Board meets Investors Workshop

Essen, 18 October 2011
RWE East – Proven track record and promising growth opportunities

Board meets Investors Workshop

Essen, 18 October 2011

Martin Herrmann
Chief Executive Officer, RWE East, s.r.o
Chief Executive Officer, RWE Transgas, a.s.
RWE in CEE/SEE region: One of the leading integrated utilities

RWE core markets

Leading positions in core markets

<table>
<thead>
<tr>
<th>Product</th>
<th>Electricity</th>
<th>Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>No. 1</td>
<td>No. 3</td>
</tr>
<tr>
<td>UK</td>
<td>No. 4</td>
<td>No. 4</td>
</tr>
<tr>
<td>Netherlands</td>
<td>No. 2</td>
<td>No. 1</td>
</tr>
<tr>
<td>Central Eastern and South Eastern Europe</td>
<td>&gt; No. 2 in Hungary</td>
<td>&gt; Leading position in Hungary</td>
</tr>
<tr>
<td></td>
<td>&gt; No. 3 in Slovakia</td>
<td>&gt; No. 2 in Slovakia</td>
</tr>
<tr>
<td></td>
<td>&gt; Presence in the Czech Republic</td>
<td>&gt; No. 1 in the Czech Republic</td>
</tr>
<tr>
<td></td>
<td>&gt; No. 6 in Poland</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; Presence in Turkey</td>
<td></td>
</tr>
<tr>
<td>Total Europe</td>
<td>No. 3</td>
<td>No. 6</td>
</tr>
</tbody>
</table>

*) Market positions of the RWE Group in terms of sales.
RWE East contributing significantly to RWE Group

**Share of RWE East (RWE Group as 100 %)**

- EBITDA: € 1.1 billion
- Operating Result: € 0.9 billion

**KPIs of RWE East (RWE Group as 100 %)**

<table>
<thead>
<tr>
<th>Values as of 31.12.2010, consolidated</th>
<th>RWE East</th>
<th>East’s share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues</td>
<td>€ bn</td>
<td>5.3</td>
</tr>
<tr>
<td>Investments</td>
<td>€ bn</td>
<td>0.4</td>
</tr>
<tr>
<td>Employees</td>
<td>ths</td>
<td>10.6</td>
</tr>
<tr>
<td>Capacity (electricity)</td>
<td>GW</td>
<td>1.0</td>
</tr>
<tr>
<td>Production (electricity)</td>
<td>TWh</td>
<td>6</td>
</tr>
<tr>
<td>Sales (electricity)</td>
<td>TWh</td>
<td>25</td>
</tr>
<tr>
<td>Customers (electricity)</td>
<td>million</td>
<td>3</td>
</tr>
<tr>
<td>Sales (gas)</td>
<td>TWh</td>
<td>74</td>
</tr>
<tr>
<td>Customers (gas)</td>
<td>million</td>
<td>2</td>
</tr>
</tbody>
</table>
RWE East regional companies have a positive track record and achieved high profitability in all countries.

Operating result development (€ million)

- Overall significant operating result increase
- All countries contributing to the trend; key pillars: Czech Republic and Hungary
- Performance driven by post acquisition restructuring and efficiency enhancements

Key value drivers

- Distribution:
  - regulatory management
  - O&M costs
  - asset management
- Sales:
  - margins
  - customer base
  - operational costs

> Numbers post 2006 do not include midstream gas business (allocated to RWE Supply & Trading)
Turkey becomes important pillar of RWE East with ambitious growth targets

Current projects in Turkey

> CCGT Denizli
  - Under construction with JV partner Turcas (30% share, RWE holds 70% majority)
  - Installed capacity 775 MW
  - Investment cost € 500 million
  - Connected to the grid by the end of 2012

> Organic sales growth (electricity)
  - Market entry into downstream in 2011

> Further value added growth considered
  - Hydro power plants
  - Other electricity generation opportunities
  - Bolt on acquisitions
Regulated business counts for 53% of RWE East operating results.

(1) Smaller generation units
(2) Start up positions
(3) To be connected to the grid by the end of 2012
(4) Retail partially regulated (Hungary - households, SMEs and public institutions; Slovakia – households, CR - control due to superdominant position)
Stable grid business creating more than half of RWE East profit

Existing main businesses

<table>
<thead>
<tr>
<th>Country</th>
<th>CR</th>
<th>HU 15/49*</th>
<th>PL</th>
<th>SK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distributed volume</td>
<td>79 TWh</td>
<td>15/49* TWh</td>
<td>7 TWh</td>
<td>4 TWh*</td>
</tr>
<tr>
<td>Position in country</td>
<td>1</td>
<td>2/1*</td>
<td>6</td>
<td>3*</td>
</tr>
<tr>
<td>Commodity</td>
<td>gas</td>
<td>el/gas</td>
<td>el</td>
<td>el</td>
</tr>
</tbody>
</table>

Strategic directions - Existing businesses

- Manage regulatory risk
- Focus on cost optimization in asset service
- Bolt on acquisitions

Strategic directions - Value added growth

Chances and risks

+ Stable business
+ Increasing need for investment
+ Development of technology (smart grid)
- Regulatory risk of tightening framework in some countries

Non-consolidated companies (FOGAZ, TIGAZ in Hungary and VSE in Slovakia)

Note: Figures 2010

RWE East, s.r.o. | Martin Herrmann | 18 October 2011
In grid, regulatory management as key success factor of existing business

> Overlapping national regulatory periods generally stabilize the EBIT from network activities of RWE East

> Regulatory regimes in CEE are not harmonized, differences also contribute to stability of operating results

> In some countries also part of supply still regulated, in general trend towards full liberalization followed in CEE, creating further opportunities
In sales, profitable existing business to be defended, growth in second commodities and new markets

Existing main businesses

<table>
<thead>
<tr>
<th></th>
<th>CR</th>
<th>HU</th>
<th>PL</th>
<th>SK</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of customers</td>
<td>2.0 m</td>
<td>2.1 m/2.1 m*</td>
<td>0.9 m</td>
<td>0.6 m*/&lt;0.1 m</td>
</tr>
<tr>
<td>Market share</td>
<td>50%</td>
<td>32%/38%*</td>
<td>5%</td>
<td>14%*/18%</td>
</tr>
<tr>
<td>Commodity</td>
<td>gas</td>
<td>el/gas</td>
<td>el</td>
<td>el/gas</td>
</tr>
</tbody>
</table>

Chances and risks

- Pressure by increasing competition & gas-to-oil spread on existing gas businesses
- Ongoing liberalization opens access to new regions/products

Strategic directions - Existing businesses

> Defend existing profitable positions
  - Retention activities
  - Cost efficiency in serving customers

Strategic directions - Value added growth

> Grow in 2nd commodity from existing positions
  - success in SK (gas)
  - start up in CR (electricity)
  - considerations in PL (gas)
> Grow in new regions
  - organic sales growth in RO and TR (both electricity)

Note: Figures 2010, for CR current status (H1 2011) due to significant development
In generation, significant growth to be delivered with focus on Turkey and Poland

Existing main businesses

<table>
<thead>
<tr>
<th></th>
<th>HU</th>
<th>HR (Croatia)(1)</th>
<th>TR(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installed capacity</td>
<td>951 MW</td>
<td>210 MW</td>
<td>775 MW</td>
</tr>
<tr>
<td>Market share</td>
<td>15%</td>
<td>5%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Chances and risks

- Plant sites available for new builds
- Substantial capacity needs
- Growth in renewables and decentralized generation
- Tighter CO₂ emission regime (across EU)

Strategic directions - Existing businesses

> Adapt lignite power plants in Hungary
> Finalize CCGT power plant in Turkey in time and budget

Strategic directions - Value added growth

> Build flexible/CO₂ light positions synergetic to existing business
> Consider Hydro power position in Turkey
> Consider gas-fired power position, eg. in Poland
> Further develop renewables (jointly with RWE Innogy)

(1) Non-consolidated
(2) To be connected to the grid by the end of 2012
Note: Figures 2010, except for Turkey
In storage, main focus on optimizing strong existing position in Czech Republic

Existing main businesses

- Installed capacity (working gas volume): 2.5 bcm
- Market share: 77%
- Maximal injection/withdrawal capacity: 28/38 mcm/day

Chances and risks

+ Increasing number of shippers
+ Increase of flexibility needs in the mid- and long run
  - Low seasonal summer-winter spreads
  - Competition of gas storage projects

Strategic directions - Existing businesses

> Extension of capacity concluded
> Focus on optimization of operation

Strategic directions - Value added growth

> Develop further investment options for possible later realization (depending on regulation and price signals)
Beside cash and CAPEX constrains RWE is willing to invest in its CEE/SEE growth region

Implementing its investment strategy, RWE East will...

> Improve reliable supply of energy mainly by investments into existing grid businesses

> Grow within the CEE/SEE region by significantly investing in growth projects (Organic and bolt on acquisitions)

> Significantly improve earnings thanks to contribution of growth projects

<table>
<thead>
<tr>
<th>Investments per year</th>
<th>Growth projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>~€ 300 m investment in generation in Turkey</td>
<td>~€ 500 m investments focus on Poland and Turkey</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Existing businesses (€ million)</th>
<th>400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable investment into existing businesses</td>
<td></td>
</tr>
</tbody>
</table>

2010 2011 2012-14

~€ 300 m investment in generation in Turkey
~€ 500 m investments focus on Poland and Turkey
Backup
RWE maintains strategic and regional focus - growth markets mainly CEE/SEE, especially Turkey

- RWE’s core business remains electricity and gas
- We build on our leading positions in our core markets to look for further growth
- Regional growth markets mainly CEE/SEE, especially Turkey
- Grow our renewables business in and around our traditional core markets

**RWE East responsible for RWE activities in CEE/SEE region - Attractive region with established RWE presence and significant development opportunities**


- 0.25/1.25
- 0.25/2.25
- 3.75/4.50
- 3.00/2.00

RWE core markets

Growth markets under observation

Additional markets especially for renewables business
RWE East proved successful business model in CEE/SEE regional companies

Corporate culture
> Turning state owned monopolies into competitive players
> Living responsibility for our people (career development and work safety)
> Creating transparency

> Restructuring the organization (focused, leaner, faster)
> Enabling best practice transfer within RWE Group
> Implementing efficient IT infrastructure

Streamlined organization/processes

Key success factors

> Regulatory acknowledged asset investments to ensure sustainable and reliable energy supply
> Sales growth into the “2nd commodity” and new regional markets
> Cost optimization and cost control
> Optimized structure of personal
> Focus on procurement

Efficiency enhancements
Update on commodity markets

Board meets Investors Workshop

Essen, 18 October 2011

Dr. Bernhard Günther
Chief Financial Officer, RWE Supply & Trading GmbH
Power markets will see tight supply-demand situations especially in Q4 2011

I. Tighter German system with increased renewable impact
II. Delays in new build commissioning
III. Increasing cross border dependency
IV. Higher spike potential in tight supply-demand situations
V. Carbon Crash
VI. RWE Supply & Trading – commercial heart of RWE
Forwards were influenced by market uncertainty and overreaction after Fukushima and nuke moratorium.
However, German phase out of nuclear seems to be reflected in long-term power prices now

> Power forward curve flipped from contango into backwardation due to nuke moratorium, decreasing fuel contango, renewables capacity growth and delay of coal new-builds
Renewables feed-in will set higher risk premiums due to increasing price spikes

Wind & solar impact on German power price

Low prices due to ex-Hurricane Irene followed by high prices with low renewables feed-in
Germany’s federal grid regulator sees a deficit of 6.6 GW in 2011 and new hard coal capacity not before 2013

Source: BNetzA, Report on the need for a reserve power plant, 31 Aug 2011
Germany became a net importer

> In 2010 Germany was exporter in Q1, Q2 and Q4, especially in Dec 2010
Germany is now more exposed to weather and availability effects from abroad

> Increased import dependency due to the nuke phase out, especially towards France

> Import of further sensitivity towards French nuclear unavailability in addition to domestic revisions in Germany

> Import of further weather sensitivity in addition to large domestic wind, solar and temperature sensitivity
  - French temperature sensitivity
  - Nordic and Alpine hydro sensitivity

> Import of additional gas sensitivity from the Netherlands (and further links to UK and Nordic via BritNed and NorNed cables)

> Increasing swing character of Polish and Czech border as well as Hungarian and Slovenian border via Austria (Hungarian and Czech nuke availability, hydro in Balkans)
French nuke unavailability in Q4 2011 could further stress supply situation

> Availability in France for Q4 2011 looks challenging due to a back loaded revision programme in 2011. Revisions ranged below average levels for Q2 and Q3 (except for Sept.), but exceed average levels in Q4 2011 (especially in October and November)

> If a delay of French revisions further into Q4 occurs in parallel with cold weather conditions, the spike potential increases significantly as Germany will rather amplify than mitigate the spike potential due to the nuke phase-out

> In 2011, nine 10-year-inspections leading to a 100-day outage period are planned, which is three 10-year inspections above the long-term average

> Aging French nuclear fleet and possible strike actions could further increase availability problems

![Unavailable French nuclear capacity chart](chart.png)
Loss of confidence in the carbon market due to over-regulation and uncertainty about Europe’s economic outlook

> Before June, carbon prices had been supported by factors such as the start of the trading period for 2013, the nuclear catastrophe at Fukushima and the German moratorium.

> On 23rd and 24th June carbon prices collapsed by -20% from 15 €/t to 12 €/t due to fears that the EU’s newly-agreed energy efficiency regulations could prove too successful and undermine the carbon market.

> Further macroeconomic uncertainty and stalling GDP growth expectations triggered further carbon sell-offs in July through October. The prospect of falling industrial emissions due to a double-dip global recession, twinned with rising fears about carbon allowance oversupply took front-year allowances down to their lowest level for two and half years at 10.10 €/t in the beginning of October.
Midstreamers are managers of complex portfolios rather than just intermediary between producer and end-customer

Main drivers for the current situation

- Low demand due to the economic slump
- Higher supply: new gas sources, e.g. through unconventional gas (shale gas) in the US, led to more LNG on the global market
- What will trigger major changes to the current situation?
  - Sustainable economic recovery in Europe
  - Supplier reaction (e.g. production cuts)
  - Increasing demand from Asia for LNG (new markets like India and China)

Development of TTF gas price and brent oil price since January 2009

1 Relative development of the TTF and brent forwards for the years 2011 and 2012 since January 1, 2009.
To compare both, the brent oil price is normalised to the TTF gas price as of January 1, 2009. The curves simply illustrate the development of the market prices which should give a rough indication about the gas-to-oil-spread situation. The real gas-to-oil-spread exposure depends on the individual contract details and will deviate from this slide.

Prices until August 4, 2011

RWE Supply & Trading GmbH | Dr. Bernhard Günther | 18 October 2011
Gas trading: performing in an evolving market

> Trading volume: approx. 7.398 TWh/a
> Auction of physical and virtual gas storage facilities for market development
> Active trader at all major gas trading hubs and exchanges - including the Dutch TTF and the UK’s NBP
> Trading activities open up opportunities:
  - Hedging of upstream positions
  - Utilisation of spreads with other commodities
> Leading European natural gas markets from the old world towards competitive markets

Countries where RWEST trades
Exchanges RWEST is active on
Exchanges on which RWEST plans to become active
LTCs are virtually paid in oil: When gas is sold at fixed prices you have to hedge the oil risk accordingly

Background information

> When selling gas from long-term oil-indexed gas contracts to the gas wholesale market the midstream companies receive a fixed amount of money via the sold gas forward but would still have to pay a variable amount of money depending on the oil price (virtually pay in oil).

> This means: The financial short position in oil will loose on rising oil prices.

> To hedge this risk you have to buy oil swaps (forwards) from a third party (e.g. a bank) at the same time when selling the gas (e.g. at the TTF).

> This is comparable with buying hard coal forwards at the same time when selling forward electricity generation from a hard-coal fired power plant.
We optimise our gas portfolio in a similar way to power generation

> Regular price revisions are included in most long-term contracts

> In some contracts, additional “Joker” price revisions can be triggered in case of exceptional price differentials

> Locking in spreads by selling the gas on the wholesale market and buying an oil swap depending on market liquidity

> Optimising of contract flexibility:
  - Minimum and maximum volumes per hour, day, year, etc.
  - Carry forward/Make-up: moving volumes from one contract year to another
  - Delivery point with option to swap location

> Use capacity of long- and short-term storage capacities
The additional value of optimizing our Gas Asset Portfolio

**Usual situation**

- Oil-indexed contract is in-the-money in winter
- And out-of-the-money in summer

**Unusual situation**

- Oil-indexed contract is out-of-the-money in winter: even more than the summer
- Contract Off-take is modified and subsequently re-hedged

Changing Gas-to-Oil Spreads allow to re-optimize an already fully hedged gas purchase contract: money can be made without taking on risk
In these challenging times RWEST plays a fundamental role in RWE's value chain

Provides external **market based prices** for internal risk and position transfer within RWE – ensuring that hedges by the Operating Companies are “**market neutral**” priced.

Provides high quality, rigorous and insightful **market analysis** from traders and analysts with **commercial accountability**.

Ensures that **commodity positions are measured and valued correctly** through proper risk control functions.

Manages the **asset-based commodity positions of the Group** and consolidates these positions with **proprietary positions**, as single face to the wholesale market.

**Optimises** the fuel **procurement**, the commercial aspects of power **plant operations**, the use of gas **storage facilities** and **transportation rights**, and the **long-term commodity contracts** of the Group.

**RWEST unites** the natural focus on obtaining the **best potential value** from the **RWE Group's physical assets** with the benefits of **proprietary trading**.
Backup
RWEST maintains a highly developed organisation in order to monitor and manage the „hard facts“

- Serious about risk management - 200 employees dedicated to risk control functions. CFO reports directly into the RWE AG CFO to avoid conflicts of interest
- 1 – 5 relation (traders vs. non-trading function)

**Front Office**
- Fundamental analysis (incl. weather)
  - e.g. power plant availability, marginal costs, temperature driven load profile
- Quantitative models / trading strategies
  - e.g. fundamental models (Merit Order), quantitative models based on spreads, weather strategies
- Organisational Set-up
  - e.g. team trading approach (no lonesome wolves desks)

**Risk**
- Daily identification, assessment & monitoring of P&L and market risks
- Limit granting and monitoring
- Certification / review of methods

**Back Office**
- Trade processing / settlement
- Margin management / clearing
- Counterparties management

**Finance**
- Accounting and Financial Reporting

**Legal**
- Assessment of material legal risks

* Chief Commercial Officer
Besides trading RWEST is also a successful partner in energy solutions for the future

> RWE Supply & Trading is responsible for the commercial optimisation of all RWE’s midstream gas assets: long-term gas procurement contracts, capacity contracts in pipelines and storage, as well as LNG assets

> We are committed to addressing security of supply by:

– **diversifying** supplies of conventional fuels
– **developing** commercially viable sources of sustainable energy
– **delivering** energy as efficiently and securely as possible.
– **pioneering** global energy projects. We actively shape the future of the industry
What sets us apart: we are an organisation based on principles

> Adhere to the highest standards of professional excellence in all our business endeavours

> Strive to set benchmarks for the energy industry

> Create sustainable value for external and internal stakeholders by leveraging physical and financial opportunities

> Actively support greater transparency in European and global energy markets
Renewables market outlook and RWE Innogy’s position

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Essen, 18 October 2011

Dr. Hans Bünting, Chief Financial Officer, RWE Innogy GmbH
Paul Coffey, Chief Operating Officer, RWE Innogy GmbH
## Strong European footprint with focus on wind and hydro
Innogy’s operational capacities: Accounting view + PPA, Q2 2011

<table>
<thead>
<tr>
<th>In MWel</th>
<th>Onshore Wind</th>
<th>Hydro</th>
<th>Offshore Wind</th>
<th>Biomass</th>
<th>Biogas</th>
<th>Solar</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>445</td>
<td>376</td>
<td>107</td>
<td>1</td>
<td></td>
<td>1</td>
<td>930</td>
</tr>
<tr>
<td>UK</td>
<td>326&lt;sup&gt;1)&lt;/sup&gt;</td>
<td>69</td>
<td>150&lt;sup&gt;1)&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td>545</td>
</tr>
<tr>
<td>Spain</td>
<td>400</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>412</td>
</tr>
<tr>
<td>Netherlands</td>
<td>201</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>201</td>
</tr>
<tr>
<td>Poland</td>
<td>108</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>108</td>
</tr>
<tr>
<td>France</td>
<td>36</td>
<td>45</td>
<td></td>
<td></td>
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<td></td>
<td>81</td>
</tr>
<tr>
<td>Italy</td>
<td>51</td>
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<td></td>
<td>51</td>
</tr>
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<td>Switzerland</td>
<td>23</td>
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<td></td>
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<td></td>
<td>23</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Portugal</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td><strong>Total RWE Innogy</strong></td>
<td><strong>1,567</strong></td>
<td><strong>541</strong></td>
<td><strong>150</strong></td>
<td><strong>127&lt;sup&gt;2)&lt;/sup&gt;</strong></td>
<td><strong>1</strong></td>
<td><strong>1</strong></td>
<td><strong>2,387</strong></td>
</tr>
</tbody>
</table>

(data as at 30 June 2011)

<sup>1)</sup> 326MW = 111MW RWE Innogy wholly owned assets + 196MW of Zephyr assets + 19MW of Green GECCO assets. RWE Innogy operates 611MW of UK wind capacity, of which 391MW (331 MW onshore/ 60 MW offshore) is owned by Zephyr Investments Ltd (1/3 owned by RWE Innogy). Of the 331MW onshore, 196MW is 100% contracted to RWE npower through PPAs (power purchase agreements). An additional 135MW is contracted to the NFPA (Non-Fossil Fuel Purchasing Agency). Of the offshore capacity of 150MW, 90MW is wholly owned by RWE Innogy. 60MW offshore capacity is owned by Zephyr and is 100% contracted to RWE npower through a PPA. Of the onshore capacity, 19MW is owned by Green GECCO GmbH & Co KG (51% owned by RWE Innogy) and is contracted to RWE Npower Renewables Ltd through a PPA.

<sup>2)</sup> Including 32MW of Biomass/fossil mix, 14MW of fossil capacity

<sup>3)</sup> Includes only Biogas used directly in power generation

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**New Applications**

- **Poland**: 326MW = 111MW RWE Innogy wholly owned assets + 196MW of Zephyr assets + 19MW of Green GECCO assets. RWE Innogy operates 611MW of UK wind capacity, of which 391MW (331 MW onshore/ 60 MW offshore) is owned by Zephyr Investments Ltd (1/3 owned by RWE Innogy). Of the 331MW onshore, 196MW is 100% contracted to RWE npower through PPAs (power purchase agreements). An additional 135MW is contracted to the NFPA (Non-Fossil Fuel Purchasing Agency). Of the offshore capacity of 150MW, 90MW is wholly owned by RWE Innogy. 60MW offshore capacity is owned by Zephyr and is 100% contracted to RWE npower through a PPA. Of the onshore capacity, 19MW is owned by Green GECCO GmbH & Co KG (51% owned by RWE Innogy) and is contracted to RWE Npower Renewables Ltd through a PPA.

- **Italy**: Including 32MW of Biomass/fossil mix, 14MW of fossil capacity

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**Map**

- **Germany**: 445MW
- **UK**: 326MW
- **Spain**: 400MW
- **Netherlands**: 201MW
- **Poland**: 108MW
- **France**: 36MW
- **Italy**: 51MW
- **Switzerland**: 23MW
- **Czech Republic**: 20MW
- **Portugal**: 16MW

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**RWE Innogy GmbH | Dr. Hans Bünting, Paul Coffey | 18 October 2011**
EU 27 member states committed to reach national renewable energy targets of EU Directive 2020

EU Directive & National Allocation Plans

> Member states of EU 27 target a share of 34% of renewable energy sources (RES) in electricity production by 2020

> Most member states expect to reach or even to exceed their national targets from RES

Electricity production EU 27 [TWh]

- Onshore: 2,640
- Offshore: 49
- Onshore: 350
- Offshore: 74
- Total Renewable Energy Sources (RES): 650

Source: National Allocation Plan (NAP) of member states, EU RES Directive 2020
Even at RWEI’s moderate outlook, RES will be the one growth market in electricity production in EU 27

RWEI outlook for growth in electricity production from RES

- **EU target:** 1,200

**EU 27**

- **2010:**
  - Solar / Other: 49
  - Biomass: 289
  - Offshore: 106
  - Onshore: 142
  - Hydro: 380

- **2020:**
  - Solar / Other: 114
  - Biomass: 367
  - Offshore: 165
  - Onshore: 397
  - Hydro: 1,031

- **2030:**
  - Solar / Other: 1,340
  - Biomass: 1,700
  - Offshore: 2,000
  - Onshore: 2,350
  - Hydro: 2,600

**Germany**

- **2010:**
  - Solar / Other: 52
  - Biomass: 19
  - Offshore: 19
  - Onshore: 19
  - Hydro: 350

- **2020:**
  - Solar / Other: 54
  - Biomass: 64
  - Offshore: 26
  - Onshore: 35
  - Hydro: 164

- **2030:**
  - Solar / Other: 219
  - Biomass: 150
  - Offshore: 43
  - Onshore: 24
  - Hydro: 18

**National target:** 217
Reaching of EU growth targets requires contribution of all renewable technologies

RWEI base case for growth of RES until 2020 in EU27

* LCOE = DEVEX + CAPEX + OPEX (incl. fuel costs)
No slowdown in RES growth can be seen even as there would be good reasons

Financial and economical crisis

Limited public acceptance for energy projects of any kind

Growing scepticism about climate change
Regulatory support for RES unexpectedly stable in view of economical and financial crisis

Continuous development of support mechanisms but no general challenging of RES support

- **Germany**: Jan, Aug 2010; Jan, Aug 2011; Jan 2012
- **France**: Nov 2008; Dec, Jan 2009; Aug 2010; Aug Oct 2011; Sep/Oct 2012
- **Italy**: Aug 2008
- **UK**: Oct 2008; Jun 2009; Jul 2011
- **Romania**: Oct 2008; Aug 2010
- **Poland**: Apr 2009; Aug 2011
- **Netherlands**: Apr 2008; Apr 2009; Mar 2010; Nov 2011; Dec 2012
- **Spain**: Apr 2008; Apr 2009; Feb 2010; Nov 2011; Dec 2012

Legend:
- Orange: Feed-in tariff (FIT)
- Purple: Green Certificates
- Green: Premium tariff
- Light green: FIT and/or premium tariff
- Gold: Considerable change of RES regulation
- Light gray: Moderate change of RES regulation
- Blue: Expected change

RWE Innogy GmbH | Dr. Hans Bünting, Paul Coffey | 18 October 2011
RWEI target markets provide large growth potential at favourable regulatory support

in TWh, Base Case

UK +11% p.a.

- 31 TWh in 2010
- 90 TWh in 2020

- 290% growth

NL +10% p.a.

- 12 TWh in 2010
- 31 TWh in 2020

- 260% growth

DE + 5% p.a.

- 108 TWh in 2010
- 176 TWh in 2020

- 63% growth

IT +4% p.a.

- 61 TWh in 2010
- 90 TWh in 2020

- 48% growth

PL +13% p.a.

- 7 TWh in 2010
- 24 TWh in 2020

- 343% growth

DE + 5% p.a.

- 108 TWh in 2010
- 176 TWh in 2020

- 63% growth

IT +4% p.a.

- 61 TWh in 2010
- 90 TWh in 2020

- 48% growth

PL +13% p.a.

- 7 TWh in 2010
- 24 TWh in 2020

- 343% growth

DE + 5% p.a.

- 108 TWh in 2010
- 176 TWh in 2020

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IT +4% p.a.

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IT +4% p.a.

- 61 TWh in 2010
- 90 TWh in 2020

- 48% growth
Support mechanisms still enable attractive returns

IRR in % post tax for target markets

**Onshore**
- > 10.5%
- > 8.5% and ≤ 10.5%
- > 7.5% and ≤ 8.5%
- ≤ 8%
- Currently no projects

Reduced by future feed-in tariff (FIT)

**Biomass**
- > 10%
- > 8% and ≤ 10%
- ≤ 8%
- Currently no projects

Reduced by future FIT

**Offshore**
- > 10%
- > 8% and ≤ 10%
- ≤ 8%
- Currently no projects

**Hydro**
- > 10%
- > 8% and ≤ 10%
- ≤ 8%
- Currently no projects
Except for large hydro, RES require significantly higher electricity prices to be “in the market”

* European average excl. balancing costs (source IEA/OECD, 2005). LCOEs may considerably vary across countries and within technologies.
Under RWEI’s portfolio strategy four core technologies are mainly followed

<table>
<thead>
<tr>
<th>Core technologies</th>
<th>Growth potential</th>
<th>Base load</th>
<th>Technical risk</th>
<th>Profitability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydro</td>
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<td><img src="score_base_load_hydro.png" alt="Base Load Score" /></td>
<td><img src="score_technical_risk_hydro.png" alt="Technical Risk Score" /></td>
<td><img src="score_profitability_hydro.png" alt="Profitability Score" /></td>
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<td><img src="score_profitability_biomass.png" alt="Profitability Score" /></td>
</tr>
</tbody>
</table>

**Description**

- **If available, Hydro is most economical and reliable option**
- **Onshore wind is “mainstream” technology where growth is limited due to competition on projects rights and limited public acceptance**
- **Offshore wind is main large scale technology where RWE can benefit from its experience and ability to realise large and complex energy projects**
- **Growth in biomass requires integrated approach over whole value chain**

**Implication**

- „Just do it“
- „Real growth“
- „Energy utility core skill“
- „Step by step“
Consequent risk diversification across technologies, regions and support mechanisms

**… technology**
- New Applications
- Hydro
- Offshore Wind
- Onshore Wind
- Biomass

**… country**
- Germany
- UK
- Netherlands
- Spain
- Italy
- Other

**… support mechanism**
- Power Price only
- Premium Tariff
- Feed-In Tariff (FIT)
- New Applications
- Green Certificates

**… meteorological risk**
- New Applications
- Biomass
- NWE Hydro
- SWE Hydro
- SOE Wind
- NOE Wind
- UK Wind
- SWE Wind
For example, an “UK-Italy weather hedge” reduces maximum exposure to wind yield from 19% to 5%

> Exemplary reduction through natural hedge at balanced UK-Italy wind portfolio
> Standard deviation more than halved through natural hedge (4.3% compared to 9.0%)
> Basic reason: in Europe wind yield across countries is not always positively correlated but partly uncorrelated and even negatively correlated such as for UK and Italy

* Simulation based on wind data from 1980 to 2009
Summarising remarks for RWE Innogy

Focus on the most promising renewable technologies **Wind**, **Hydro** and **Biomass** complemented by selected investment in promising new technologies

Continued technological and geographical **diversification**

Annual **capital expenditure** into renewables >1 bn €

**Targets confirmed**

- Total Revenue >1 bn € in 2012
- 500 m € Operating Result by 2014
- Positive value contribution in 2016