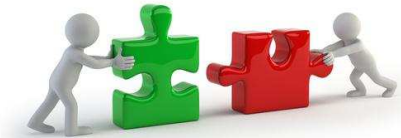
## Core statements:

- ▶ Well-balanced generation portfolio
- ▶ Wind power playing an ever greater role
- ▶ Share of electricity from RE and CHP > 50%
- ▶ Absolute reduction in direct CO<sub>2</sub> emissions
- ▶ CO<sub>2</sub> avoidance increased

<sup>1</sup> Direct CO<sub>2</sub> emissions of the MVV Energie Group

<sup>2</sup> CO<sub>2</sub> emissions avoided due to electricity from RE plants (as per BMU avoidance factors)

# Strong partnership with juwi AG



## “Energiser of the Future”

- ▶ Pioneer in transformation of German energy system
- ▶ One of Germany’s leading energy companies

## Together

- ▶ Strong partnership as opportunity for both companies to enhance and strengthen their businesses
- ▶ Long-term cooperation in core activities and value chains

## Renewable energies pioneer

- ▶ Market leader in developing wind and solar projects
- ▶ Strong project development competence

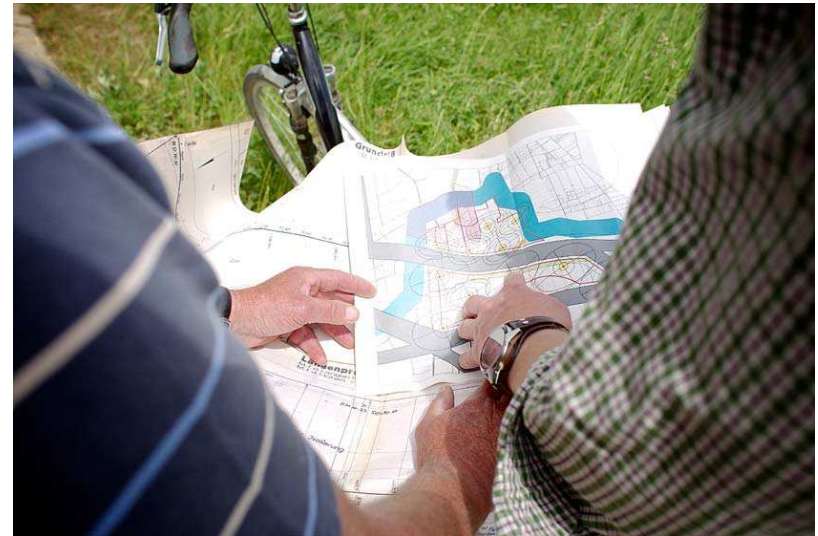
▶ **MVV Energie is convinced by juwi’s restructured business model and strategy**



# Acquisition of Windwärts Energie GmbH – Extension to value chain



- ▶ **Implementation of MVV Energie's generation strategy** by acquiring a regional project developer with key focus on Lower Saxony
- ▶ **Objective of expanding our wind portfolio** will be supported by
  - Boosting internal competencies (project development, operations management) and
  - Securing access to projects
- ▶ **French activities** represent an opportunity



# MVV Energie's generation strategy focuses on growth market of onshore wind power

## Generation strategy for renewable energies

- 1** Development of renewables electricity generation portfolio with focus on onshore wind power
  - ▶ Core element of MVV 2020 strategy
- 2** Extension in value chain with focus on project development (PD)
  - ▶ PD with value contribution, but different risk structure
- 3** Expansion in effective asset management
  - ▶ Optimisation over plant lifecycle (planning, operations, direct marketing)
  - ▶ Aim: independent of ownership
- 4** Exploitation of opportunities abroad
  - ▶ Systematic analysis of renewable energies in Europe

## Acquisition of Juwi and Windwärts

- ▶ Acquisition of Windwärts and cooperation with Juwi as opportunity to significantly expand proprietary project development
- ▶ Boosting competence in operations management and direct marketing also lays a foundation for effective asset management
- ▶ The access to a pipeline in development at Juwi and Windwärts can be used as a basis for further expansion in the proprietary asset portfolio
- ▶ Increasing international share at Juwi (worldwide) and Windwärts (France) reduces dependence on national subsidy systems

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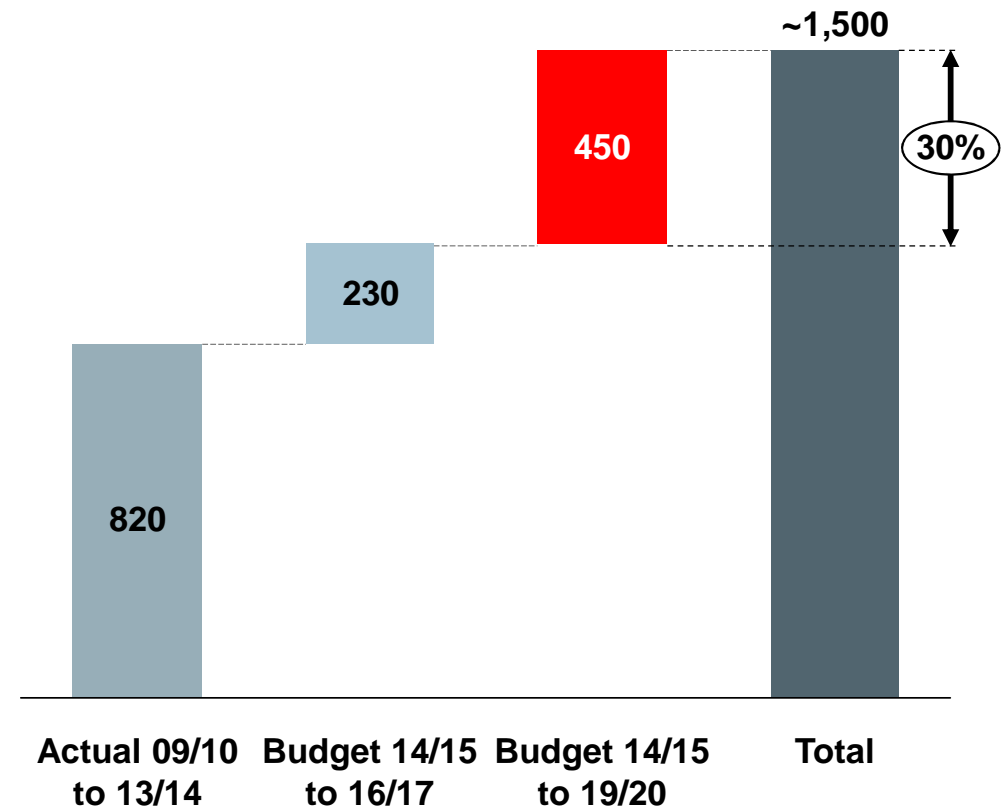
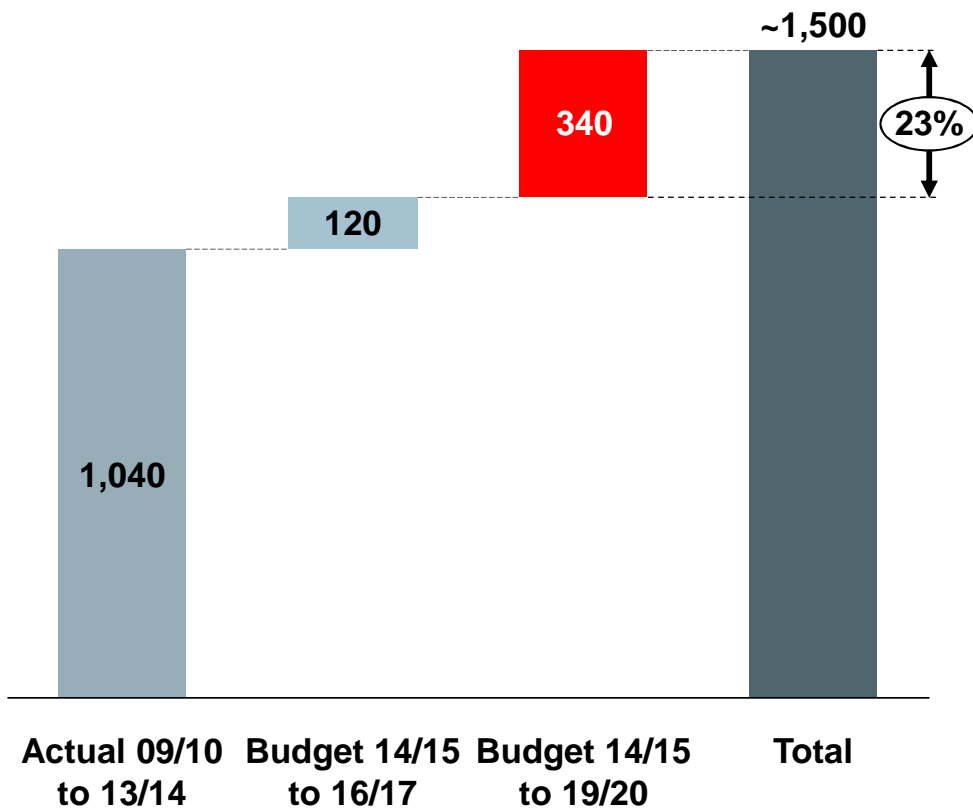
**MVV ENERGIE –  
IMPLEMENTATION OF OUR STRATEGY**

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# Implementation of investment programme at MVV Energie Group

**Growth:** approx. 77% implemented or decided

**Existing:** approx. 70% implemented or decided



Actual
  Budget – outstanding
  Budget – decided

# Investment and growth

## Investments in 2013/14 financial year



### ► Growth

- Construction of wind farm Hungerberg
- Construction of Kroppenstedt and Staßfurt biomethane plants
- Construction of Ridham Dock biomass power plant
- Construction of Plymouth energy from waste plant
- Extending the supply of district heating in Mannheim
- Takeover of electricity grids in Ilvesheim and Ketsch

### ► Existing business

- Optimising and preserving substance of supply facilities and distribution grids

# Biomethane plant Staßfurt – third step towards building up a biomethane cluster in Saxony-Anhalt

## Biomethan at Staßfurt location

- ▶ **Launch of construction work:** June 2014
- ▶ **Launch of operations:** Mid of 2015
- ▶ **Investment:** roughly Euro 14 million
- ▶ **Output:** approx. 3 MW<sub>e</sub>
- ▶ **Biogas production:** 63.5 million kWh p.a.  
(equivalent to electricity consumption of 6,000 families and heating energy need of 1,200 households)
- ▶ **Gas output:** 695 Nm<sup>3</sup> per hour of biomethane  
(in natural gas quality)
- ▶ **Raw materials requirement:** approx. 62,000 tonnes p.a., mainly maize silage, sugar beet, cuttings and winter crops
- ▶ **CO<sub>2</sub> savings:** 20,000 t/a
- ▶ **Planned operating term:** 26 years



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# OUTLOOK

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# Outlook for 2014/15 financial year

▶ **Moderate growth in sales (excluding energy taxes) compared with the previous year (Euro 3.8 billion)**



▶ **Adjusted EBIT to amount to between Euro 180 million and Euro 195 million**



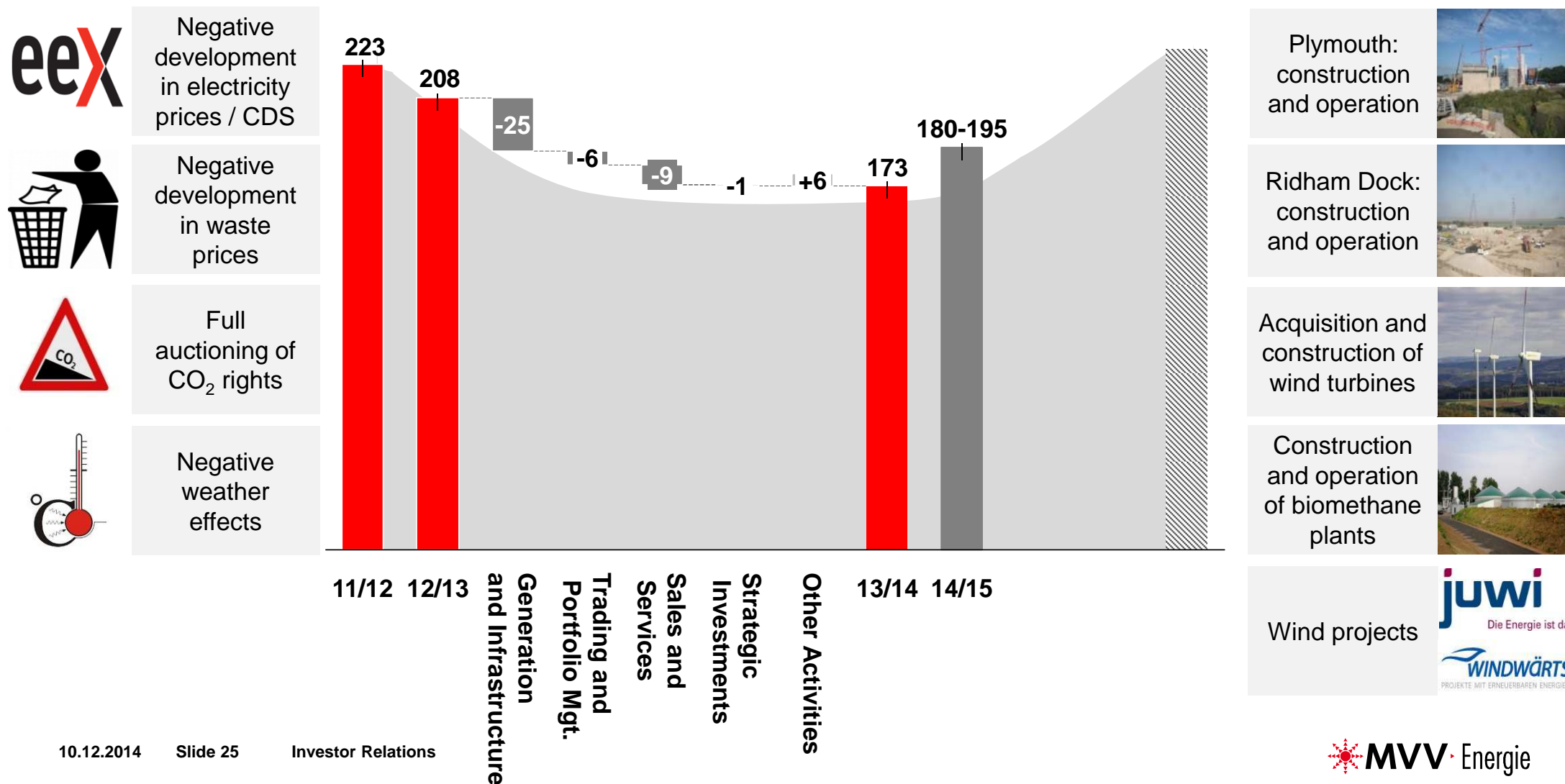
▶ **Key drivers of adjusted EBIT forecast:**

- Ongoing low margin achieved from generating electricity (clean dark spread)
- Low wholesale electricity and waste prices
- Weather conditions
- Start-up costs for our growth investments
- Commissioning of new plants



# Adjusted EBIT of MVV Energie Group – development and outlook

Euro million



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# FINANCIAL CALENDAR

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# Financial calendar 2014/15

- ▶ 11 Dec 2014 2013/14 Annual Report
- ▶ 11 Dec 2014 Annual Results Press Conference and Analysts` Conference in Frankfurt/Main
- ▶ 12 Feb 2015 Financial Report for 1<sup>st</sup> Quarter of 2014/15
- ▶ 13 Mar 2015 Annual General Meeting in Mannheim
- ▶ 12 May 2015 Financial Report for 1<sup>st</sup> Half of 2014/15 and Analysts` Conference Call
- ▶ 14 Aug 2015 Financial Report for 1<sup>st</sup> Nine Months of 2014/15 and Analysts` Conference Call
- ▶ 10 Dec 2015 2014/15 Annual Report
- ▶ 10 Dec 2015 Annual Results Press Conference and Analysts` Conference in Frankfurt/Main

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**BACK UP**

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 **MVV** · Energie

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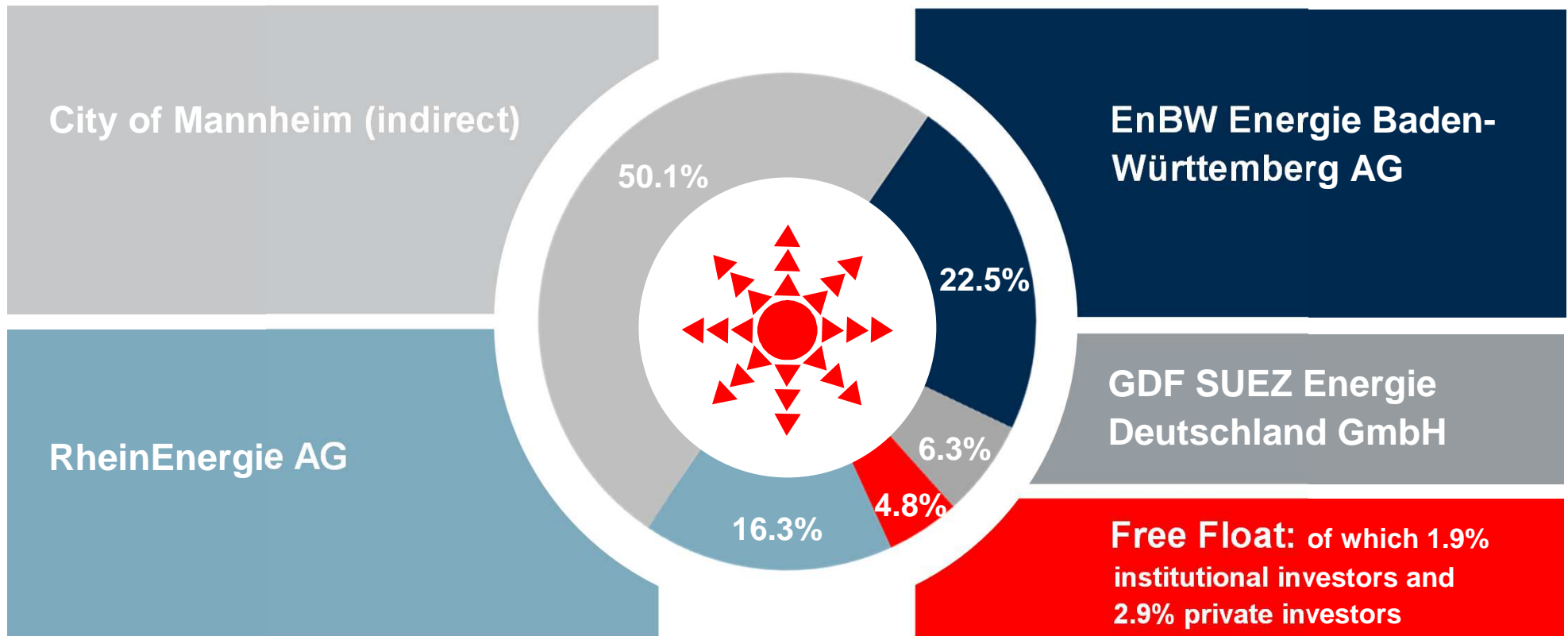
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**THE SHARE OF  
MVV ENERGIE AG**

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# Current shareholder structure and key figures of MVV Energie AG



▶ **No. of shares:**

65.907 million

▶ **Ø daily turnover:**

2,882 shares in 2013/14 FY

▶ **Market capitalisation:**

Euro 1,615 million

(Closing price on 10 December 2014: Euro 24.50 Euro)

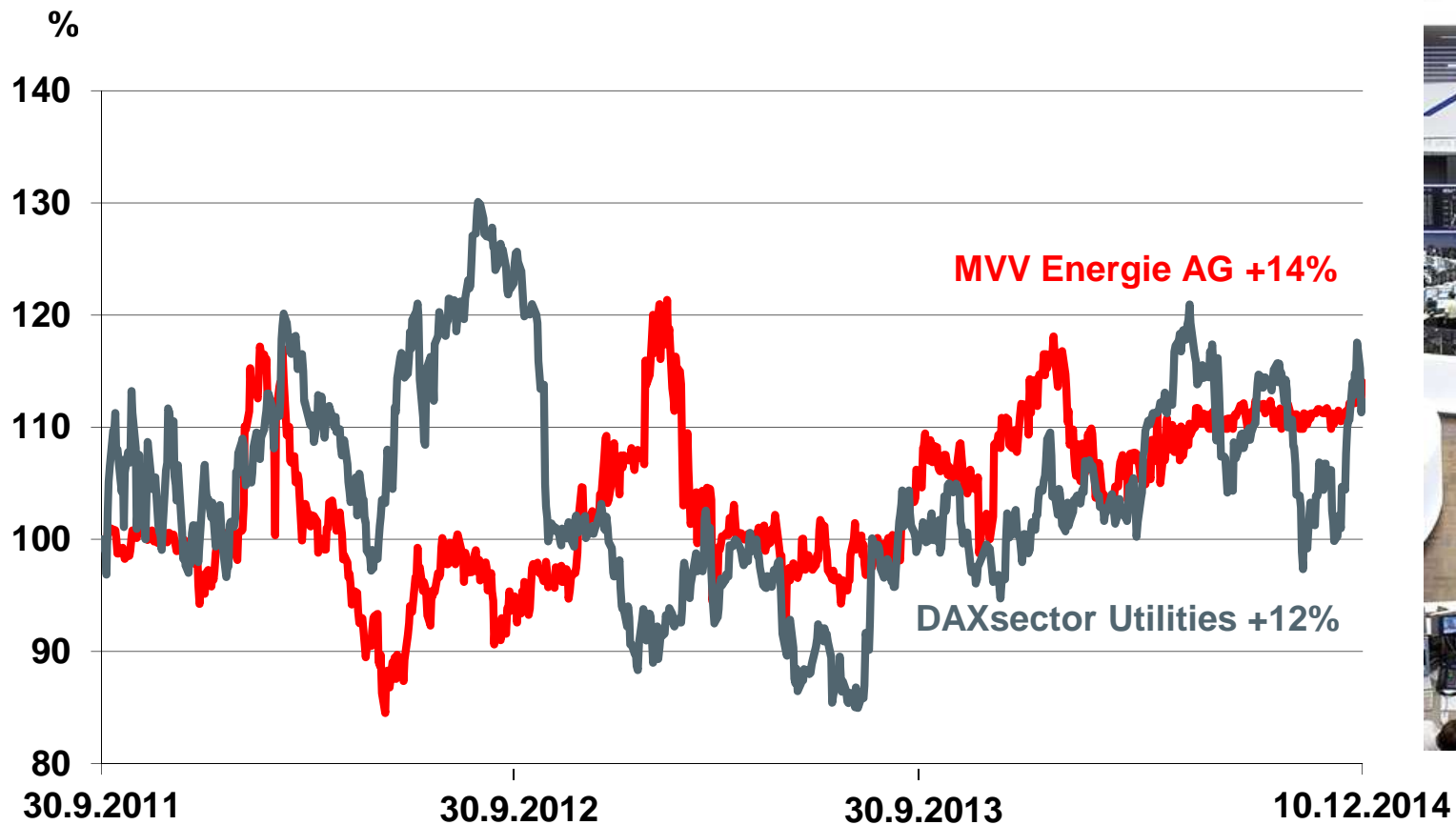
▶ **Free float:**

Euro 78 million

# Performance comparison of the MVV Energie AG share

ISIN DE000A0H52F5

XETRA Trading



Share chart as performance comparison (including dividend payments in March 2012, 2013 and 2014) with DAXsector Utilities

# High dividend distribution in past eight years

Dividend	2013/14	2012/13	2011/12	2010/11	2009/10	2008/09	2007/08	2006/07
Dividend/Share (Euro)	<b>0.90</b> <sup>1</sup>	0.90	0.90	0.90	0.90	0.90	0.90	0.80
Total dividend <sup>2</sup> (Euro million)	<b>59.3</b>	59.3	59.3	59.3	59.3	59.3	59.3	52.7
Closing price on 30.9 (Euro)	<b>23.89</b>	22.35	21.39	23.86	29.00	30.83	33.20	29.49
Dividend yield <sup>3</sup> (%)	<b>3.8</b>	4.0	4.2	3.8	3.1	2.9	2.7	2.7

1 subject to approval by the Annual General Meeting on 13 March 2015

2 with dividend entitlement since FY 2006/07: 65.9 million shares

3 dividend yield based on respective closing price in XETRA trading on 30 September



# Advantages for our shareholders

## Well balanced portfolio

- ▶ Across major steps of the value added chain,
- ▶ across regions and
- ▶ across customers

## Green & clean

- ▶ No nuclear exposure in own generation
- ▶ Wind onshore, biomass and biomethane
- ▶ CHP and district heating
- ▶ R&D: Smart metering

## Ambitious capex programme until 2020

- ▶ Euro 3 billion in total of which
  - Euro 1.5 billion in growth
  - Euro 1.5 billion in existing business

## Solid balance sheet

- ▶ Long term investment horizon matched with long term maturities
- ▶ High equity ratio of 35.1%

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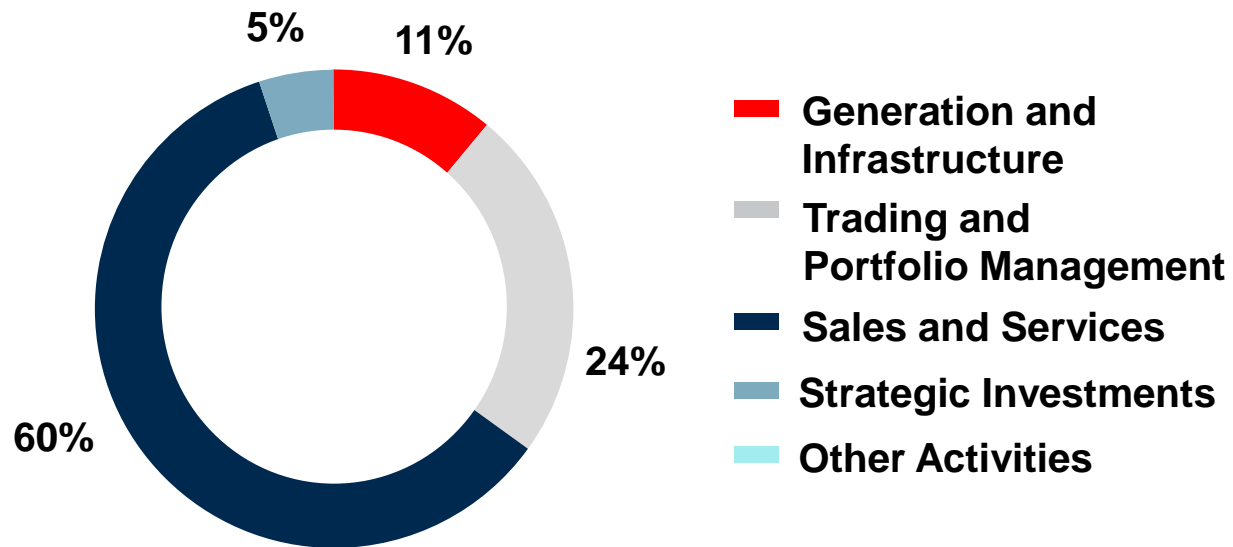
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**ADDITIONAL**  
**FINANCIAL INFORMATION**

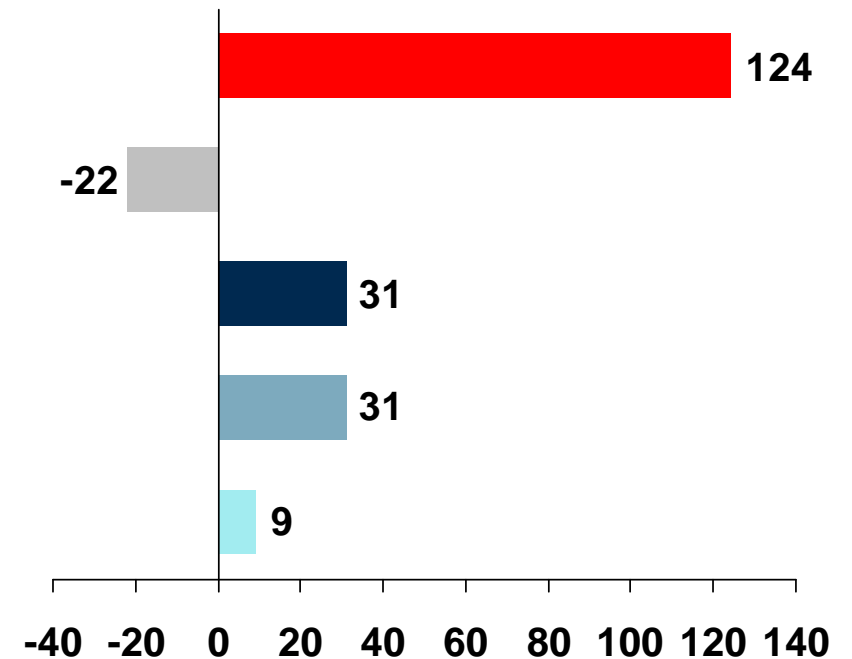
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# Sales and adjusted EBIT by reporting segments

Share of sales in 2013/14 FY



Adjusted EBIT in 2013/14 FY (Euro million)



# External sales and adjusted EBIT performance by quarter

in Euro million

	2013/14	2012/13	% change
1 <sup>st</sup> Quarter	1 073	1 082	-1
2 <sup>nd</sup> Quarter	1 030	1 149	-10
3 <sup>rd</sup> Quarter	856	935	-8
4 <sup>th</sup> Quarter	834	878	-5
External sales in the financial year	<u>3 793</u>	<u>4 044</u>	-6
1 <sup>st</sup> Quarter	78	88	-11
2 <sup>nd</sup> Quarter	76	92	-17
3 <sup>rd</sup> Quarter	31	38	-18
4 <sup>th</sup> Quarter	-12	-10	-20
Adjusted EBIT in the financial year	<u>173</u>	<u>208</u>	-17

# Electricity and heating energy turnover in the 2013/14 financial year

	2013/14	2012/13	% change
Electricity in kWh million	<b>23 188</b>	25 817	-10
of which Generation and Infrastructure	<b>142</b>	61	>+100
of which Trading and Portfolio Management	<b>11 950</b>	14 489	-18
of which Sales and Services	<b>10 678</b>	10 733	-1
of which Strategic Investments	<b>418</b>	534	-22
District heating in kWh million	<b>6 497</b>	7 510	-14
of which Generation and Infrastructure	<b>496</b>	402	+23
of which Trading and Portfolio Management	–	–	–
of which Sales and Services	<b>5 076</b>	5 901	-14
of which Strategic Investments	<b>925</b>	1 207	-23

# Gas and water turnover and combustible waste delivered in the 2013/14 financial year

	2013/14	2012/13	% change
Gas in kWh million	<b>23 075</b>	25 078	-8
of which Generation and Infrastructure	<b>103</b>	60	+72
of which Trading and Portfolio Management	<b>15 640</b>	16 313	-4
of which Sales and Services	<b>6 393</b>	7 482	-15
of which Strategic Investments	<b>939</b>	1 223	-23
Water in m <sup>3</sup> million	<b>47.1</b>	47.4	-1
Combustible waste delivered in tonnes 000s	<b>1 865</b>	1 888	-1

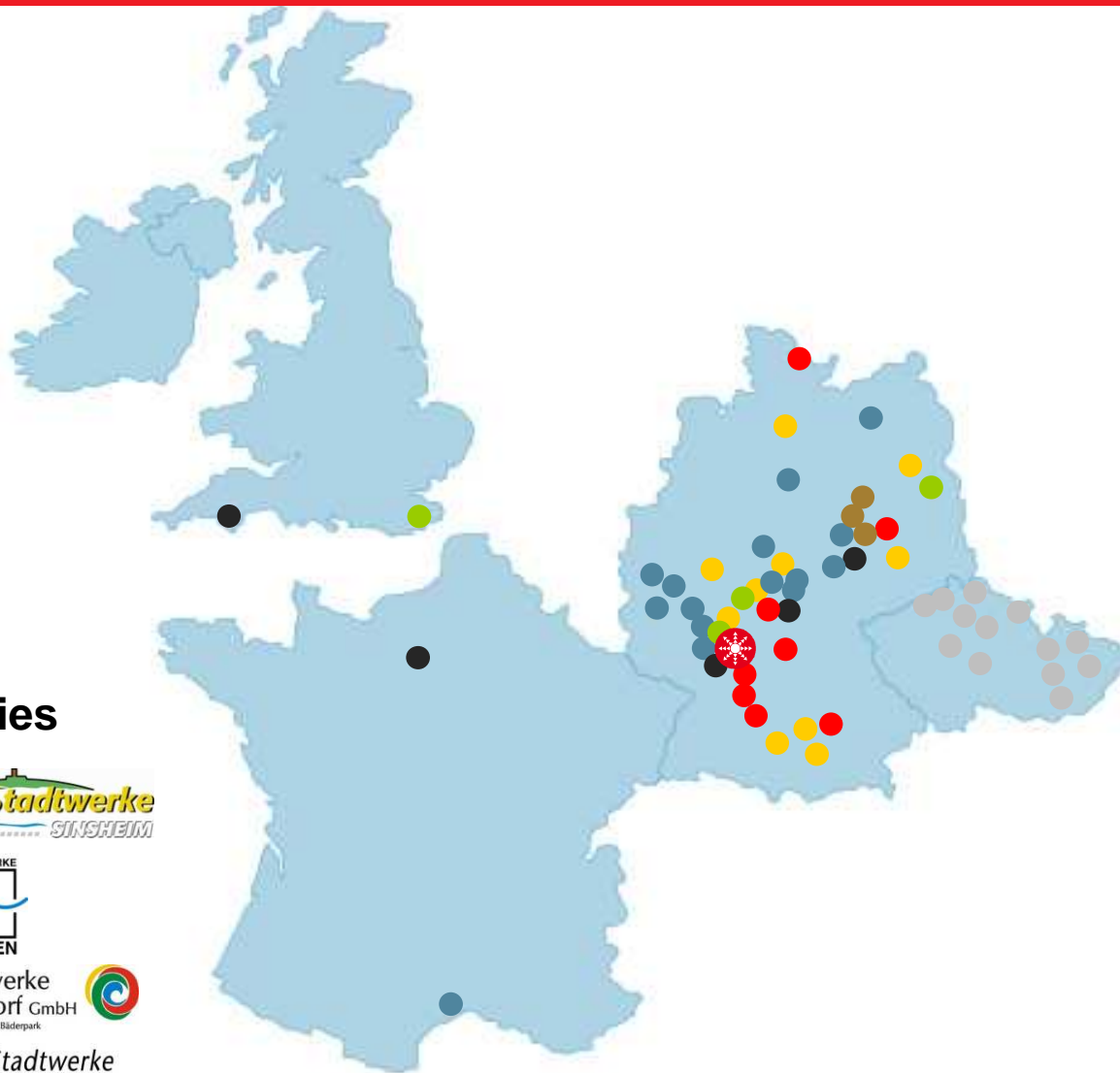
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# INVESTMENTS

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# Municipal utility companies and major locations of the MVV Energie Group



**MVV Energie**  
**● Municipal utilities**

**24/7 STADTWERKE KIEL**

**Stadtwerke SINSHEIM**

**EVO**

**STADTWERKE BUCHEN**

**STADTWERKE INGOLSTADT**

**Stadtwerke Walldorf GmbH**  
 Energie · Wasser · Bäderpark

**Köthen Energie**

**Stadtwerke Schwetzingen**

**MVV Energie**  
**Renewable energies**

**● Wind farms and**  
**WINDWÄRTS**

**● Biomethane plants**

**MVV Enamic**

**● Plants and industrial parks**

**MVV Energie CZ**

**● District heating**

**MVV Umwelt**

**● Waste utilisation**

**● Biomass power plants**



# We are making good progress with implementing our growth targets – Examples of projects implemented since MVV 2020



**Successful entry into UK market**



**Development of wind power portfolio**



**Entry into biomethane business**



**Expansion in district heating Block 9 GKM**



**Expansion of district heating in Czech Republic**



**Joint district heating project in Ingolstadt**



**Expansion in energy efficiency and contracting**

# Kirchberg wind farm – successful expansion of wind energy



## Kirchberg location in Rhineland-Palatinate

- ▶ **Launch of operations:** successively from December 2011
- ▶ **Investment:** Euro 84 million
- ▶ Joint venture with juwi
- ▶ 23 E-82 E2 type wind turbines (Enercon)
- ▶ **Hub height:** 138 metres
- ▶ **Output:** 53 MW<sub>e</sub>
- ▶ **Electricity output:** 125 kWh million p.a. (equivalent to consumption of 35,000 households)
- ▶ **CO<sub>2</sub> savings:** 100,000 tonnes a year



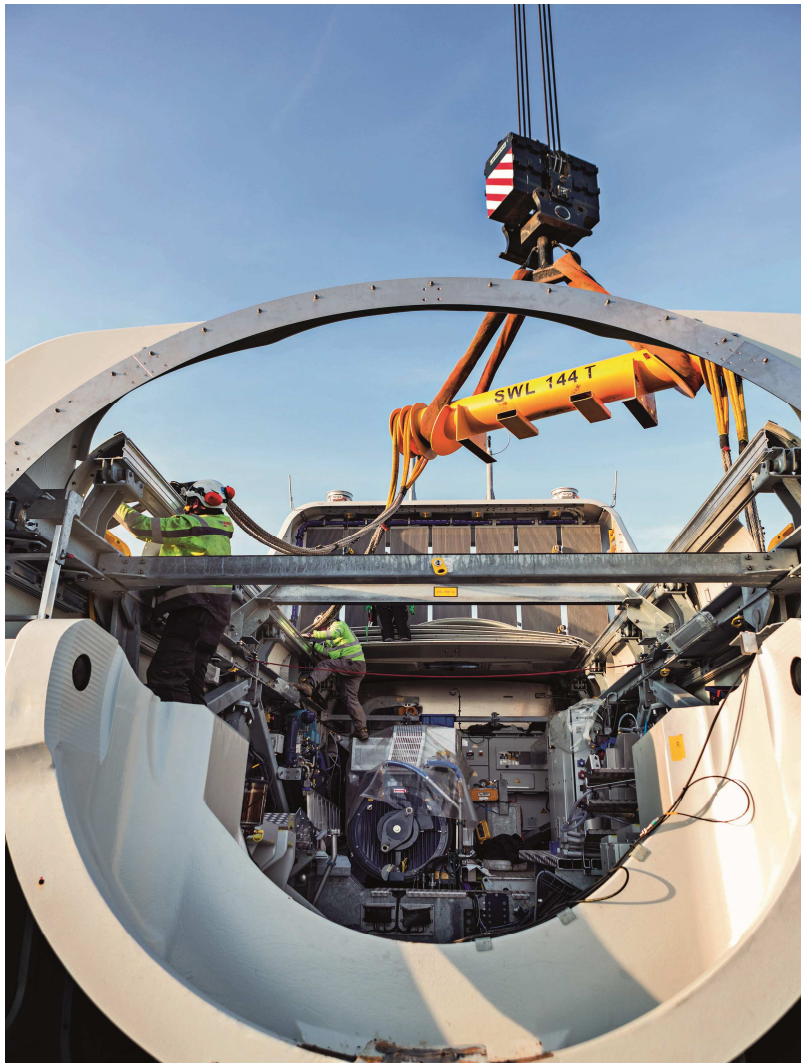
# Acquisition of German onshore wind farm portfolio from Iberdrola



## Wind farm portfolio of Iberdrola

- ▶ **Launch of operations:** 2003 until 2008
- ▶ **Investment:** Euro 53 million
- ▶ **7 locations in 5 federal states**
- ▶ **Total of 40 wind turbines manufactured by GE and Gamesa:** of which
  - 22 MW in 2.0 MW capacity class
  - 37.5 MW in 1.5 MW capacity class
  - 3.4 MW in 0.85 MW capacity class
- ▶ **Output:** 63 MW<sub>e</sub>
- ▶ **Electricity output:** 108 million kWh p.a. (equivalent to consumption of 30,000 households)
- ▶ **CO<sub>2</sub> reduction:** 78,000 tonnes a year

# Wind farm Hungerberg – further expansion of wind energy



## Hungerberg location in Rhineland-Palatinate

- ▶ **Launch of operations:** February 2014
- ▶ **Investment:** Euro 65 million
- ▶ Joint venture with juwi
- ▶ 10 V112 type wind turbines (Vestas)
- ▶ **Hub height:** 140 metres
- ▶ **Output:** 30 MW<sub>e</sub>
- ▶ **Electricity output:** 84 kWh million p.a. (equivalent to consumption of 25,000 households)
- ▶ **CO<sub>2</sub> reduction:** 61,000 tonnes a year

# Plymouth energy from waste plant project

## South West Devon Waste Partnership



### Investment and financing

- ▶ **Investment:** approx. Euro 250 million
- ▶ **Financing:** secured with KfW IPEX-Bank, Svenska Handelsbanken and EIB
- ▶ **Start of main construction work:** August 2012
- ▶ **Launch of operations:** 2015

### Technical data

- ▶ **Thermal use of waste volume:** 245,000 tonnes p.a.
- ▶ **Net electricity output:** 22.5 MW<sub>e</sub>
- ▶ **Max. thermal energy output:** 23.3 MW<sub>t</sub>

### Broad and secure revenue base

- ▶ Municipal waste contract: 25-year term, 75% bring-or-pay
- ▶ Energy supply contract with a 25-year term to supply electricity and steam to navy base
- ▶ Government support for cogeneration and generation of renewable energy from biogenic share of waste

# Biomass power plant project in Ridham Dock

## Biomass power plant Ridham Dock



### Investment and financing

- ▶ **Investment:** approx. Euro 140 million
- ▶ **Financing:** corporate funding
- ▶ **Start of main construction work:** April 2013
- ▶ **Launch of operations:** 2015

### Technical data

- ▶ **Thermal use of waste wood volume:** 172,000 tonnes p.a.
- ▶ **Net electricity output:** 23.2 MW<sub>e</sub>
- ▶ **Electricity generation:** approx. 188 million kWh p.a.
- ▶ **Optional combined heat and power generation (CHP)**

### Broad and secure revenue base

- ▶ More than 1 million tonnes of waste wood in the catchment area
- ▶ State support of the production of renewable energy from biomass



# District heating storage facility at Grosskraftwerk Mannheim (GKM)



## District heating storage facility at GKM

- ▶ **Launch of operations:** Autumn 2013
- ▶ **Investment:** Euro 27 million
- ▶ **Height:** 36 metres
- ▶ **Diameter:** 40 metres
- ▶ **Capacity:** 43,000 cubic metres
- ▶ **Usable heat content:** 1.5 million kWh
- ▶ **Economic ownership and operations management:** MVV Energie
- ▶ **Construction and operation:** GKM

# Launch of biomethane business at Klein Wanzleben location

## Biomethane plant at Klein Wanzleben location

- ▶ **Launch of construction work:** end of May 2011
- ▶ **Launch of operations:** July 2012
- ▶ **Investment:** Euro 12.6 million  
(of which MVV Energie: Euro 9.4 million)
- ▶ **Output:** approx. 3 MW<sub>e</sub>
- ▶ **Biogas production:** 63 million kWh p.a.  
(equivalent to electricity consumption of 6,000 families and heating energy need of 1,200 households)
- ▶ **Gas output:** 695 Nm<sup>3</sup> per hour of biomethane
- ▶ **Raw materials requirement:** approx. 47,500 tonnes p.a. of maize silage, 4,000 tonnes p.a. of sugar beet plus 10,000 tonnes p.a. of sugar beet chips for process heat production (own consumption)
- ▶ **CO<sub>2</sub> savings:** 20,000 tonnes a year
- ▶ **Planned operating term:** at least 20 years





# Biomethane plant Kroppenstedt – second step towards building up a biomethane cluster in Saxony-Anhalt

## Biomethane plant at Kroppenstedt location

- ▶ **Launch of construction work:** December 2012
- ▶ **Launch of operations:** January 2014
- ▶ **Investment:** roughly Euro 14 million
- ▶ **Output:** approx. 3 MW<sub>e</sub>
- ▶ **Biogas production:** 63.5 million kWh p.a.  
(equivalent to electricity consumption of 6,000 families and heating energy need of 1,200 households)
- ▶ **Gas output:** 695 Nm<sup>3</sup> per hour of biomethane  
(in natural gas quality)
- ▶ **Raw materials requirement:** approx. 68,500 tonnes p.a.,  
mainly cow slurry/cow dung, maize silage and sugar beet
- ▶ **CO<sub>2</sub> savings:** 20,000 tonnes a year
- ▶ **Planned operating term:** 26 years



# Decentralised energy supply – EVO wood pellet plant in Offenbach



## Wood pellet plant in Offenbach

- ▶ **Launch of operations:** May 2011
- ▶ **Investment in wood pellet plant, including adjacent biomass cogeneration plant:**  
approx. Euro 17 million
- ▶ Wood pellet production from shavings and waste timber in 2013/14 FY: 56,000 tonnes
- ▶ Wood pellet production will be expanded to 90,000 tonnes p.a.
- ▶ Substitute fuel for up to 50,000 tonnes of hard coal at EVO's cogeneration plant
- ▶ **CO<sub>2</sub> savings:** up to 80,000 tonnes p.a.

# Implementation: Successful expansion of district heating – Ingolstadt



## Ingolstadt joint district heating project

- ▶ **Launch of operations:** summer 2011
- ▶ Bavaria's largest waste heat and district heating project
- ▶ **Investment:** around Euro 23 million
- ▶ Joint project with Petroplus refinery, City of Ingolstadt and AUDI AG
- ▶ Construction of a 5.3 km district heating pipeline
- ▶ **Thermal energy output:** 300 million kWh p.a.



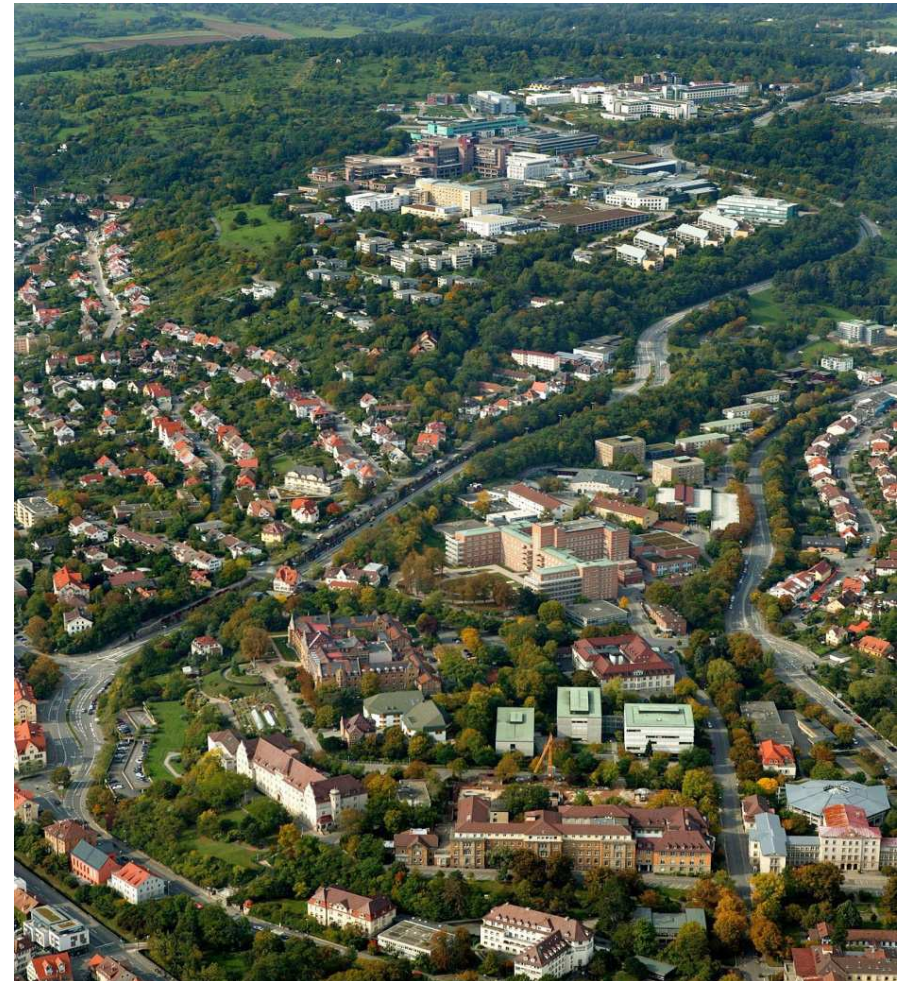
# Enhanced energy efficiency and contracting – Tübingen University Hospital

## Tübingen University Hospital

- ▶ **Assumption of operations:** July 2010
- ▶ Conversion of 40 year-old heat power plant from oil and gas to wood pellet operations
- ▶ **Launch of operations:** March 2013
- ▶ **Investments:** Euro 12 million
- ▶ **Contractual term:** 20 years

### Technical data

- ▶ **2 wood boilers:** each 10 MW<sub>t</sub>
- ▶ **Peak load boiler:** 17 MW<sub>t</sub> + reserve boiler 32 MW<sub>t</sub>
- ▶ **CO<sub>2</sub> savings:** 20,000 tonnes a year, or up to 98%



# TERMIZO – Heating energy from waste

## TERMIZO in the Czech Republic

- ▶ TERMIZO is a waste-fired heating energy plant that meets the highest European standards
- ▶ **Purchase price:** approx. Euro 21 million
- ▶ All of the heating energy produced is supplied to Teplarna Liberec
- ▶ Single-line plant concept with modern flue gas cleaning



## Technical data

- ▶ **Thermal energy output:** 38.3 MW<sub>t</sub>
- ▶ **Electricity generation:** 4.0 MW<sub>e</sub>
- ▶ **Waste incineration capacity:** 106,000 tonnes p.a.

# Grosskraftwerk Mannheim (GKM)

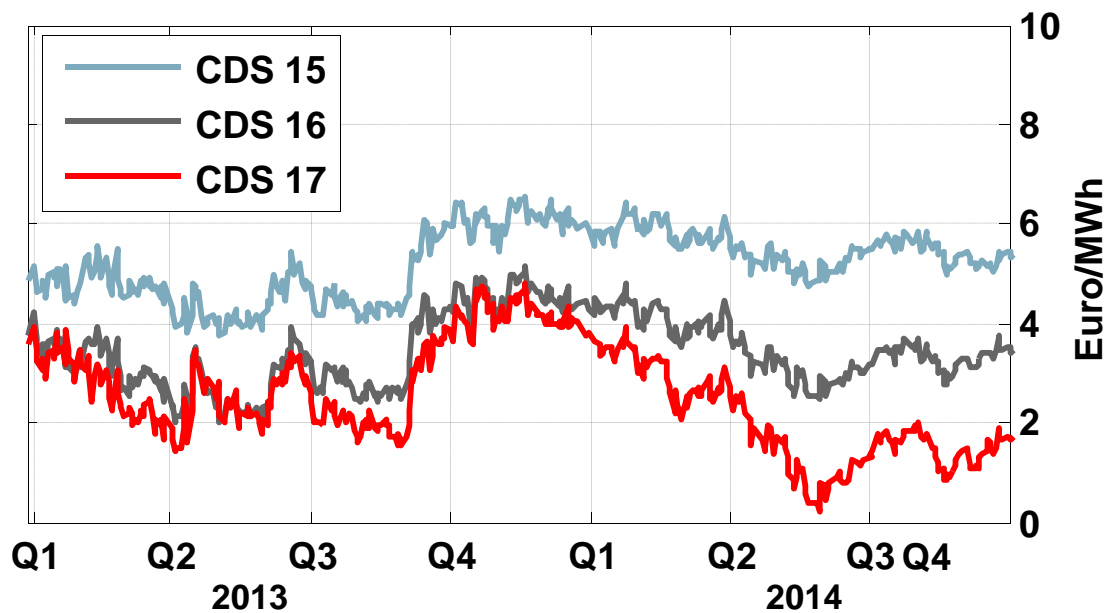
## Grosskraftwerk Mannheim (GKM)

- ▶ **Launch of operations** at Block 9: 2015
- ▶ **Shareholder structure** in GKM: 28% MVV Energie, 40% RWE, 32% EnBW
- ▶ **Gross electricity generation capacity** at GKM: 1,675 MW<sub>e</sub>
- ▶ **Gross electricity generation capacity** at new Block 9: 911 MW<sub>e</sub>
- ▶ **Fuel efficiency** of new Block 9: up to 70%
- ▶ District heating supply secure, as Blocks 3 and 4 to remain in operation until Block 9 is online
- ▶ Immission protection approval to use Block 3 as “**cold reserve**” in winter months





# The Clean Dark Spread (CDS) development has a significant impact on the MVV Energie Group



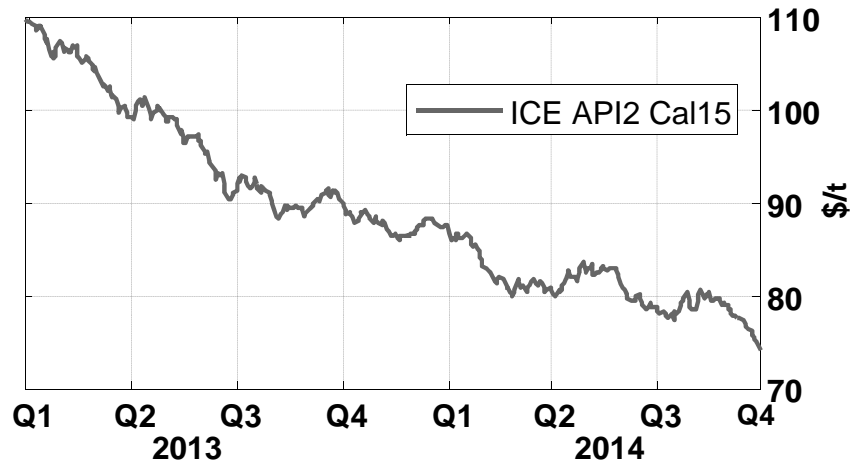
Future CDS development will be influenced by different markets and political decisions:

## German power generation

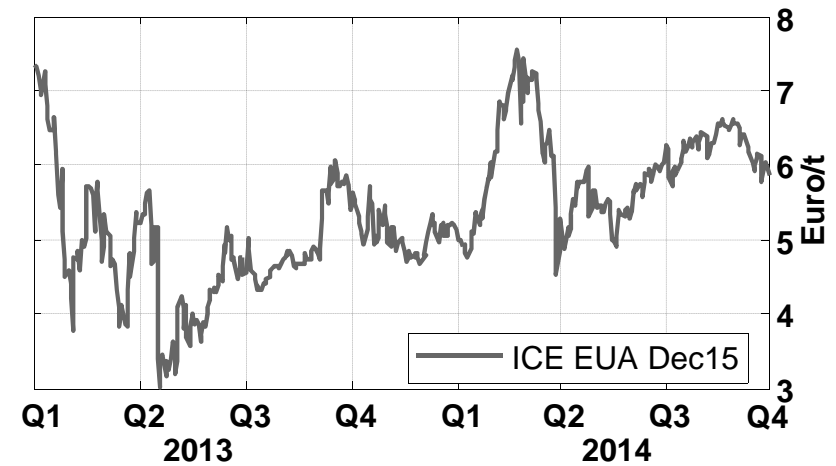
- Nuclear exit
  - Renewable generation (wind, solar)
  - New conventional generation
- ▶ Global coal markets/FX
- ▶ Carbon price level

# Energy price curves

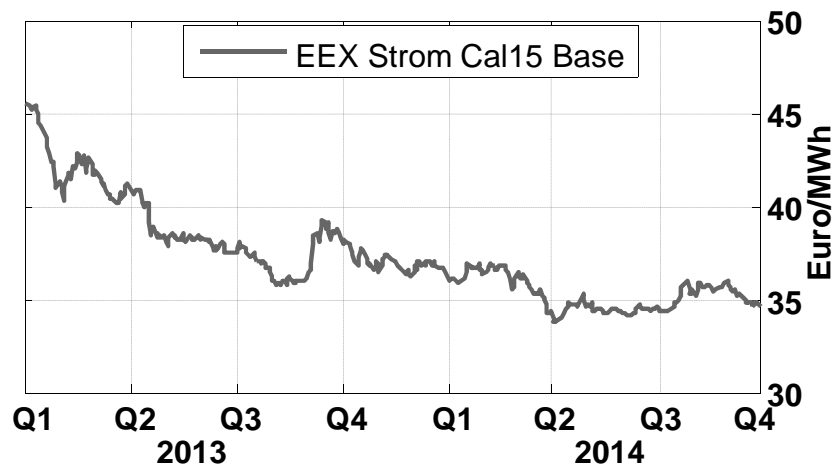
## Coal



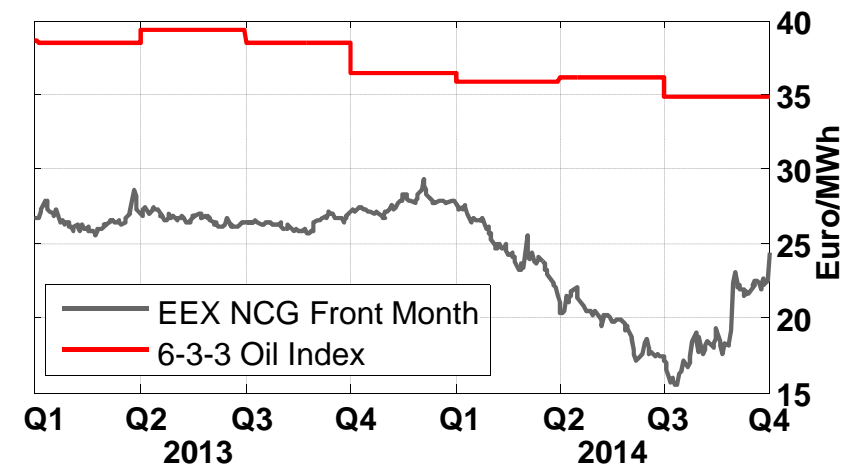
## CO<sub>2</sub>



## Electricity



## Gas





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# **CONTACT**

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