innogy

(MDAX, Renewables)

WARBURG RESEARCH

Buy	
EUR 42.00	
Price	EUR 37.33
Upside	12.5 %

Value Indicators:	EUR
SotP:	42.00

Share data:	
Bloomberg:	IGY GR
Reuters:	IGY.DE
ISIN:	DE000A2AADD2

Description:
European utillity with a particular focus on renewables, retail and grid & infrastructure

Market Snapshot:	EUR m
Market cap:	20,736.1
No. of shares (m):	555.6
EV:	37,937.3
Freefloat MC:	4,810.8
Ø Trad. Vol. (30d):	11.34 m

Shareholders:	
Freefloat	23.2 %
RWE AG	76.8 %

Risk Profile (WRe):	2017e
Beta:	1.0
Price / Book:	2.1 x
Equity Ratio:	24 %
Net Fin. Debt / EBITDA:	3.0 x
Net Debt / EBITDA:	3.9 x

High-yielding play on energy 2.0; Initiation with Buy

Innogy, the "clean" carve-out from RWE AG, is a poster child for German utility companies. The company is not burdened by nuclear liabilities, has limited exposure to commodity prices and is largely CO_2 free. Innogy offers a unique mix of assets. Its valuable grid business allows the company to benefit from stable and highly visible cash flows while growth can be pursued in renewables and the energy+ business. We therefore regard innogy as an attractive and future-proof play on the global transformation of the energy industry. Furthermore, we believe innogy comes with an attractive option value in the form of its market leading positioning in e-mobility, which is expected to make a considerable contribution to group profitability from FY 2020 onwards. In the near term, we expect our investment case to be driven by **(1)** a strong surge in capacity growth in renewables and **(2)** profit growth driven by the energy+ business and a modest recovery in the UK retail unit, which now seems more likely as the risk of an industry-wide price cap has eased following the UK general election.

Strong surge in capacity additions to drive profitability in FY 2018: Our analysis of the company's development pipeline has led us to the conclusion that more than 400 MW of capacity (pro-rata view) should come online by the end of FY 2018. More importantly, the expected surge in new renewables capacity, driven by the commissioning of new onshore and offshore wind assets, should boost the division's FY 2018 adj. EBITDA by EUR 100m. Further down the road we see striking growth opportunities in solar, driven by a steady decline in levelized costs of energy, which should secure innogy's growth prospects despite falling subsidy levels for offshore.

Modest recovery in UK retail and continued growth in energy+ business to drive retail earnings: In the UK, the risk of an industry-wide price cap has eased significantly, in our view, following the weak election result of the Conservative Party. We therefore believe that the UK retail unit will pass the trough in FY 2017. We expect a modest recovery in profitably and estimate an incremental improvement to the tune of EUR 70m by FY 2019. With respect to the energy+ business, we expect further tailwind of EUR 60m through 2019, implying that the business should add some EUR 170m to the division's adj. EBITDA result by FY 2019.

Market-leading position in e-mobility represents massive option value: Innogy holds a market-leading position in e-mobility in Germany with 4,300 charging points (CP) (of which 2,100 are publicly accessible). This translates into a market share of roughly 30%. As new CO_2 emission targets will be introduced for new car registrations from 2020 onwards, growth in electric vehicles is set to skyrocket. We expect innogy to capitalize on this with its one-stop-shop offering and its first-mover advantage. Clearly, e-mobility has the potential to become a significant business for innogy. Assuming that by 2050 roughly 90% of vehicles in Germany are EVs, the potential additional electricity demand in our scenario calculation could amount to 104 TWh, translating into market potential of EUR 31.2bn, purely from electricity sale.

High dividend yield underlines attractive valuation: Thanks to the company's strong focus on creating shareholder value, the company intends to pay out 70-80% of its adj. net income, one of the highest payout ratios of European utilities. Thus, we forecast a dividend yield of 5.3% in FY 2018. Finally, our DCF-based sum-of-the-parts valuation points to fair value of EUR 42 per share, implying 13% upside potential. We initiate coverage with a Buy rating and a PT of EUR 42.

Rel. Performance vs MDAX:	
1 month:	5.5 %
6 months:	6.1 %
Year to date:	3.7 %
Trailing 12 months:	n/a

Company events:	
13.11.17	Q3

FY End: 31.12. in EUR m	CAGR (16-19e)	2013	2014	2015	2016	2017e	2018e	2019e
Sales		48,589.0	45,681.0	45,568.0	43,611.0	42,797.4	42,777.6	42,745.0
EBITDA adj.	2.1 %	4,194.0	4,297.0	4,521.0	4,310.0	4,429.3	4,573.8	4,591.6
Margin		*8.6 %*	*9.4 %*	*9.9 %*	*9.9 %*	*10.3 %*	*10.7 %*	*10.7 %*
EBIT adj.	3.7 %	2,844.0	2,859.0	3,050.0	2,735.0	2,949.3	3,065.3	3,052.4
Margin		*5.9 %*	*6.3 %*	*6.7 %*	*6.3 %*	*6.9 %*	*7.2 %*	*7.1 %*
Net inc. adj.	10.6 %	894.0	1,698.0	1,613.0	1,122.8	1,330.7	1,459.0	1,520.5
EPS	-8.7 %	n.a.	n.a.	3.23	4.15	2.92	3.12	3.16
EPS adj.	-3.8 %	n.a.	n.a.	3.23	3.08	2.40	2.63	2.74
DPS	8.8 %	0.00	0.00	0.00	1.60	1.80	1.97	2.06
Dividend Yield		n.a.	n.a.	n.a.	4.7 %	4.8 %	5.3 %	5.5 %
FCFPS		n.a.	n.a.	1.46	2.32	1.31	1.72	2.59
FCF / Market cap		n.a.	n.a.	n.a.	6.9 %	3.5 %	4.6 %	6.9 %
EV / Sales		n.a.	n.a.	n.a.	0.7 x	0.9 x	0.9 x	0.9 x
EV / EBITDA adj.		n.a.	n.a.	n.a.	6.8 x	8.6 x	8.3 x	8.2 x
EV / EBIT adj.		n.a.	n.a.	n.a.	10.7 x	12.9 x	12.4 x	12.3 x
P / E		n.a.	n.a.	n.a.	8.1 x	12.8 x	12.0 x	11.8 x
P / E adj.		n.a.	n.a.	n.a.	11.0 x	15.6 x	14.2 x	13.6 x
FCF Potential Yield		n.a.	n.a.	n.a.	13.3 %	9.5 %	9.7 %	9.9 %
Net Debt		17,561.0	18,680.0	19,992.0	17,042.0	17,201.2	17,244.8	16,901.4
ROCE (NOPAT)		6.2 %	5.1 %	4.8 %	6.2 %	7.3 %	7.3 %	7.1 %
Guidance:		Guidance: Adj. EBITDA of about EUR 4.4bn; adj. net income of > EUR 1.2bn						

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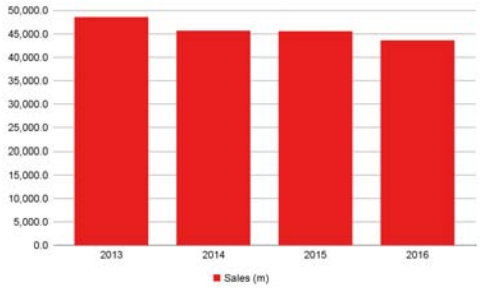
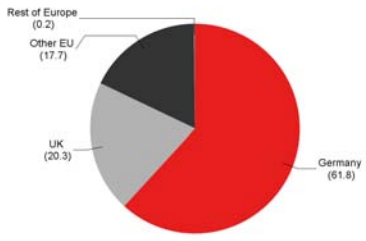
Sales development
in EUR m



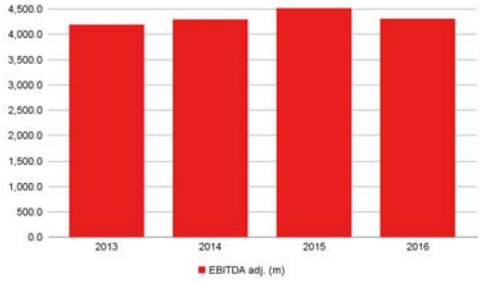
Source: Warburg Research

Sales by regions
2016; in %



Source: Warburg Research

Adj. EBITDA development
in EUR m



Source: Warburg Research

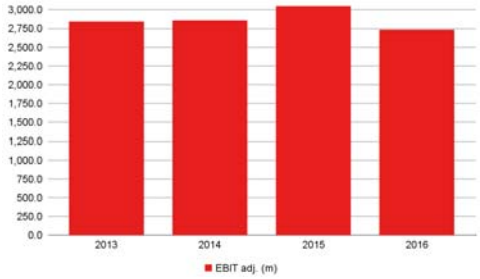
Company Background

- As the "clean carve-out" of RWE (IPO in Oct 2016), innogy operates three core segments Renewables, Retail and Grid & Infrastructure and contributes roughly 90% to RWE's group revenue.
- The company is active in its core markets in Germany, UK, the Netherlands / Belgium, Hungary, Poland and several other Eastern European countries. It owns a grid network of 574,000km and serves c. 23m retail customers.
- innogy also boasts a renewables portfolio with an installed capacity of > 3.3 GW across Europe, thereof 75% onshore and offshore wind and 23% hydro energy.
- Finally, innogy capitalizes on the e-mobility trend via its market leading charging infrastructure for electric vehicles, offering more than 5,700 charging points across Europe.

Competitive Quality

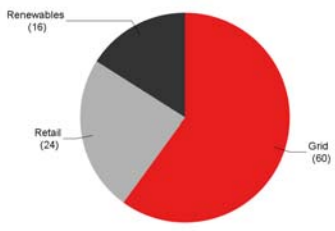
- Innogy represents an unique mix of assets, combining stable and highly visible cash flows with a platform to drive growth in global energy trends such as renewables and e-mobility
- innogy holds various market leading positions, e.g. #1 electricity DSO in Germany and #2 for gas; #1 gas DSO in Czech Republic and #2 electricity DSO in Hungary. Also, innogy is the #1 electricity retailer in Germany.
- Roughly 60% of the group's EBITDA is (quasi-)regulated, minimizing downside risk and providing a high degree of visibility.
- Thanks to its smart group structure, the company is not burdened by nuclear liabilities, has limited exposure to commodity prices and is largely CO2-free. Innogy thus benefits from a future-proof business model.
- Finally, innogy's wide-ranging activities in e-mobility represent a highly attractive option value which could materialize once EV numbers start growing exponentially.

Adj. EBIT development
in EUR m



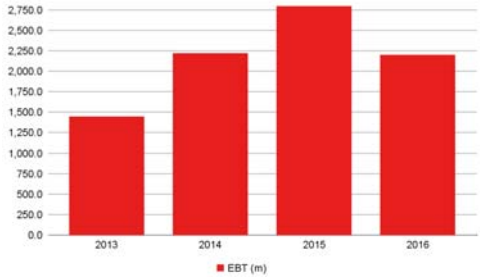
Source: Warburg Research

Adj. EBITDA by segments
2016; in %



Source: Warburg Research

EBT development
in EUR m



Source: Warburg Research

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Summary of Investment Case

Investment triggers

- Our analysis of innogy's well filled development pipeline has led us to the conclusion that innogy is set to commission more than 400 MW of new onshore and offshore wind assets in FY 2017 and FY 2018, thereof more than 200 MW in FY 2017 alone (including the 90 MW onshore wind project Zuidwester). The expected surge in renewable capacity is set to contribute some EUR 100m, boosting the division's FY 2018 EBITDA result.
- While we are not overly optimistic about the mid-term prospects of the UK retail market, we believe innogy's UK retail unit will pass the trough in 2017 and we are assuming an incremental recovery in profitability from a very low base (adj. EBITDA of EUR -11m in FY 2016). Hence, we expect the UK unit to benefit from a recovery impact of c. EUR 70m on adj. EBITDA level through 2019.
- Finally, an investment in innogy entails an attractive option value in innogy's energy+ product offering, which is likely to make a notable contribution to profitability from 2020 onwards. As part of energy+, innogy boasts a market leading position in e-mobility in Germany with a market share of 30%. In the near-term, we assume that the EBITDA contribution from energy+ products, which represent the non-traditional retail business, will hit EUR 170m by FY 2019, implying a EUR 60m boost to adj. EBITDA.

Valuation

- We value innogy based on a DCF-based SotP approach, which yields a fair value of EUR 42 per share. The bulk of the company's value stems from its Grid & Infrastructure business which represents roughly of 65% of our derived enterprise value.
- To cross-check our SotP valuation, we also conducted an absolute valuation, by way of a dividend discount model, which yields a fair value of EUR 42.5 per share.
- Finally, from our comparison of innogy's EV/IC ratio to the ROIC/WACC ratio (assuming a WACC of 5.5% for the group), we draw the conclusion the shares are not yet fairly valued.

Growth

- We forecast an adj. EBITDA CAGR of 3% between 2016-2019e driven by capacity growth in renewables, a modest recovery in UK retail, and strong growth in energy+ products.
- More importantly, in terms of dividend growth we anticipate a FY 2016-2019 CAGR of 8%, underlining the company's status as a dividend play with a FY 2017 dividend yield of c. 5%.

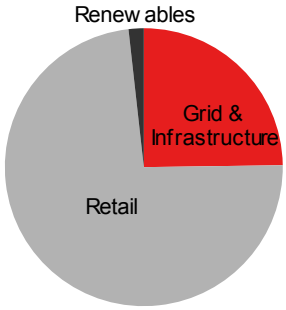
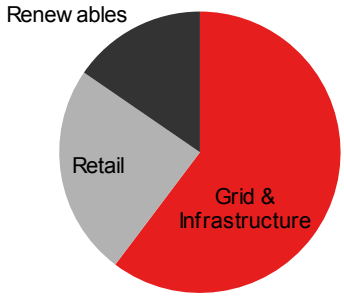
Competitive quality

- Innogy represents a unique mix of assets, combining stable and highly visible cash flows with a platform to drive growth in global energy trends such as renewables and e-mobility.
- The company can be described as a poster child for German utilities as it is not burdened by nuclear liabilities, has limited exposure to commodity prices and is largely CO_2 free and therefore represents a "clean" carve-out from RWE.
- The company holds various market leading positions in its three divisions: Innogy is the leading electricity DSO (distribution system operator) in Germany as well as the largest electricity retailer in Germany and the third-largest offshore wind operator in the world.
- Roughly 60% of group EBITDA is either regulated, quasi-regulated or subject to long-term contracts, minimizing downside risk and providing a high degree of visibility.

Warburg versus consensus

- Our FY 2018 and 2019 adj. EBIT estimates stand 2% and 1.5% above consensus, respectively.
- Nonetheless, our adj. net income estimates for FY 2018 and 2019, which is the base for the dividend, stand 11% and 12% above consensus, respectively. Thus, consensus looks too light with respect to the estimated adj. net income.

Company Overview

	Grid & Infrastrcture	Retail	Renewables
Segments			
Business description	Operation and maintenance of the electricity and gas distribution system	Supply of electricity to end-users	Electricity generation from renewable energy sources
Competitors	▪ E.ON SE ▪ UK Power Networks ▪ EWE AG ▪ Vattenfall AB	▪ EDF SA ▪ Scottish Power PLC ▪ Vattenfall AB ▪ E.ON SE	▪ Greencoat ▪ Brookfield Renewable Partners ▪ Dong Energy
Customers countries			
Revenue FY 16 in EUR m / %	10,761 / 24.7%	31,909 / 73.2%	768 / 1.8%
Adjusted EBIT FY 16 in EUR m / %	1.708 / 62.4%	844 / 30.1%	359 / 13.1%
Adjusted EBITDA FY 16 in EUR m / %	2,622 / 62.4%	1,057 / 25.15%	671 / 16.0%
Group sales and EBITDA	**Sales contribution segment (2016)** 		**EBITDA contribution segment (2016)** 

Source: Warburg Research

Competitive Quality

- Innogy's competitive quality lies in its unique mix of assets which allows the company to benefit from stable and highly visible cash flows while its business activities in renewables and e-mobility drive growth.
- Innogy represents a "clean" carve-out from RWE AG. It is free of nuclear liabilities, has limited exposure to commodity prices and is largely CO_2 free.
- Roughly 60% of group EBITDA is either regulated, quasi-regulated or subject to long-term contracts, minimizing downside risk and providing a high degree of visibility.
- The company holds various market-leading positions in its three divisions: Innogy is the leading electricity DSO in Germany as well as the largest electricity retailer in Germany and the third-largest offshore wind operator in the world.
- Finally, the company is very well placed to capitalise on the imminent transformation of the energy industry. Innogy's business set-up allows the company to benefit from global energy trends such as decarbonisation, decentralisation and digitalisation.

Attractive mix of cash generative and growth assets

Company overview

Ideal clean play on the global Energiewende

Innogy is a poster child for German utilities, in our view. In contrast to German peer E.ON, the company is unburdened by nuclear liabilities and has a very limited exposure to commodity prices. Moreover, as the company has virtually no exposure to fossil fuel and is largely CO_2 free, we regard innogy as an ideal play on the global *Energiewende*.

Thanks to innogy's smart business structure, the company is already future-proof and should even benefit from massive transformative changes in the energy industry.

Company overview by segments

innogy SE		
Renewables	**Grid & Infrastructure**	**Retail**
• Installed capacity of > 3.3 GW across Europe • #3 worldwide in offshore wind • Focus on wind energy (75% of production volume) and hydro (23%) • EBIT 2016: EUR 359m	• Grid length of more than 574,000 km • Distribution grids in five European countries • Development of smart (intelligent) grids • EBIT 2016: EUR 1,708m	• Over 16m electricity and 7m gas customers • Sale of energy and relating products (e.g. energy+) • EBIT 2016: EUR 844m

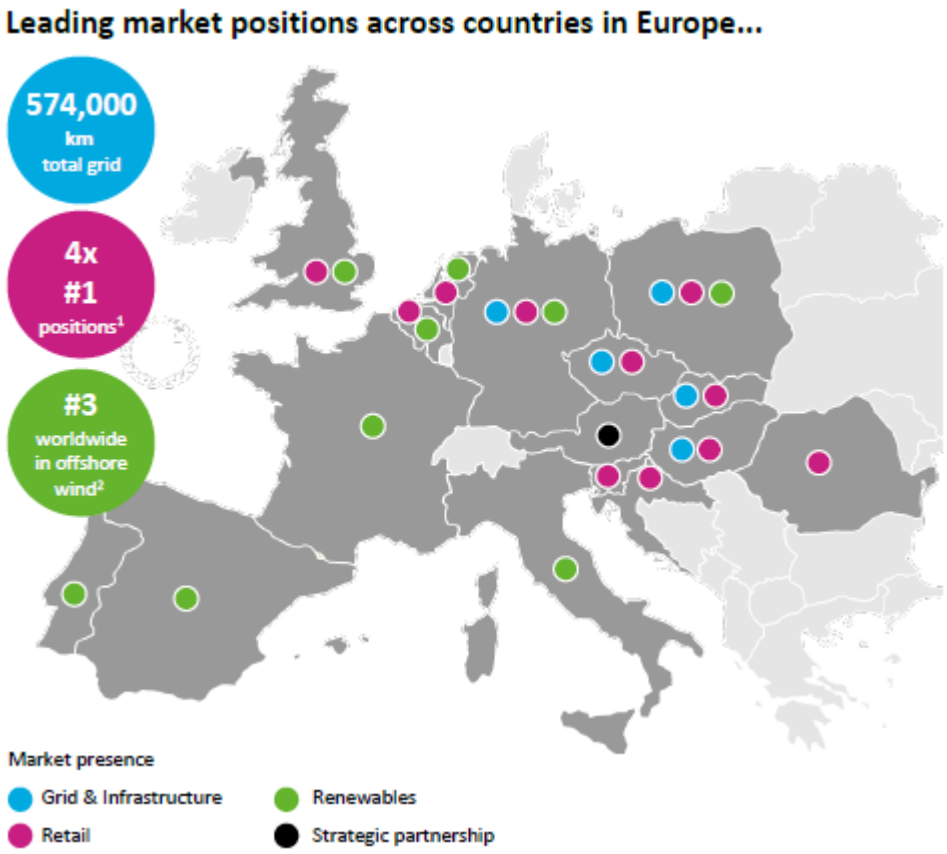
Source: Warburg Research

Excellent starting position

Innogy, created from an equity carve-out from RWE AG, starts from an excellent starting point. The company holds various leading market positions across its three divisions and across Europe.

- **Grid & Infrastructure:** Innogy is the number one electricity DSO (distribution system operator) and the number two gas DSO in Germany. Moreover, thanks to its strong footprint in Eastern European markets, innogy is also ranked as the number one gas DSO in the Czech Republic and the number two electricity DSO in Hungary.
- **Retail:** Innogy is the number one electricity retailer in Germany (number three for gas). In addition, innogy holds number one positions in the Netherlands (gas and electricity) and the Czech Republic (gas).
- **Renewables:** Finally, innogy boasts a sizeable renewables portfolio with a total capacity of 3.4 GW (accounting view, as of December 2016). Due to its high installed capacity, the company is ranked number three worldwide in the offshore space.

High competitive quality across all divisions

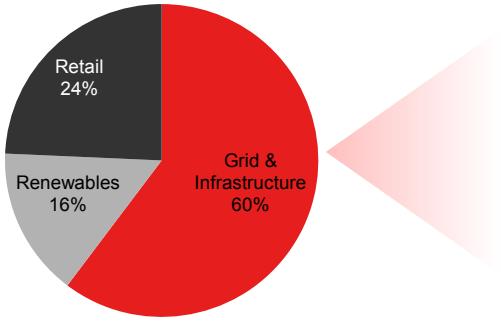


Source: innogy, Warburg Research

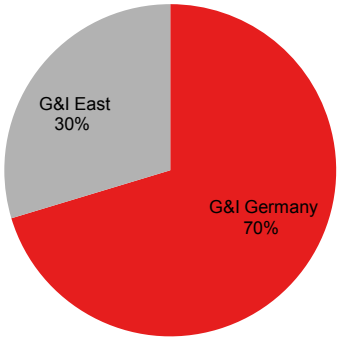
Grid & Infrastructure

Clearly, innogy's investment case revolves around its highly valuable grid business. With a regulated asset base (RAB) of EUR 13.3bn (thereof EUR 9.7bn in Germany) (in 2015) and its positioning as a leading DSO in Germany, the company is well placed to generate an average adjusted EBITDA of EUR 2.8bn between FY 2017 and 2019e, which represents roughly 60% of the group's EBITDA. More importantly, as some 80% of the Grid & Infrastructure division's EBITDA generation stems from regulated business, the segment provides an important cornerstone for the whole group and allows innogy to promote its business activities in promising areas such as renewables and e-mobility.

Group adj. EBITDA split by segments (FY 2016)



G&I adj. EBITDA contribution by regions (FY 2016)

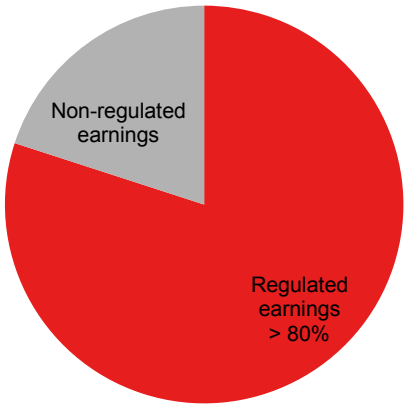


Source: innogy, Warburg Research

High proportion of regulated business

The regulated business is of paramount importance as it is unlikely to be negatively affected by macroeconomic developments or weather as the return on regulated asset base is largely independent of short-term developments. Hence, the earnings from regulated activities represent a comfortable cushion and ensure a certain profitability of the group.

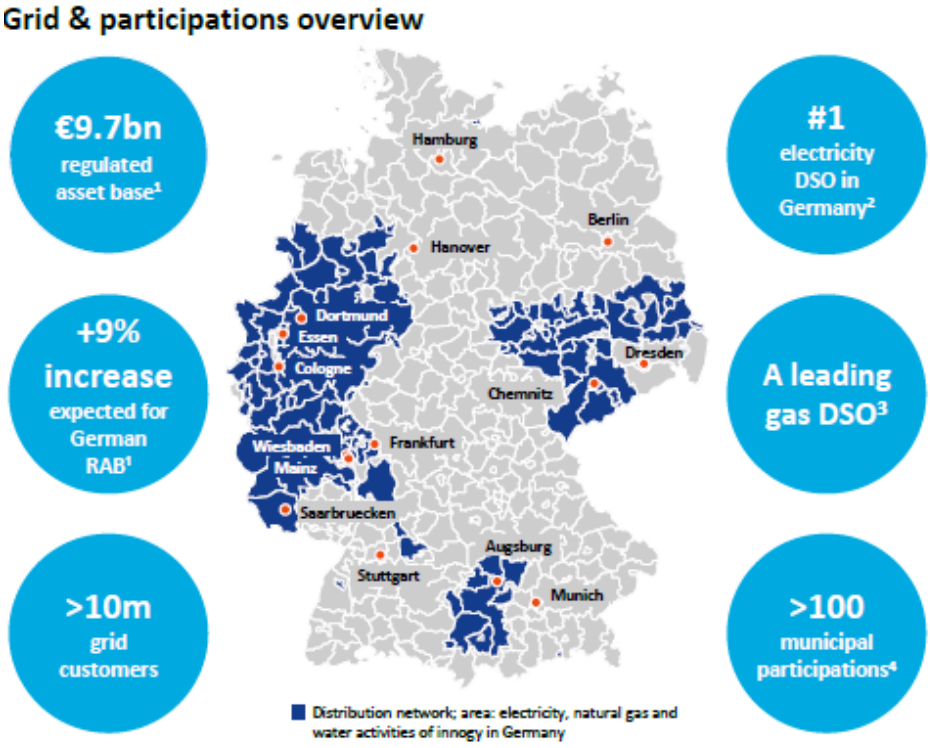
High share of regulated business drives predictable earnings



Source: Warburg Research

Innogy's grid business is particularly strong in Germany where the company benefits from its regulated asset base of EUR 9.7bn (2015).

Capitalizing on its leading German grid network



Source: innogy, Warburg Research

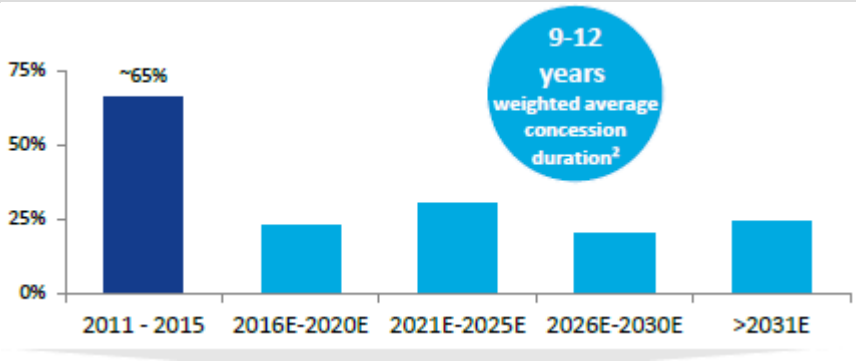
Recent concession renewals provide a great deal of certainty

Innogy's regulated business is based on about 3,800 concessions, which represent about two-thirds of the company's RAB in Germany. As can be seen below, the weighted average duration of the concession amounts to roughly 9-12 years. However, between

2011 and 2015 about 65% of innogy's concessions came up for renewal and the company managed to renew approx. 95% of the concessions, providing another indication of the company's high competitive quality.

Based on the company's successful participation in the tenders, innogy is set to benefit from fewer upcoming concession renewals (less than 25% of all concessions until 2020) which should provide investors with certainty that innogy is very likely to continue to benefit from a high portion of regulated business. According to innogy, the outcome of the tenders are based on quality factors and the company's advantage lies in providing technical solutions in a very timely manner as well as in its relationship management in existing concession contracts. Finally, about one-third of the company's RAB is not based on concessions (applies to high voltage grids, among others), which increases earnings stability as the corresponding asset base is not exposed to certain maturities.

High renewal rate of concessions ensures certainty



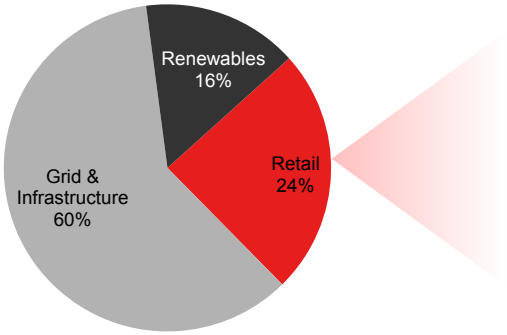
Source: innogy, Warburg Research

Retail

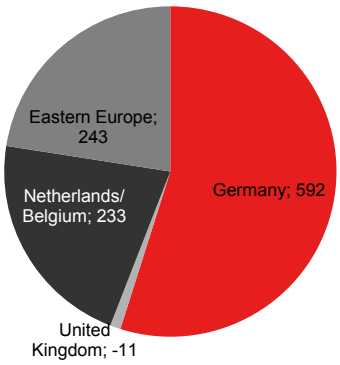
In addition to its important grid business; innogy benefits from a stable and diversified customer base in its retail segment, The retail division represents the second-largest earnings contributor, generating more than 20% of the company's group adj. EBITDA.

Innogy capitalizes on its strong positioning as one of the top electricity and gas retailers in Europe. Innogy's footprint can be regarded as particularly strong in its domestic market, since the retail unit in Germany generated an adj. EBITDA result of EUR 592m in FY 2016. Other important markets are the Netherlands and Belgium as well as various Eastern European countries while innogy's business activities in the UK currently face several internal and external issues. That is also reflected in the geographic breakdown of the segment's adj. EBITDA result.

Group adj. EBITDA split by segments (FY 2016)



Retail: adj. EBITDA contribution by regions (FY 2016)

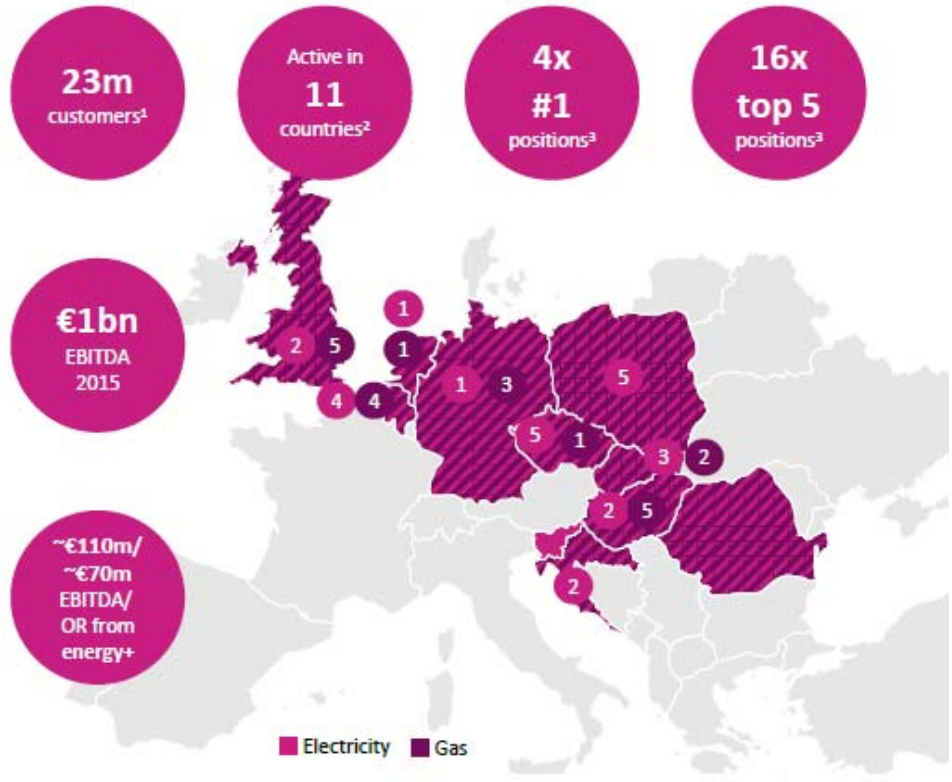


Source: innogy, Warburg Research

Strong market positioning in Europe

In terms of competitive quality, we believe it is important to highlight that Innogy's retail business holds four number one positions (Germany, the Netherlands and the Czech Republic) and several top five positions across various European countries.

Diverse customer base across Europe



Source: innogy, Warburg Research

Stable customer base despite recent difficulties

As already pointed out, innogy is set to benefit from a rather stable and diversified customer base. The chart below illustrates very well that despite recent difficulties in the UK market, the company's overall customer base has been broadly stable throughout the past years.

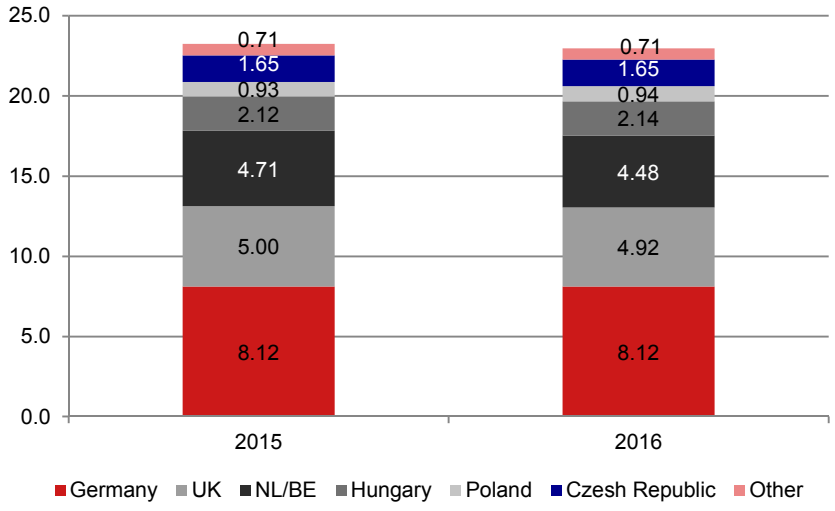
This is particularly true for Germany where innogy benefits from strong customer loyalty. In Germany, about 40% of all customers have been with innogy for more than 10 years while almost 30% have been with the company for between three and 10 years, underlining innogy's attractive positioning in its domestic market. Thus, in Germany innogy benefits from certain customer stickiness despite the availability of price comparison websites.

Stable customer base: development of number of contracts (in million)

customers supplied with electricity and gas count twice; Source: Warburg Research

The chart below illustrates that innogy's customer base is truly diversified, enabling the company to offset potential adverse developments in one market with more favourable developments in another, as was recently the case when contract losses in innogy's UK retail brand Npower were offset by a better than expected performance in other markets (e.g. eastern European markets, market entry in Belgium).

Retail: Customer numbers by regions (electricity and gas in millions)



Source: Warburg Research

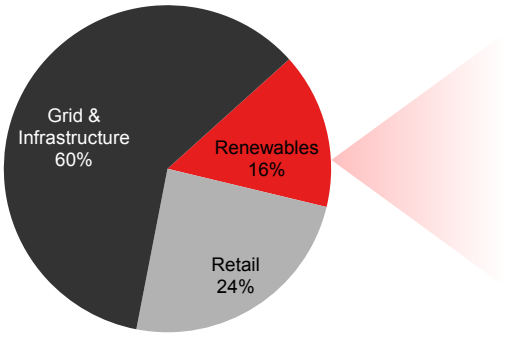
Early-mover advantage in addressing upcoming change in energy needs

In addition to the company's strong position in "traditional" retail activities, we believe innogy's competitive quality is also reflected in the company's ambitious aim to tap new markets, which are set to materialise with the global transformation of the energy industry. Innogy has bundled all the activities which are set to offer new energy solutions in its energy+ product offering. Energy+, which is largely incorporated in the company's German retail business, already generated an adj. EBITDA result of EUR 110m in FY 2015, underlining its importance for the group. Going forward, the trend of decentralised energy supply and the digitalisation of energy tools require new product offerings by energy retailers, which, in turn, offer new and highly attractive growth opportunities. Innogy is well positioned to benefit from these upcoming changes in the energy landscape. For instance, the company provides the most extensive charging infrastructure for electric vehicles in Germany. According to our estimates, with more than 4,300 charging points (thereof c. 2,100 publicly accessible CPs) in Germany, innogy holds a market-leading position with a market share of c. 28%. Thus, the company is well positioned to benefit from the mega trend of e-mobility.

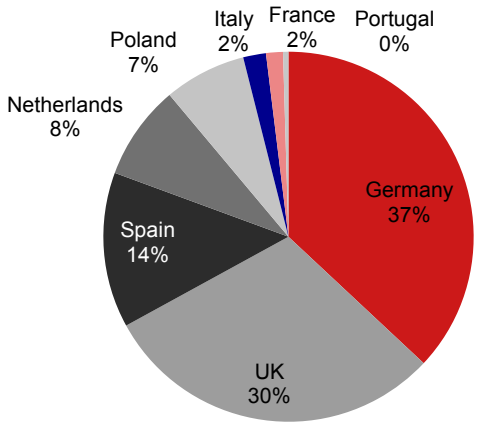
Renewables

Clearly, innogy's renewable energy business is expected to represent the key source of earnings growth and therefore the company's growth prospects are closely linked to a success in this segment. More importantly, the company starts from a position of strength as the company can capitalize on a large portfolio size of 3.4 GW (accounting view). As a result of the large portfolio size, a large portion of innogy's renewables earnings can be regarded as quasi-regulated earnings with its exposure to feed-in-tariffs and other price mechanisms such as green certificates and long-term power purchase agreements, which ensure certain price stability and thus a rather predictable income development. Thus, the division contributes to the group's stable and resilient financial profile.

Group adj. EBITDA split by segments (FY 2016)



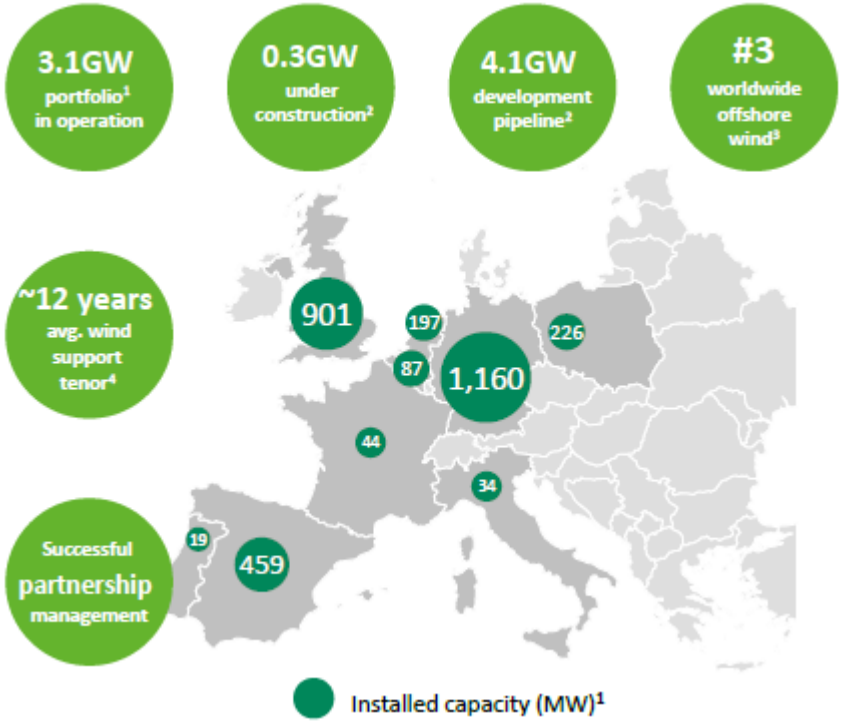
Capacity overview by regions (MW)



Source: innogy, Warburg Research

The chart below illustrates very well that innogy benefits from a broad geographic footprint in Europe. In addition to the countries illustrated below, innogy is currently in the process of entering new markets such as Ireland and the US.

Strong footprint across Europe (as of December 31, 2015)



Source: innogy, Warburg Research

High share of quasi-regulated earnings to ensure stable income profile

As it is the case with the company's grid business, innogy also benefits to a certain extent from quasi-regulated earnings. According to the company, roughly 60% of the segment's EBITDA result can be attributed to assets which generate quasi-regulated earnings as the realised price from the electricity sale is bound to price mechanism such as fixed feed-in tariffs, green certificates and long-term power purchase agreements.

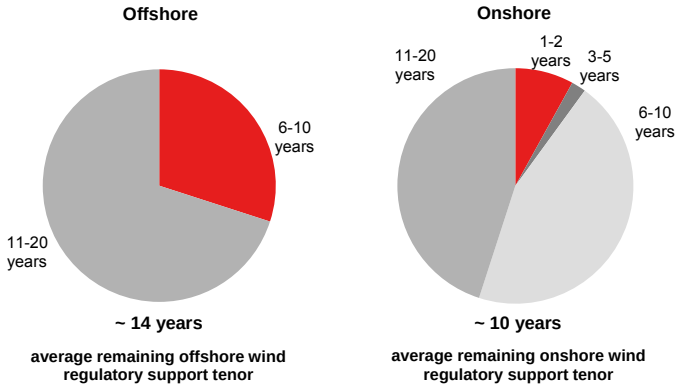
More importantly, as we expect innogy, to commission a wide range of wind projects in the next 12 months, the share of quasi-regulated earnings is set to increase to more than 65%.

High share of quasi-regulated earnings ensure stable earnings profile

Source: innogy, Warburg Research

Moreover, these quasi-regulated earnings boast an average remaining term of 12 years due to innogy's rather young fleet of renewable energy assets. According to the company, the onshore and offshore wind asset base can be regarded as particularly young with an average weighted age of c. 6 years.

Average remaining regulatory support for wind portfolio of ~12 years

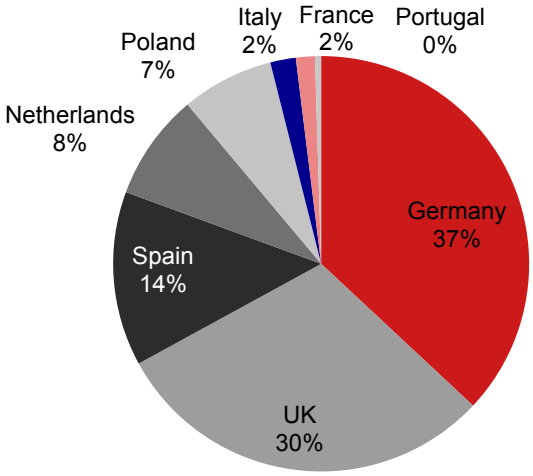


Source: Innogy, Warburg Research

Asset base largely skewed towards Germany and the UK

About 80% of innogy's renewable assets are located in Germany, the UK and Spain. The large asset base in Germany and the UK is particularly encouraging as the local administration in those countries is not known for retroactive changes to feed-in tariffs or other subsidy schemes. Hence, we see very limited regulatory risk with respect to those assets.

Portfolio assets by countries (in MW, accounting view)



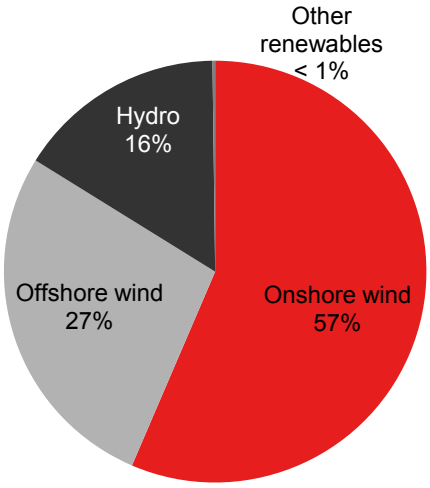
Source: innogy, Warburg Research

Portfolio characterised by substantial wind investments

Innogy's renewables portfolio is characterised by major capacities in onshore and offshore wind. Consequently, innogy is ranked number three in offshore wind by installed capacity. We expect the company to expand its leading position with respect to wind assets as we anticipate the commissioning of c. 450 MW of new capacity, mostly in onshore and offshore wind, until 2019.

As innogy, however, currently lacks noteworthy investments in solar assets, we see a particularly good growth opportunity for innogy in solar. We argue later in this note that steeply falling system costs in solar and the corresponding decline in levelized cost of energy (LCOE) in solar make an attractive investment case for solar .

Portfolio characterised by energy sources (MW)



Source: innogy, Warburg Research

Analysis of Return on Capital

- Historical average ROCE generation of 5.7% between FY 2013-2016 implies that the company has been a steady value creator.
- Going forward, we expect a continual improvement in ROCE generation as our estimates assume a growing NOPAT and rather stable average capital employed.
- For FY 2017-2019, we forecast an average group ROCE of 7.1% which would stand well above the company's cost of capital of c. 5.5%.

Attractive ROCE generation of c.7% underlines high quality of innogy

Steady value creation underlines profitability

ROCE generation: positive development expected

In this section, in order to determine innogy's profitability and efficiency, we take a look at innogy's return on capital generation. With regard to the European energy and utility sector, ROCE is usually lower than in other industries – due to the capital-intensive nature of the business. Moreover, a high portion of regulated business, such as price caps in the grid business, lowers the volatility of the generated return on capital but also limits the upside potential to a certain degree. The charts below illustrate the stability of innogy's ROCE generation between 2013 and 2016. The first chart illustrates our calculated ROCE generation taking into consideration innogy's sizeable pension provisions of c. EUR 3.9bn in FY 2016 while the other excludes pension provisions from the calculated average capital employed.

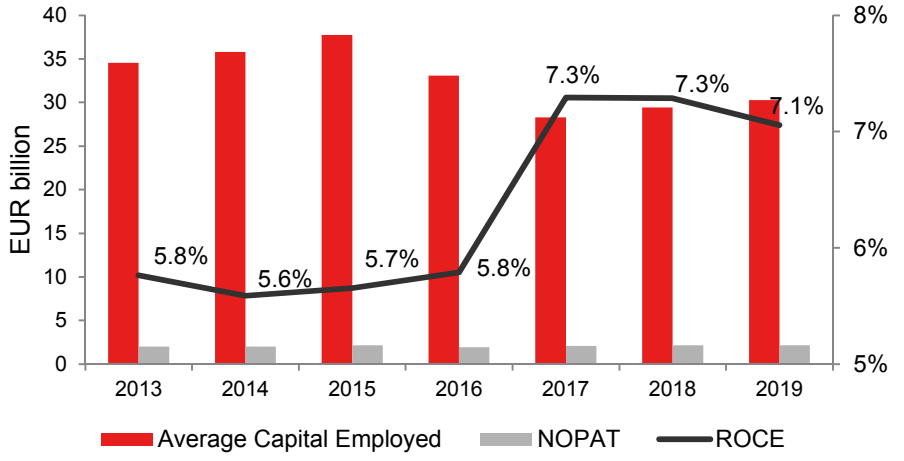
According to our calculations, innogy generated an average ROCE of 5.7% (capital employed including pensions) between FY 2013 and 2016, indicating a modest but steady value creation when comparing to the group's WACC, which we estimate at c. 5.5%.

In 2016, for instance, innogy generated a ROCE of 5.8% (6.5% excluding pension provisions from CE) based on a calculated NOPAT of EUR 1.9 billion (assuming a normalized effective tax rate of 30%) and a calculated average employed capital of EUR 33.1bn. For 2017, both charts show a strong increase in ROCE by 1.5pp. (2.0pp.) due to a significant reduction in average capital employed.

With the initial public offering of innogy in FY 2016 its balance sheet underwent significant changes. Shareholder equity, for instance, decreased by c. 50% while liquid assets increased by more than two-thirds. Consequently, average capital employed declined while NOPAT remained broadly stable. According to the annual report, the change in equity mainly originates from withdrawals from retained earnings in the context of payments to RWE AG as a result of the legal reorganization of the company. The increase in liquid assets can be split into current fixed-in marketable securities (+ 72%) and cash / demand deposits for short-term cash positions (+143%).

As a result of a lower average capital employed and slight increases in our calculated NOPAT, we anticipate positive development of the ROCE generation in the coming years and thus calculate an average group ROCE of 7.2% (8.25%) between FY 2017-2019e.

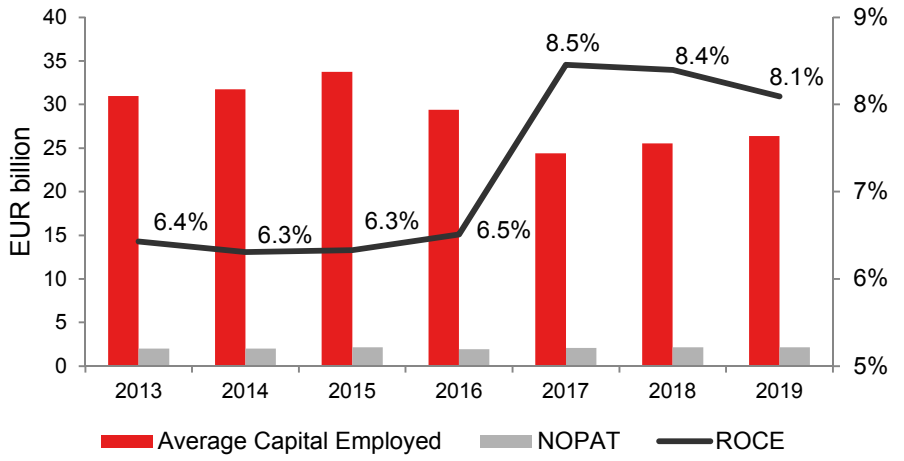
ROCE development (calculation includes pension liabilities)



Source: Warburg Research

For the sake of completeness, we illustrate our ROCE calculations below based on an average capital employed excluding pension provisions of c. EUR 3.9bn.

ROCE development (calculation excludes pension liabilities)



Source: Warburg Research

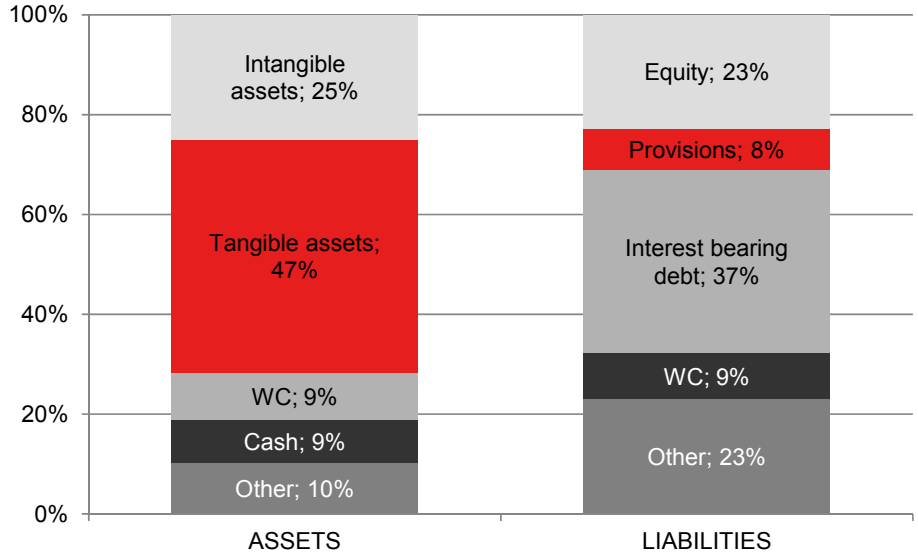
Balance sheet structure characterised by high capital intensity

At the end of FY 2016, the balance sheet total amounted to EUR 46.9bn; implying a decline of more than EUR 11bn compared to 2015. About one quarter of total assets are intangible assets, of which more than 90% (EUR 10.7bn) relate to goodwill positions which are separated into several cash-generating units (CGU) according to innogy's business segments. The most important CGU is CGU Retail with EUR 6.1bn (about 57% of the entire goodwill position), followed by the CGU Grid & Infrastructure with EUR 3.9bn (36%). An impairment test is performed in the third quarter of every year to identify any need to recognize impairment losses on goodwill. All other intangible assets contain concessions, patent rights, licenses and similar rights.

Due to innogy's Grid & Infrastructure division – the core business of innogy –, nearly 47% of all assets can be attributed to fixed assets, underlining the high-asset intensity of innogy's business model. Besides factory and other equipment, plants under construction and land & land rights, the largest PP&E position relates to technical plant and machinery which amounted to EUR 15.3bn. Liquid assets amounted to EUR 4.1bn, consisting of one-third cash (EUR 1.4bn) and two-thirds marketable securities. Of this, EUR 2.2bn were fixed-interest marketable securities and EUR 510m stocks or profit-participating certificates.

Due to innogy's high capital intensity, the equity ratio at the end of FY 2016 amounted to 23%. Provisions for pensions and other obligations stood at c. EUR 3.9bn in FY 2016 and therefore represented roughly 8% of all liabilities: The interest-bearing debt, however, can be regarded as the most substantial position on the liability side, representing 37% (EUR 17.2bn) of all group liabilities. Thereof two-thirds were long-term bonds amounting to EUR 11.3bn, issued by innogy Finance B.V. (except two small bonds). In terms of maturity, c. 4% (EUR 665m) of all financial liabilities can be regarded as short-term in nature. Finally, accounts payables represented roughly 9% (EUR 4.3bn) of the company's total liabilities while 'other liabilities' made up c. 23%. In terms of 'other liabilities', both current and non-current other liabilities mainly stem from derivatives, tax liabilities and advances and contributions in aid of construction and building connection.

Balance sheet structure (as of December 31, 2016)



Source: Warburg Research

Step-up adjustment of senior bonds

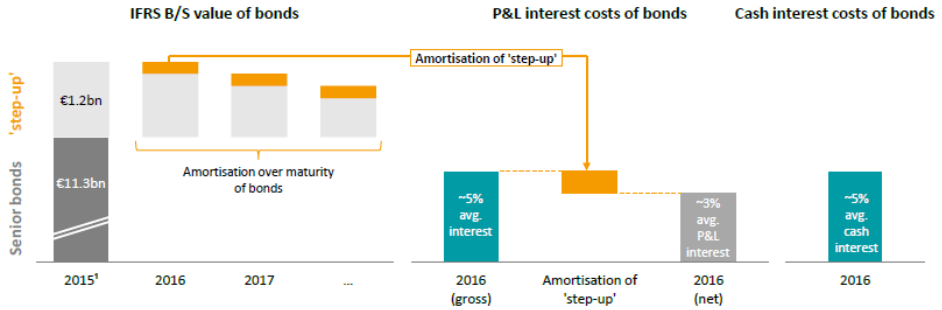
With respect to innogy's outstanding financial debt there is an exception worth explaining as it is key to calculating innogy's adjusted net income figure. In the course of the transfer of senior bonds (EUR 11.3bn) from RWE AG to innogy AG, the transferred senior bonds had to be recognised at fair value, which, in turn, resulted in a 'step-up' adjustment of EUR 1.2bn. That was the result of declining market rates since issuance, which resulted in a higher fair value than the carrying amount of the bonds.

However, this won't have an impact on the repayment value of the bonds nor will it increase innogy's annual cash interest cost which is expected to remain at an average interest rate of 5%. To reduce the additional liability from an accounting point of view, the P&L interest expenses will be reduced by the amortisation of the 'step-up' over the tenure of the corresponding bonds.

To calculate innogy's adjusted net income, which is the basis of the dividend payment (70-80% pay-out from adjusted net income), the positive impact from the amortization of the step-up is excluded. Hence, the adjusted net income figure will turn out to be lower than the reported net income figures (based on IFRS).

At the end of FY 2016, the valuation difference or 'step-up' adjustment stood at EUR 1,034m. We thus expect a step-up amortization of EUR 200m, EUR 180, and EUR 125m in FY 2017, 2018 and 2019, respectively. Hence, we expect a continuous decline in the step-up adjustment in the coming years.

Valuation difference of senior bonds to be reversed in the future



Source: Warburg Research

Net debt/ EBITDA to remain below 4.0x

Our net debt calculation differs slightly from innogy's company definition as we tend to be stricter with respect to our definition of liquid assets. Hence, our net debt figure for FY 2016, which includes provisions for pensions and wind-farm decommissioning, comes in at EUR 16.3bn, some EUR 600m higher than the figure reported by the company.

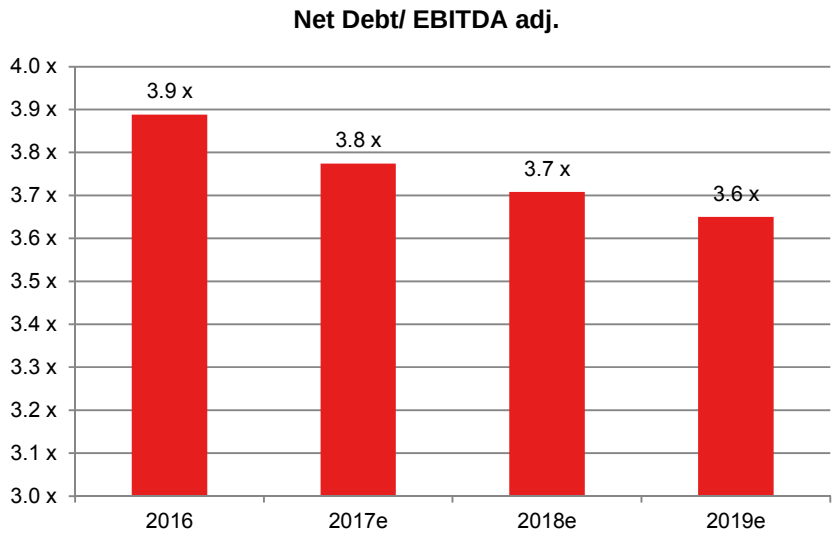
Warburg Research Net Debt calculation

EUR m	2016	2017e	2018e	2019e
+Financial liabilities	17,221	17,221	17,221	17,221
+Pensions	3,888	3,888	3,888	3,888
+wind-farm decom.	334	351	368	387
-Step-up adjustment	1,034	834	654	529
-Liquid assets	4,067	3,908	3,864	4,208
= Net debt	**16,342**	**16,718**	**16,959**	**16,759**
EBITDA adj.	4,203.0	4,429.3	4,573.8	4,591.6
Net Debt/ EBITDA adj	3.89x	3.77x	3.71x	3.65x

Source: Warburg Research

In terms of leverage, the company envisages a Net debt/ EBITDA adj. ratio of around 4.0x. in the long term. According to our calculations, innogy achieved a leverage factor of 3.9x in FY 2016. Despite significant average capex investments of c. EUR 2.2bn p.a. between FY 2017 and 2019e, we do not expect innogy to exceed its target leverage factor between FY 2017 and FY 2019. In this context, however, it is important to note that the target leverage factor of 4.0x represents a rather soft target and modest fluctuations, i.e. also an increase to more than 4.0x, would not necessarily trigger action by the company.

Forecasted Net debt/ EBITDA adj. development



Source: Warburg Research

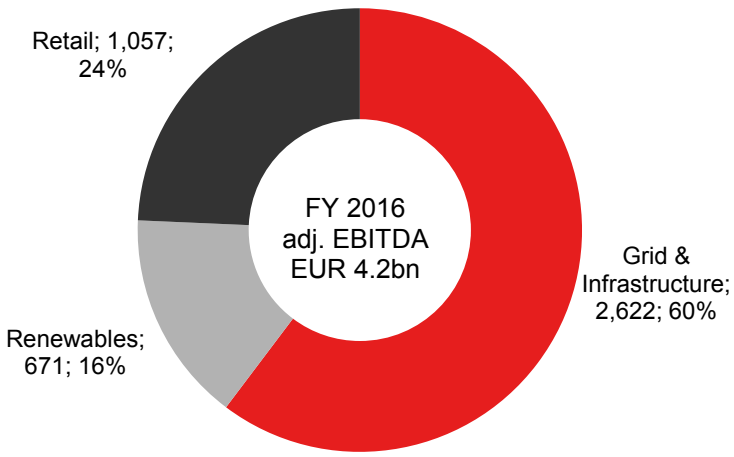
Growth / Financials

- Grid business to deliver stable results through 2019 but unlikely to provide earnings growth as looming regulatory changes in Germany are set to dampen returns on RAB.
- We see decent growth opportunities in the new retail business 'energy+' with product offerings which take into account changing customer needs and a move towards decentralised electricity production.
- Innogy is particularly well positioned in the e-mobility business with an extensive infrastructure of more than 5,700 charging stations for EVs in Europe.
- In addition to the energy+ products, a modest recovery of profitability in the UK retail unit is forecast to drive earnings in the retail segment.
- In Renewables, we expect new capacity of c. 400 MW to come online by FY 2018, indicating an adj. EBITDA boost of almost EUR 100m.
- Finally, while current subsidy levels for offshore projects are a cause for concern, we see an appealing case for profitable solar PV projects as levelized costs of energy for solar projects are set to decrease more than for any other renewable technology.

The grid business represents a key cornerstone of innogy's profitability

We illustrate below innogy's segmental adj. EBITDA breakdown for FY 2016, which underlines the importance of the grid business for innogy's profitability. In this section we elaborate on the company's three segments and identify potential growth drivers for each segment. The section concludes with a comparison of our estimates with street expectations.

Overview of segment breakdown



Source: innogy, Warburg Research

Grid & Infrastructure

Grid business to deliver robust results

Innogy's grid & infrastructure generates the bulk of the company's EBITDA result (c. 60% in FY 2016) and can be regarded as rather stable and predictable due to its 80% share of regulated business.

While the high share of regulated business is clearly a positive when it comes to limiting downside risk, it can also be regarded as an obstacle to providing upside. Going forward, we expect the segment to continue to deliver stable income but do not anticipate the segment to drive earnings growth as looming regulatory changes in Germany are likely to create headwinds.

There are very few significant activities which can be regarded as non-regulated such as innogy's gas storage business. In our view, upward risk to our EBITDA estimates could mostly stem from concession losses and the corresponding sale of grid assets, which, in turn, could result in gains on asset disposal. That, however, would only represent a one-off gain and thus a short-term positive as recurring grid disposals would erode the company's regulated asset base (RAB) and with that, its future regulated earnings.

Innogy's German grid business represented roughly 70% of the segment's adjusted EBITDA generation in FY 2016. Hence, we will take a detailed look at the German grid business and its exposure to expected regulatory changes, which will have a dampening impact on grid income, in our view.

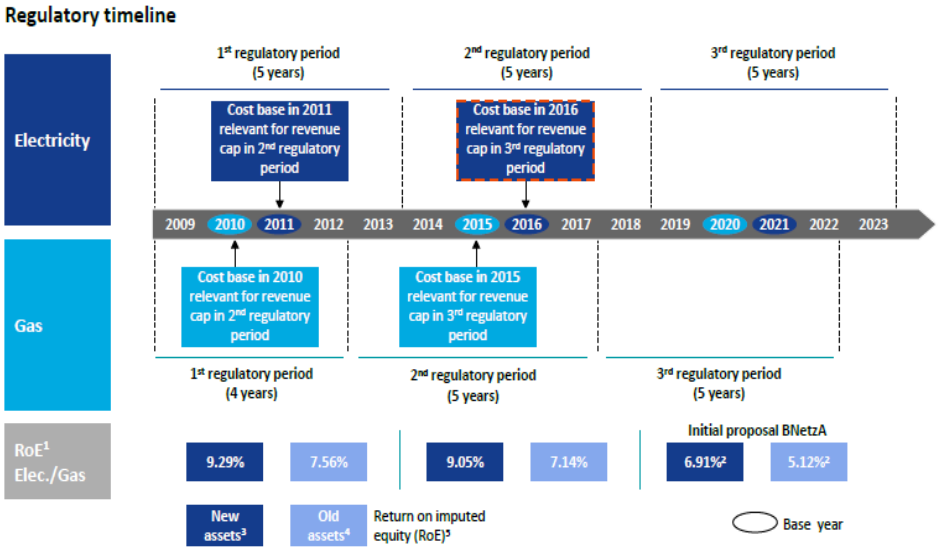
German incentive regulation is stable but leaves little room for surprise

According to our estimates and company data, innogy has been generating an annual return of c. EUR 600m on its German regulated asset base (RAB) of EUR 9.7bn. In Germany, innogy is ranked the number one distribution system operator (DSO) in electricity (E.On is the number two) and the number two DSO in gas (E.ON is the number in gas), based on distributed volume.

innogy's German RAB of EUR 9.7bn is valid for the full current second regulatory period, which lasts from FY 2011 until FY 2017. The size of the RAB was determined by the Bundesnetzagnetur (BNetzA) in FY 2010/11 with the last cost assessment and will not be updated before the third regulatory period kicks in in FY 2018/19 regardless of actual new investment in the meantime. Hence, until the third regulatory period commences in FY 2018/19, innogy's grid remuneration is likely to remain broadly stable. The current German incentive system therefore represents an ex-ante revenue regulation system, leaving cost recognition and RAB remuneration unchanged for a period of five years.

During a regulatory period (five years), the German regulation only offers two ways to recognise grid investments: (1) via the expansion factor, which accounts for network growth (medium and low voltage levels) and is tagged as controllable cost and (2) via an adjustment for non-controllable costs, which considers investments in 110kV networks. Since these are the only two levers to adjust the regulated asset base, the RAB remains broadly unchanged. Thus, while the German incentive regulation provides predictable and stable earnings, it leaves little room for deviation and thus little surprise potential.

Regulatory changes to impose lower return on regulated asset base

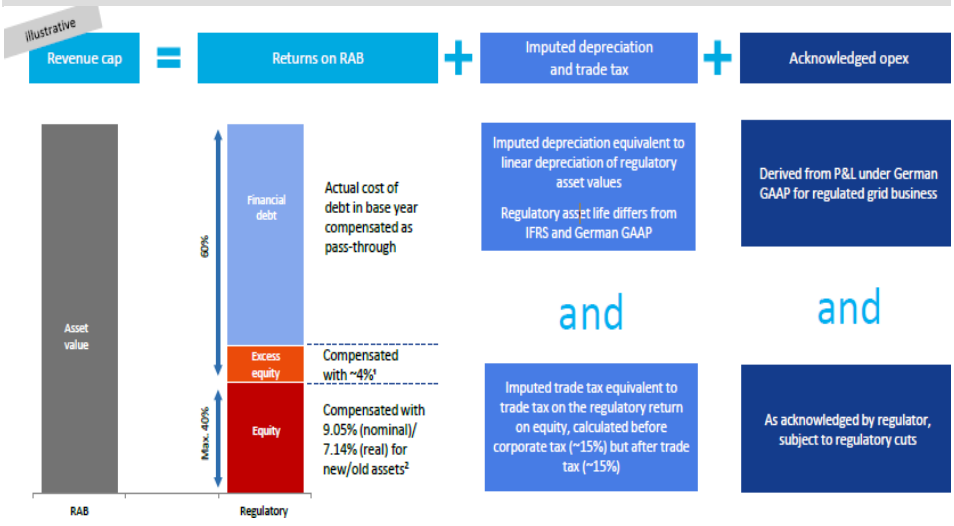


Source: innogy, Warburg Research

How does the RAB remuneration work?

Essentially, the revenue cap for the grid business consists of the allowed return on RAB (see our derivation below) plus payments for imputed depreciation, trade tax and opex.

Illustrative composition of the revenue cap



Source: innogy, Warburg Research

- As mentioned above, innogy's regulated asset base (RAB) in Germany (considers only fully consolidated grid businesses) currently receives an annual remuneration of c. EUR 600m. The return represents the product of the pro-forma WACC of 6.1% (WACC given by innogy), which is the pro-forma allowed return (before corporate and trade tax), and the regulated asset base of EUR 9.7bn.
- The pro-forma WACC figure during the current second regulatory period is

based on the following assumptions by the regulator: The return on regulatory equity for new and old assets (commissioned before 2006) amounts to 9.05% and 7.14% respectively (both before corporate tax but post 15% trade tax). According to the company, the split between new and old assets is roughly 50/5. As a result, we arrive at a return on equity pre-trade tax of 9.5%.

- Cost of debt stands at 4% pre-tax and is treated as pass-through. The capital structure of the regulated assets is split into 60% debt and 40% equity by regulatory definition.
- Thus, the allowed pro-forma WACC return is calculated as follows: 40% * 9.5% + 60% * 4% = 6.2%. Our computed result differs slightly from the figure provided by innogy (WACC of 6.1%) since the actual rates for trade tax and cost of debt, which have not been disclosed by the company, might differ from our assumptions.

Overview of current German incentive regulation

Ex-ante revenue cap regulation	> No volume risk – DSOs not impacted by fluctuations in demand > Stable ex-ante framework codified by law, as opposed to ex-post supervision by regulator > Revenue cap mechanically updated year by year – mainly without regulatory discretion
Cost recognition based on DSO's actual cost base	> Cost recognition stable for 5-year regulatory periods > Non controllable costs treated as pass-through in regulatory formula > Inflation factor as effective macro hedge
RAB remuneration determined for entire regulatory period	> RAB split into 40% equity[1] and 60% debt by regulatory definition > Return on regulatory equity fixed at nominal 9.05% (7.14% real for old assets)[2] for entire regulatory period until 2017/18 > Cost of debt treated as pass-through and therefore allows for natural hedge against changes in interest rate environment
Remuneration mechanisms for grid expansion	> Expansion factor included in revenue cap formula with 1-year time lag > Investment measure mechanism recognised without time lag, established to support expansion of 110kV investments

Source: innogy, Warburg Research

New regulatory period to result in higher RAB but lower allowed returns

As outlined above, the current incentive system and corresponding return on RAB will remain unchanged until FY 2017/18. However, with the start of the new regulatory period, the regulator is set to update innogy's RAB, based on a cost assessment which took place in FY 2015 for the gas assets and in FY 2016 for the electricity assets.

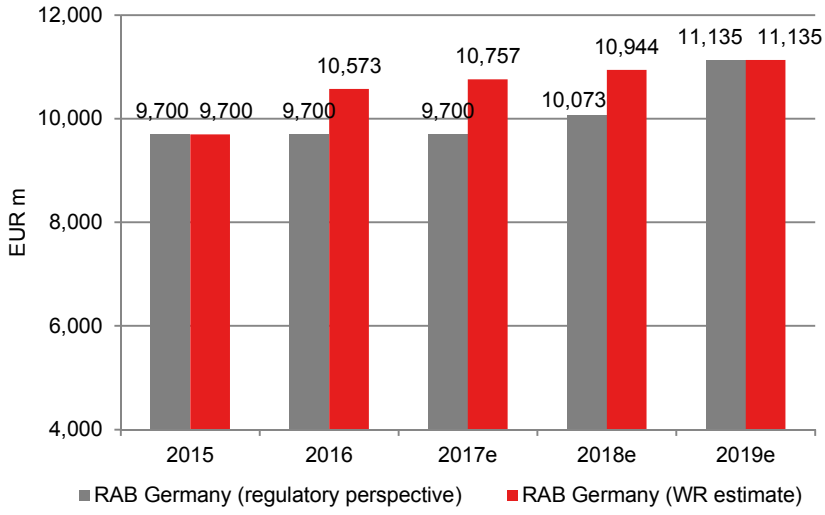
Consequently, innogy expects an increase in its RAB by +9% between FY 2010/11 and FY 2015/16, assuming that net investments (post concession gains/losses) in regulated assets are fully recognized by the BNetzA. The company, however, won't benefit from the higher RAB before the new regulatory period commences in FY 2018/19.

While RAB growth is clearly positive, we do not expect the positive impact from a higher asset base to translate into higher regulated returns as the regulator has also proposed lower returns on equity with the start of the third regulatory period. Based on a decision by the BNetzA in October 2016, return on regulatory equity for new and old assets will be reduced from 9.05% to 6.91% and from 7.14% to 5.12%, respectively. According to our calculations, the pro-forma WACC for the RAB in the third regulatory period therefore declines to 5.2% from currently 6.2%.

Besides lower allowed returns, the upcoming regulatory period also comes with beneficial changes. With the start of the third regulatory period, the German regulator will allow for annual RAB revisions, so called 'true-ups' of capital cost. Thus, capex investments from FY 2017/18 onwards will be recognized annually and should translate into a higher RAB in the following year. Hence, the time lag will be eliminated and new investments will be recognized on a yearly basis. Taking into account that innogy's RAB in Germany stood 9% higher in FY 2015/16 and that new capex investments in FY 2017/18 will be recognized in the following year, we estimate that RAB should amount to EUR 11.15bn in FY 2019, implying 15% growth in RAB compared to the current RAB of EUR 9.7bn. Moreover, our forecast implies a 1.74% CAGR in RAB between FY 2016 and 2019e.

The chart below illustrates our estimates for innogy's RAB in Germany through FY 2019, which is key to determining future returns. While the grey bar illustrates the RAB from a regulatory perspective and therefore remains unchanged for the remainder of the second regulatory period at EUR 9.7bn until FY 2017, the red bar shows our actual RAB assumptions until 2019, taking into account potential new investments between two base years. In 2018, we assume a RAB from a regulatory perspective of EUR 10,073m as innogy's regulated gas grid assets move into the third regulatory period. Our forecast is based on the assumption that the gas grid business represents roughly 30% of innogy's total RAB in Germany (the gas network represents roughly 28% of innogy's total distribution network measured in areas served in thousand square-km).

Warburg Research RAB Germany estimates

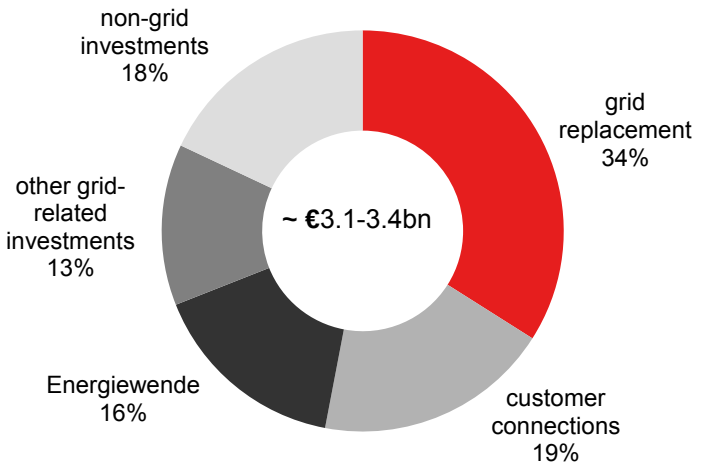


Source: Warburg Research

Despite assuming a regulated asset base of c. EUR 11.14bn, looming lower allowed returns with the start of the next regulatory period are likely to have a dampening effect on RAB returns. According to our estimates, a pro-forma WACC of c.5.2% in FY 2019 should translate into an annual return of EUR 579m, slightly lower than current levels.

Going forward, maintaining the German grid network will have top priority as innogy intends to spend about EUR 1.1bn in capex on grid replacement until 2019.

G&I Germany: split of planned capex FY 2017-2019



Source: innogy, Warburg Research

Finally, the chart below summarizes the upcoming regulatory changes with respect to the regulated German grid business.

Regulatory changes to impose lower return on regulated asset base

Elimination of time-lag for investment budgets	> Update of remuneration on regulatory asset base during regulatory periods • Recognition of new investments in RAB[2] on yearly basis • RAB remuneration to be reduced annually in line with depreciating asset base • Investments from 2007 to 2016 exempt from changes in remuneration
Bonus for most efficient DSOs	> Introduction of new bonus for most efficient DSOs > Available to DSOs with 100% efficiency to encourage innovative investments in grid technology and expansion
Increased transparency	> Regulator to publish additional information on the regulatory parameters and targets

Source: innogy, Warburg Research

Overview of G&I Germany earnings composition

After our deep dive into returns on RAB, we briefly illustrate the remaining earning sources from the German grid business. In FY 2015, innogy's German grid business generated a further EUR 400m in earnings from regulated and non-regulated grid business. We already highlighted the only two possible ways to receive regulatory compensation for investments during a regulatory period (via the expansion factor and 110kV investments). Payments from those two remuneration mechanisms are defined as regulated grid earnings. If innogy provides grid services to other grid operators, this would qualify as non-regulated grid earnings and would therefore be regarded as part of innogy's grid activities. Due to the nature of the regulated and non-regulated grid activities we do not expect noticeable earnings growth from these activities.

Participations to remain an important source of income in G&I

As can be seen from the table below, income from participations amounted to EUR 233m and thus represented an important source of income for the Grid & Infrastructure segment.

Composition of German Grid & Infrastructure earnings

Breakdown of 2015 EBITDA (€bn)

Grid	Regulated asset base[1]	9.7
	Pro-forma WACC[2]	6.1%
	Return on RAB	0.6
	Other grid earnings (regulated/ unregulated)	0.4
	D&A (IFRS)	0.5
	Grid EBITDA	1.5
Part.	Income from participations[3]	0.2
Other	Non-grid business/other	0.3
	EBITDA	2.0

Source: innogy, Warburg Research

According to the company, innogy holds around 370 minority shareholdings (non-consolidated), including more than 100 participations in municipal utilities (Stadtwerke) and approx. 200 participations in other municipal energy providers. It is therefore an integral component of the segment and we believe it will remain an important source of income for innogy's German grid business with an average annual income from participations of EUR 247m through 2019, underlining the low-volatility nature of the grid

business. It is important to note that these minority participations can be regarded as regulated activities as well and therefore count towards the 80% share of regulated business in the Grid & Infrastructure segment. Hence, we have assumed a FY 2016-2019 sales CAGR of 2%, broadly in line with innogy's fully consolidated grid business.

Non-grid and 'other' activities

Besides the grid business and participations, innogy's German G&I segment also comprises a number of 'Other' activities, which, according to our estimates, contribute earnings of c. EUR 200-250m p.a. It is important to note that the table above only represents an exemplary illustration of the derivation of the G&I Germany EBITDA figure and not an accurate reflection of the company's segment reporting as many components of the total EBITDA figure such as the 'other activities' are not separately disclosed by the company on a regular basis.

Such other activities include gas storage (innogy operates five facilities in Germany and six storage facilities in the Czech Republic), the water business, telecommunications and services as well as hydro and other generation. Revenues from the gas storage business are not regulated and the business plays an important part in ensuring security of supply in times of high demand. In light of a growing share of renewables, innogy's gas storage business is likely to play an even bigger role in providing flexibility due to the superior feed-in times of its facilities. The water business, in contrast, can be regarded as quasi-regulated with a concession-based business model, providing long-term earnings visibility. Thus, innogy holds some minor water concessions and is active in the water business through its subsidiary RWW, which is one of the largest privately owned water utilities in Germany. According to company information, the subsidiary generated an EBITDA of EUR 33m in FY 2015. We believe there is little to expect in terms of changes in profitability as the most important water concession won't expire before 2027.

Selected municipal participation

Participation	innogy share[2]	Income from investments[3]
RheinEnergie	20%	27
DEW21	40%	15
AVU...	50%	12
eregio	43%	7
PFALZWERKE	27%	7

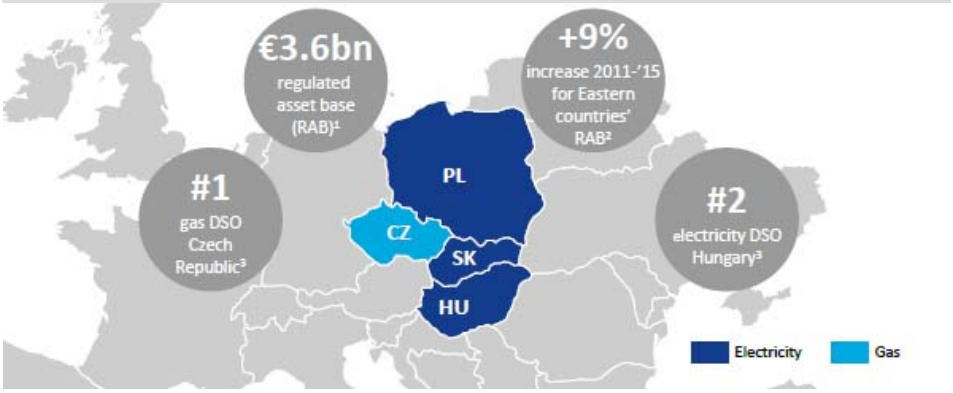
Source: innogy, Warburg Research

G&I East

For the sake of brevity, we will give a summary of innogy's Eastern Europe business. Of innogy's aggregated RAB of EUR 13.3bn roughly EUR 3.6bn can be attributed to its business in the Czech Republic (gas distribution; RAB of EUR 1.6bn), Hungary (electricity distribution; RAB of EUR 0.7bn), Poland (electricity; EUR 0.7bn) and Slovakia (electricity; RAB of EUR 0.5bn).

According to the company, the regulated asset base increased by 9% between 2011 and 2015, pointing to solid growth in the Eastern European countries. In addition, the pro-forma WACC across all countries stands at c. 6.5%, implying a return from RAB of c. EUR 235m p.a.

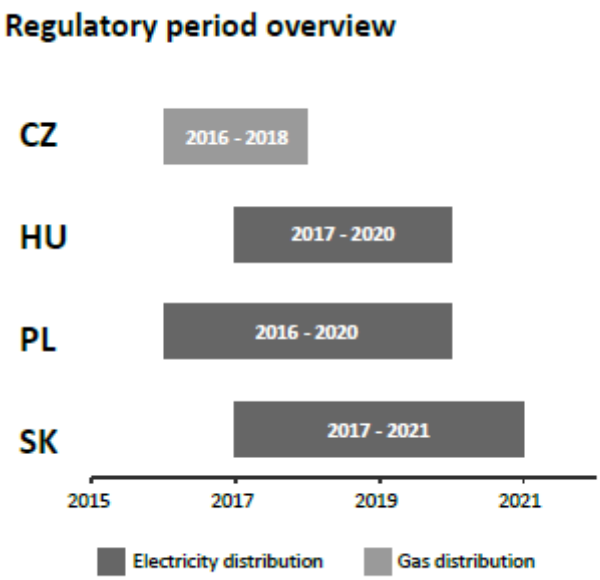
Overview of Grid & Infrastructure East



Source: innogy, Warburg Research

Most importantly, returns from RAB in the Czech Republic and Poland should remain stable as both markets have already moved into their current 2016-2018/20 regulatory period back in 2016.

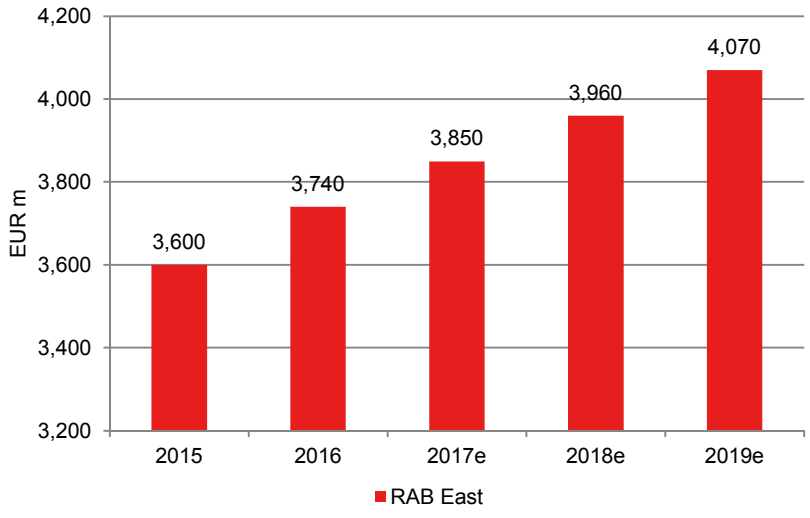
Large portion of RAB East (CZ and PL) in the midst of regulatory period



Source: innogy, Warburg Research

Below, we provide an aggregated RAB forecast for the eastern European countries as we do not have enough available information, such as depreciation and capex on a per-country basis. Thus, our RAB East forecast is based on the following assumptions: Annual capex investments of c. EUR 330m until FY 2019 (or ~EUR 1.0bn in total) and average annual depreciation of EUR 265m through 2019, which we subtract from our computed RAB. In terms of return on RAB, we assume a pro-forma WACC (pre-trade tax) of 6.4% from FY 2017 onwards.

RAB East forecast FY 2016-2019e



Source: Warburg Research

Earnings outlook

Our key figures forecast of for the Grid & Infrastructure division is shown below. As already outlined above, we expect RAB growth in Germany as well as in the eastern European markets. Nonetheless, as regulators, in particular in Germany, are set to reduce the allowed pro-forma WACC, returns are generally set to stagnate.

For FY 2017, we expect an increase in the adjusted EBITDA result by c. EUR 200m, in line with the company guidance. That, however, is driven by lower maintenance costs for the German distribution network in FY 2017 than last year. Operating expenses in FY 2016, however, were rather inflated as 2016 represented the cost base year for the third regulatory period in Germany. Nonetheless, for FY 2018 and 2019 we assume modestly declining adj. EBITDA contributions from the division as the start of the new regulatory period in Germany will introduce lower allowed returns on RAB. It is, however, important to note that we do not assume positive one-offs by way of gains from grid disposal. Hence, network asset sale could represent upside risk to our estimates.

Forecast of key figures: Grid & Infrastructure (in EUR m)

Grid & Infrastructure	2015	2016	2017e	2018e	2019e
Revenues	10,176	10,761	11,191	11,415	11,644
Germany					
RAB (regulatory perspective)	9,700	9,700	9,700	10,073	11,135
RAB (Warburg Research estimate)	9,700	10,573	10,757	10,944	11,135
Allowed pro-forma WACC (pre trade tax)	6.2%	6.2%	6.2%	6.2%/ 5.2%	5.2%
Eastern Europe					
East RAB (regulatory perspective)	3,600	3,740	3,850	3,960	4,070
Allowed pro-forma WACC (pre trade tax)	6.5%	6.5%	6.4%	6.4%	6.4%
adj. EBITDA	**2,878**	**2,622**	**2,833**	**2,820**	**2,771**
Germany	2,016	1,844	1,990	1,922	1,925
Eastern Europe	862	778	843	898	846
adj. EBIT	**1,930**	**1,708**	**1,903**	**1,884**	**1,816**
Operating D&A	949	914	930	936	955
Capex	1,305	1,191	1,400	1,400	1,400

Source: Warburg Research

Retail

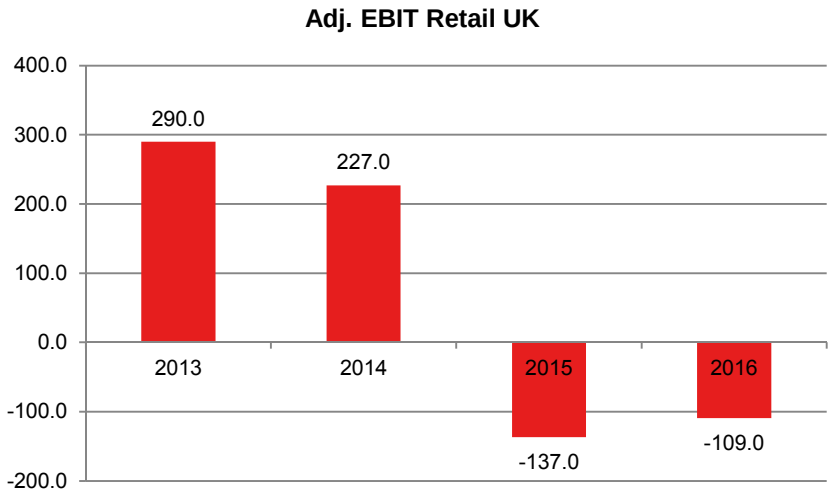
We are upbeat on growth opportunities for innogy's retail activities. We are particularly hopeful for innogy's new product offerings energy+ which should enable the company to capitalize on dramatic changes in the energy market. In this section we put particular emphasis on innogy's e-mobility offering and innogy's benefit from a switch towards electric vehicles in Germany and Europe thanks to its first-mover advantage in setting up the charging infrastructure and first-hand experience.

At the same time, innogy's 'traditional' retail business can be regarded as rather stable despite noteworthy issues in the UK and some problems in the Netherlands. However, we prefer to remain cautious and do not assume a massive rebound in profitability in the UK in the near term. In contrast to some more bullish voices, we doubt that innogy's UK retail subsidiary Npower is set to make a strong comeback. More importantly, our analysis of the UK retail market has led us to the conclusion that innogy's UK retail brand Npower is very much exposed to potential adverse regulation such as the recently discussed price caps for electricity and gas. Nonetheless, the risk of an introduction of price caps has eased significantly following the general election and the weak outcome for the conservative party. Thus, for the time being we do not expect a worsening of the operational development in the UK from a regulatory point of view.

What caused the slump in profitability in the UK?

As can be seen from the chart below, innogy's retail business has taken a notable turn for the worse. There are two reasons for this, in our view. Firstly, the problems are, to a certain extent, of the company's own making as billing errors damaged Npower's brand image and in FY 2015, led to the highest fine (GBP 26m) ever imposed by the regulator, Ofgem. The problems in the UK retail market can also be attributed to a highly competitive market environment, characterised by a large number of players.

Development of profitability at UK retail unit Npower



Source: Warburg Research

Billing issues and other internal problems

The weak profitability of Npower can be traced back to problems which arose two years ago. In FY 2015, innogy faced serious difficulties with a failed introduction of a new IT programme. This led to inaccurate billings and prompted many customers to change their energy supplier based on Npower's unreasonable treatment of customer complaints. Following this failure, the UK energy regulator Ofgem imposed a fine of GBP 26m on Npower, which was by far the largest penalty for an energy supplier in the UK in the last decades. In 2008 and 2013, Npower was already fined GBP 1.8m for mis-selling (2008) and GBP 3.0m for breaching sales rules (2013). In the course of the IT errors and incorrect invoicing, innogy put a recovery plan in place for Npower. The company strives to achieve roughly GBP 200m in cost savings by the end of FY 2018, which will also require a staff reduction of 2,400 FTEs. According to the most recent update from the company in May 2017, Npower has already implemented more than half of the targeted cost savings and is therefore on track to achieve the full amount of the envisaged savings by the end of 2018. We have reflected this in our earnings estimates for the unit.

However, we fear that the competitive environment is likely to remain tough for Npower. The company's image has taken a significant hit from widespread negative press in the past months. Moreover, our analysis has unveiled that Npower would be heavily exposed to potential price caps in the energy market, which have been discussed recently (see below). Finally, the UK retail market is still attracting new market entrants such as Engie and Vattenfall which is likely to exacerbate the competitive intensity.

Risk of price cap has eased following the general election

During the recent election campaign in the UK, the Conservatives pledged to introduce price caps to protect customers from "abusive price increases". Prime Minister May and her party planned to introduced a safeguard tariff cap which should protect customers on standard variable tariffs, which are usually a lot more expensive than fixed-rate tariffs.

The key difference between standard variable and fixed-rate tariffs is the supplier's authority to adjust the power price in standard tariffs at any time, while non-standard tariffs are fixed for a certain period of time (e.g. four or five years). In practice, variable tariffs are often more expensive than fixed-rate tariffs due to ongoing price adjustments of the energy supplier. Investigations by Ofgem have shown that Npower is the supplier with the second largest delta between the standard variable tariff and its cheapest tariff. Only Co-operative Energy shows a larger difference. In 2016, the annual costs of an Npower standard variable tariff amounted to c.GBP 1,077. However, at the beginning of FY 2017 Npower announced an average increase in energy bills by 9.8% (15% for electricity, 4.8% for gas) or c. GBP 109 for standard variable gas and electricity tariffs (increase does not affect fixed-rate customers, prepayment meter customers and customers with the warm home discount). Hence, the annual cost of a standard variable tariff now amounts to GBP 1,187. As a result of the price increase, Npower lost some 200k customers in Q1 2017.

Overview of standard tariffs in UK (in GBP)

Supplier	# cust. on std. variable tariffs	% cust. on std. variable tariffs	av. costs (monthly direct	av. costs (prepayment)	cost above cheapest deal
British Gas	6,639,056	74	1,044	1,102	129
EDF Energy	1,943,277	56	1,069	1,139	136
E.On	3,170,499	73	1.047/1.057	1,117	41
Npow er	1,737,642	59	1,077	1,172	180
ScottishPow er	1,541,307	50	1,081	1,142	129
SSE	3,864,044	91	1.056/1.068	1,148	98
Co-op. Energy	96,158	42	1,121		245
Extra Energy	36,641	14	1,130		154
First Utility	175,208	19	1,071		157
Ovo	225,952	35	1,064		67
Utility W.house	503,955	94	1,012		150

Source: Ofgem, Warburg Research

In general, seven in 10 UK households are engaged in a standard variable tariff, even if it's commonly known that they are more expensive. Following an investigation by the Competition and Markets Authority (CMA) published in December 2016, customers in standard tariffs could save over GBP 300 by changing to a cheaper tariff. Nevertheless, the option to switch is more limited for households on prepayment meters. Additionally, the investigation found that the difference between the standard variable tariffs and the cheapest deals for prepayment meters households is as much as GBP 320 per year. That's why CMA decided to cap tariffs for customers with prepayment meters. The price cap is effective from April 1, 2017 and is limited to three years. It will reduce bills by around GBP 75 per household a year. According to our information, the number of prepayment meters customers at Npower amounts to roughly 300k, representing around 6% of the total customer base.

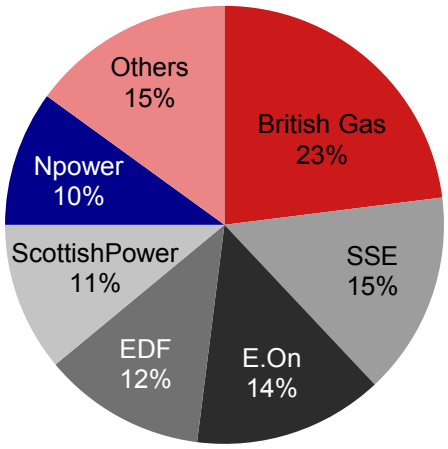
A cap for standard variable bills was also the subject of public debate. Pre-election, the Conservative party pledged to intervene in the gas and electricity market in form of a cap on standard variable tariffs, which could save the average family more than GBP 100 a year. This may represent substantial risk for Npower as it has a large number of standard tariff customers. If the cap is implemented by the new government, it would hit Npower badly as 59% of its customers are on the standard variable tariff and Npower charges one of the largest premiums for the standard variable tariff. However, we believe that the risk of the introduction of a price cap has eased following the Conservatives' weak election result. The Conservatives no longer plan to introduce a new law to cap energy prices but have instead asked the energy regulator Ofgem to "safeguard customers on the poorest value tariffs". Hence, the introduction of an industry-wide price cap for standard variable tariffs by legislation looks increasingly unlikely to us.

Highly competitive landscape in the UK retail market to intensify

As already mentioned, the UK electricity and gas market is quite competitive. The charts below show that the largest players in the UK, widely know as the 'Big Six', account for a combined market share of more than 80%. While this would usually point to a highly concentrated market, the number of active players in the UK market can be regarded as abnormally high for the energy sector. More importantly, as small energy suppliers with fewer than 250k domestic customers are exempt from certain obligations (Energy Company Obligation, ECO), they benefit from a competitive advantage and thus the current regulation attracts new market entrants. The trend of new market entrants has

continued into 2017 with the recent announcements by French utility company Engie and Vattenfall (via the acquisition of iSupplyEnergy in June 2017) regarding entry to the UK market.

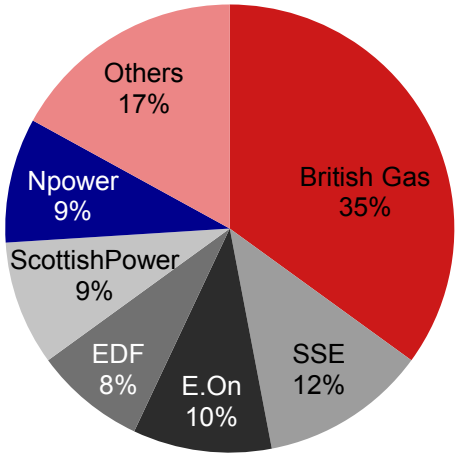
Market share of the 'Big Six' as of Q4-2016 (electricity)



Source: Ofgem, Warburg Research

French utility company Engie officially launched its service in London as recently as in May 2017. More importantly, Engie took recent discussions around price caps seriously and promised to switch customers automatically to its cheapest tariffs for gas and electricity when their initial fixed-rate tariff contracts come to an end. Thus, this is likely to increase pressure on the 'Big Six' suppliers as a high proportion of their customers are on the pricey standard variable tariffs. Moreover, Engie intends to launch cut-throat price competition as its cheapest dual fuel tariff is set to cost a mere GBP 880 per year. Consequently, we currently fear a race to the bottom with respect to prices and as a result, an intensification of the competitive landscape in the UK retail market.

Market share of the 'Big Six' as of Q4-2016 (gas)



Source: Ofgem, Warburg Research

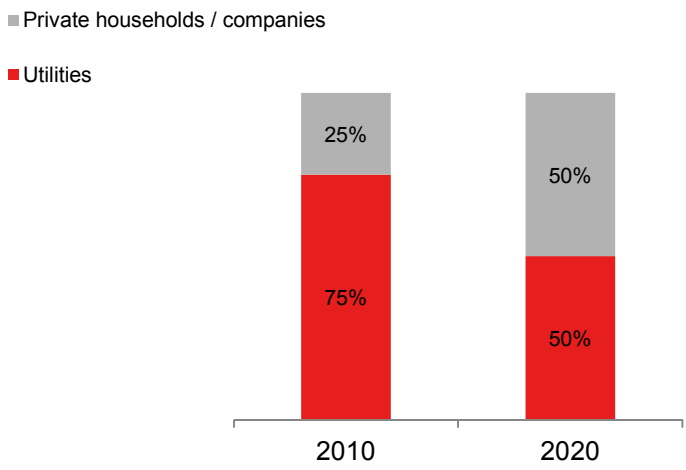
Disruption of the centralized energy supply model looming

In light of an imminent change from centralized to increasingly decentralized electricity production, utility companies such as innogy have to come up with new product offerings to remain relevant.

According to estimates by German inverter manufacturer SMA Solar, energy supply by utilities will decline to 50% of consumption by 2020 compared to 75% in 2010. SMA Solar believes that peer-to-peer communication, private households and companies will become a vital part of the new market structure.

According to SMA, overall profit pools will decrease because of convergence of supply and demand is automatically managed by IoT platforms. Profits could shift to platform providers.

Expected structural change in energy supply in Germany

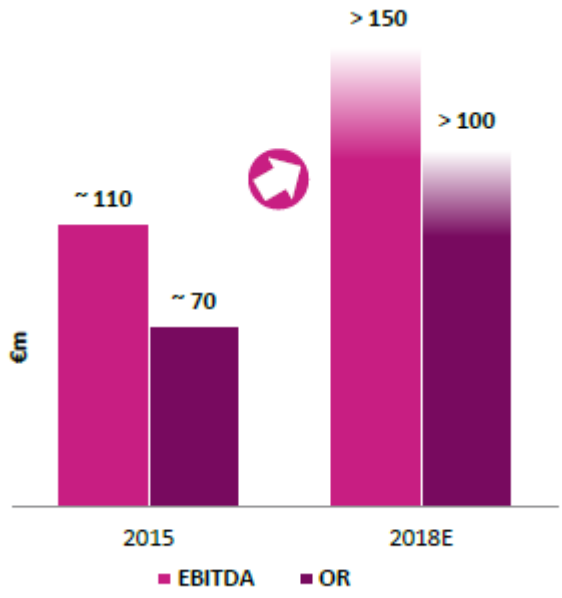


Source: SMA Solar, Warburg Research

SMA's assumption is also supported by Bain, which estimates that centralized energy generation will decline by 20% through 2020 as distributed energy grows and plays an increasing role. While we do not expect a sudden disruption of the traditional centralized supply model, we acknowledge that the current supply system is likely to change in the coming years.

This is exactly where innogy's energy+ product offering comes into play. In 2015, energy+ already generated an EBITDA result of EUR 110m, contributing 11% to the division's total EBITDA result.

Energy+ product offering to drive profit growth



Source: innogy, Warburg Research

Below we have summarized the key performance figures of the new energy offering:

How does the energy+ business perform?

- In 2015, the energy+ products contributed 11% to the Retail adj. EBITDA (EUR 110 million) and 8.4% (EUR 70m) to the segment's adj. EBIT. In the past years, the share of energy+ products in the Retail segment continuously increased
- The CHP business is the largest earnings contributor to energy+ business with > 110,000 customers and rather asset-intensive. Therefore, the allocated capex volume for energy+ products mainly focuses on the heating business
- In the segment e-mobility: Overall > 5,700 charging points in > 20 countries, 470,000 charging processes, 4.5 GWh electricity charged
- Segment connected home: 800,000 units of the "SmartHome" system were sold by the end of 2015; in the cooperation with Nest, 30,000 additional units were sold

Future prospects

- By 2018, innogy expects energy+ to generate an adj. EBITDA and adj. EBIT of more than EUR 150m and EUR 100m, respectively.
- The energy+ business is seen as an investment in future challenges regarding further and growing new demands of customers
- Moreover, innogy aims to benefit from significant momentum in the non-commodity business via its energy+ product offering.
- Growth rationale for energy+: Diversification of current traditional retail business, building customer loyalty, support for retention of traditional commodity-linked energy contracts (commodity-linked products) as well as to push existing and launch new offerings.

The importance of the energy+ business for future viability

The challenges posed by the expected rise of decentralized energy supply could also provide attractive opportunities for traditional utilities such as Innogy. In fact, Innogy is already in the process of complementing its traditional business model and is increasingly moving towards new offerings to help customers manage their own decentralized energy supply, controlling the distribution and consumption of energy within their local distribution network. With its wide range of energy+ products, Innogy is capitalizing on exactly these opportunities.

We have outlined key offerings of energy+ below which should enable the company to tackle the disruption of the traditional energy supply model:

Heating businesses and services

Development, manufacturing, sale and lease of systems which enable customers to produce and store their own energy, such as Combined Heat Power solutions (CHP).

Energy services

Energy audits and savings solutions, operation & maintenance and repair services, energy management / IT solutions for customers with decentralised energy generation.

E-mobility / Electrical vehicles (discussed in greater detail below)

Charging points, cooperation with utilities and B2B partners in Germany within the context of establishing an electric vehicle infrastructure. The segment comprises the provision of state-of-the-art hardware, the operation of infrastructure owned by innogy or by one of the partners mentioned above as well as the provision of full back-end solutions (e.g. billing or utilization monitoring).

Lighting:

LED bulb rental business (the rental of LED bulbs by customers who want to avoid the costs of a new purchase in the course of power saving consultation services).

Connected home (B2C):

Development and sale of own “SmartHome” system mainly in Germany (including: heating thermostats, devices for monitoring energy consumption, fire detectors, door and window sensors) to optimize energy consumption.

Powerhouse solutions (B2B):

A tailored system for customers to directly control and manage power production and consumption in their own business / factory.

Insurance services:

In cooperation with a Polish insurance company, for example, a service is offered to provide customers with professional help in the event of breakdowns or damage in the home or office; this help may include plumbers, electricians, heating appliances specialists.

Smart meters:

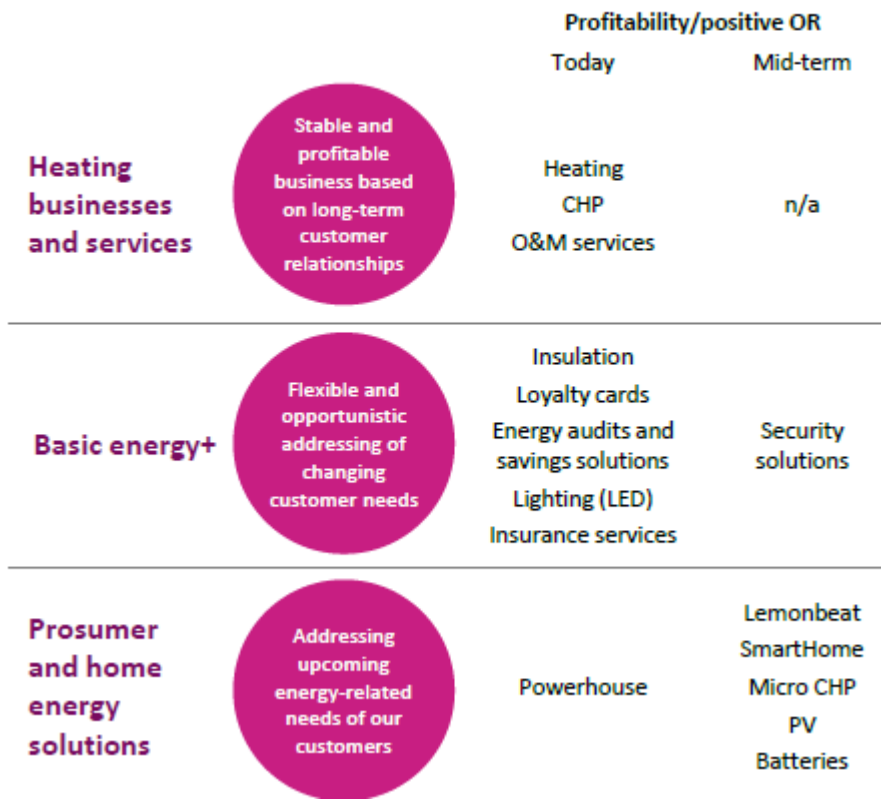
Development, manufacturing and sale of several smart meters to the UK (e.g. to prepayment meters customers).

Further IT solutions:

Online portals allowing price-based comparisons of tariffs, like “eprimo” or “Energiedirect” (providing services as internet-based supplier).

Other systems that provide production and storage solutions like batteries or photovoltaic systems.

Energy+ product offering



Source: innogy, Warburg Research

Capitalizing on the mega trend e-mobility

Although electric vehicles are part of innogy's retail business, the company's activities in the fields of e-mobility deserve a more detailed presentation. We believe this is where innogy sets itself apart from other (German) utilities and where innogy could generate a significant portion of its future growth.

innogy has firmly established itself as one of the major players in the e-mobility market. Besides being the German market leader, innogy has already established a considerable charging infrastructure across Europe. With 4.5m kWh charged in 470,000 charging processes in 2016, innogy already provides a large number of EV owners across Europe with charging infrastructure and electricity. Beyond this, innogy has entered strategic partnerships with more than 100 local utility providers and more than 50 B2B partners (e.g. VW, Daimler, SAP, Siemens, Tank und Rast) which improves its competitive position. Daimler, for instance, has already installed more than 550 innogy CPs and will order more as the fleet of EVs grows further.

We believe that innogy is well on track to capitalize on its first-mover advantage in Germany. More importantly, we expect demand for private as well as publicly accessible charging points to skyrocket once carmakers are required to abide by new EU legislation from 2020 onwards to meet the standard of an average CO2 emission of 95g/km for new car registration. With its strong positioning, innogy should then benefit from accelerated growth in electric vehicles.

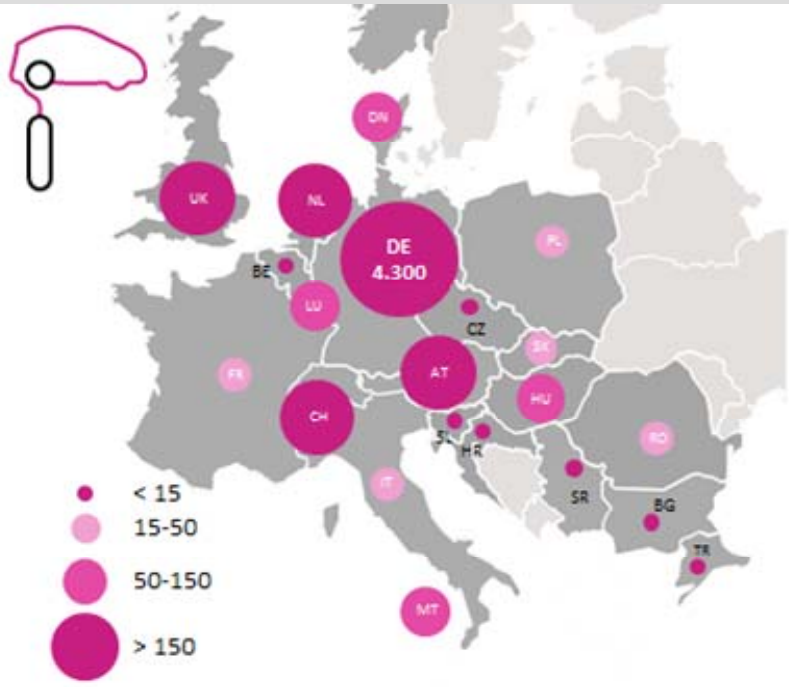
Germany

In its core market Germany, innogy currently has a total of 4,300 charging points, distributed across 630 cities. Unlike many other providers that are only locally focussed, innogy is present nationwide. Of its 4,300 CPs, about 2,100 are publicly accessible CPs, operated by innogy alone or in cooperation with local utility providers. This gives innogy a market share of c. 28% in publicly accessible CPs. Innogy also has by far the highest number of publicly accessible CPs that are already compliant with the new regulations for CPs (Ladesäulenverodnung), showing that the company's rapid adaption to latest standards equips it with sufficient potential to manifest its market leadership in Germany. The remaining 2,200 CPs are located at companies where they can be used by employees during the day.

Europe

Innogy offers hardware and operates charging stations across Europe. In March 2017, 5,700 CPs were installed in 20 European countries, 1,400 of them outside of Germany. Apart from these charging stations, innogy also sells so-called "wallboxes" for private charging, 8,100 of which have already been installed. Apart from Germany, the top markets for innogy are Switzerland, Austria, Netherlands and the UK. In all of these countries, innogy has more than 150 CPs. Especially in the UK, the company extended its presence in 2016 and early 2017, in line with increased market growth there.

Overview of innogy charging points in Europe (March 2017)



Source: Innogy, Warburg Research

One-stop-shop product offering in e-mobility

Innogy's particular strength lies in its ability to provide the full range of offerings covering the entirety of the value chain for both public and private charging. In contrast to some of its competitors, who focus solely on the operation of CPs or the provision of hardware, innogy offers:

- Installation and operation of a dense net of publicly accessible CPs that is expanded every month (5,700 CPs in Europe)
- Grid connection and management of CPs
- Hardware and equipment for private charging at home (wallboxes, 8,100 units already sold)
- e-mobility related services for other CP operators
- Supply of green electricity
- A comprehensive IT backend of highest quality (innogy claims to be the only provider in Germany able to bill on a kWh basis)

What is the business case in e-mobility?

We believe that innogy's first-mover advantage, its first-hand experience and its positioning as a one-stop-shop in e-mobility is of high value. We thus believe that innogy's investment case includes an attractive option value with respect to the company's e-mobility activities. However, for the time being it is difficult to estimate the earnings potential for innogy from these activities.

Most discussions currently revolve around innogy's comprehensive public charging infrastructure (we elaborate on this in detail below). We have crunched the numbers on innogy's charging infrastructure, which leads us to the conclusion that electricity sales from publicly accessible charging points is presumably not going to make up a sizeable portion of the company's e-mobility earnings in the near term, i.e. by 2020. Nonetheless, with a sharp increase in EV numbers in the mid term, we expect a huge new market to emerge as increasing numbers of EVs are set to create additional demand for electricity, which should result in additional electricity sales.

Our calculation below is based on the following assumptions:

- We assume that the number of EVs in Germany will hit 500k in 2020, in line with recent targets defined by the German administration. Looking further ahead, we now assume that electric vehicles will represent 90% of all cars in Germany in 2005 (a similar assumption was made by National Grid in its recent future scenario analysis for the UK). That would point to c. 41.2m EVs in 2050, assuming that the total number of cars in Germany remains unchanged (i.e. our assumption does not account for population growth or a change in the penetration levels of car ownership). We also include a mid-term scenario, assuming 6m EVs in 2030, in line with the target set by the German administration.
- In addition, we assume that the average annual distance travelled remains flat at 14,000km and that average consumption would remain at about 18 kWh/ 100km.
- Finally, we assume an average price per kWh of EUR 0.30, in line with current pricing at innogy's publicly available charging points.

Based on our assumptions we have calculated that additional electricity sales for EVs in Germany could amount to EUR 378m in 2020. Assuming innogy secures a market share of c. 30% implies additional annual electricity sales of 113.4m.

In order to grasp the true long-term potential of electricity demand from EV utilisation, we prefer to take a look at the market potential in 2050. Based on the assumptions above, we derive additional annual electricity demand of 104TWh (representing c. 20% of the net electricity consumption in Germany in 2016) to supply the estimated number of EVs. If we assume unchanged pricing, that would result in additional electricity sales of EUR 31.2bn. Now if we stick to our market share assumption of c. 30% for innogy we would arrive at potential electricity sales in order to supply EVs of EUR 9.3bn.

Potential additional electricity demand from EVs in Germany

	2020	2030	2050
EVs	500k	6m	41.2m
average annual distance (km)	14000	14000	14000
average consumption (kWh/100km)	18	18	18
Annual electricity sales (EUR)	**378m**	**4.5bn**	**31.2bn**

Source: Warburg Research

As can be seen from our example above, we don't expect electricity demand from EVs in Germany to drive sales in the coming years. We, however, see significant short- and mid-term potential for innogy in the following activities:

- Grid connection and installation of CPs. This is where innogy can add value with its expertise in grid management, in our view. This is particularly true for fast-charging stations which require excellent grid management capabilities.
- Business opportunities at private CPs. Since most of the EVs will be charged at home, most EV owners will require a new electricity contract. That could offer significant business opportunities for innogy. In addition, innogy offers the necessary hardware via the sale of its wallboxes.
- O&M of CPs on behalf of B2B partners such as Tank & Rast. Innogy is currently setting up approx. 150 fast-charging stations for the motorway service operator and has recently signed a long-term cooperation agreement to take over the operation of these CPs and to supply electricity from renewable sources for these stations.
- Finally, innogy currently boasts an industry-leading IT backend which allows it to bill on a kWh basis. The company could offer its IT services to other CP operators.

So what about the publicly accessible charging infrastructure?

As outlined above, with the current low frequentation of CPs, the operation of public charging infrastructure is not profitable. According to estimates of the NPE (Nationale Platform Elektromobilität), a German government-funded expert initiative for e-mobility, this could change from 2020 onwards, due to:

- **Increased frequency** of CP use due to significant increases in the number of EVs
- Government **subsidies** for the installation of charging infrastructure

- Innogy's ability to establish a dense CP net in and beyond Germany before demand picks up and to gain a good position in other EV strongholds in Europe
- **Scalability** of hardware and operational costs: potential to cut costs per CP by 50% until 2020 (see table below)
- Higher customer acceptance of energy price mark-ups for rapid charging

Charging infrastructure costs 2015 and 2020

type	Alternating current (AC)		Direct current (DC)	
numer of CP	2		1	
electric capacity (kW)	up to 22kW		50kW	
	2015	2020e	2015	2020e
hardware costs	5000	2500	25000	15000
connection costs	2000	2000	5000	5000
permit, planning and location search	1000	1000	1500	1500
assembly and labelling	2000	2000	3500	3500
CAPEX	10000	7500	35000	24000
special use	e.g. tender in Berlin, EUR 180			
maintenance	typical maintenance contracts			
communication costs	standard mobile contracts			
contract managemnt and accounting	0.5-1 person required			
IT costs				
OPEX (€/a)	1500	750	3000	1500

Source: NPE, Warburg Research

Market overview of charging infrastructure

To make the operation of **charging points** (CPs) profitable, two core requirements need to be satisfied: CPs must be used at a sufficiently high frequency of 5-10 charges per day and the operating company must have dense net of CPs as well as an efficient IT backend. Whether the use of CPs can be increased from today's average of less than one a day to between 5 and 10 uses will crucially depend on whether the number of **electric vehicles** (EVs) indeed increases as significantly as governments plan.

Germany

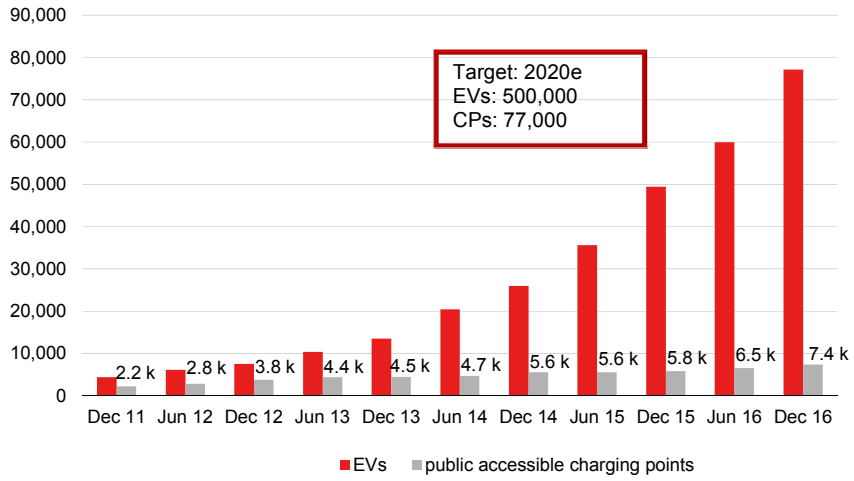
The number of EVs (which includes both Battery Electric Vehicles (BEV) and Plug-in Hybrid Vehicles (PHEV)) in Germany has risen steadily over the last years and stood at 69,000 at the beginning of 2017. As the growth rate has recently slowed down, the government has had to declare that its defined target of 1m EVs by 2020 was unrealistic. The development of EV numbers depends on rather unpredictable factors such as oil prices or the level of customer acceptance. We think that 500,000 EVs by 2020 is a more realistic scenario. At present growth rates, the 1m-mark would then be hit by 2022. Much of the sluggishness in new EV registrations can be explained by a lack of variety in car models and prices. As all major carmakers have numerous models in the pipeline to be released from 2018 onwards, the share of EVs in new registrations will pick up significantly. This in turn will increase the demand for CPs and the charging frequency per CP.

Estimates of charging points quite often vary as they mostly rely on registrations which are not mandatory, particularly for private stations. BDEW, the German water and energy industry advocacy group, delivering the most reliable numbers, counted 3,206 publicly accessible charging stations with a total of 7,407 CPs at the end of 2016. However, they estimate that some 70,000 publicly accessible normal CPs (up to 22kW) as well as more than 7,000 rapid CPs (more than 22 kW) will be required by 2020, i.e. a tenfold increase from today's numbers. Various initiatives, both public and private, such as the recent joint agreement by leading carmakers, are striving to extend the rapid charging infrastructure.

As only about 20% of charging processes are made at public CPs according to the Federal Association for e-Mobility, the market for private charging solutions including wallboxes (hardware), installation and maintenance is also highly important. Although not everyone can install wallboxes at home, the majority of EV owners primarily charge at home and use private charging solutions that offer a higher charging speed than conventional plugs.

Towards 2030, both the number of EVs and the required infrastructure is likely to continue to grow strongly. With targets of 6m EVs in Germany by 2030, an even more comprehensive expansion of infrastructure will be required.

Development EVs and publicly accessible CPs in Germany



Sources: BDEW, Warburg Research

Europe

One-third of all EVs are presently registered in Europe, where the forerunners include Norway, the Netherlands and France. Growth figures in the UK have also picked up over the past two years. France, for instance, has a target of 2m EVs by 2020. In Norway, EVs have already reached market shares of more than 20% (Netherlands 10%). Beyond 2020, carmakers will be required by new EU legislation to meet standard average CO2 emissions of 95g/km for new registrations which we believe will further accelerate the increase in the number of EVs, especially PHEVs.

In terms of charging points, France and the Netherlands are the European leaders. The Netherlands has a very dense network of CPs with 1.7 CPs per EV on average. France has recently had fourfold increases in fast chargers and growth has also been strong in the UK and Spain. Under the EU alternative fuels infrastructure directive (2014/94/EU), member states have to set targets for CPs to be achieved by 2020. The International Energy Agency (IEA) estimates that globally, CPs must increase tenfold by 2020 and then by a factor of 80-120 between 2020 and 2030 to meet the goals of the Paris Climate accord in this area.

Earnings outlook

We illustrate in the table below our key figures forecasts for innogy's retail division. We expect the German retail unit to deliver sustainable earnings growth on the back of the energy+ products, which are incorporated in the German retail segment. In total, we expect the energy+ product offering to add EUR 60m in EBITDA between 2016 and 2019e.

For the UK retail unit, we assume a slight improvement in the adj. EBITDA figure in FY 2017 despite higher customer churn and higher network costs. Our assumption is based on the realisation of targeted cost savings of EUR 200m in the course of the year. We therefore expect the UK business to pass the trough in 2017. Between FY 2016 and 2019, we expect a subsequent recovery in the adj. EBITDA result by EUR 70m, driven by the materialisation of incremental cost savings to the tune of EUR 100m.

Besides the positive impact of energy+ and the restructuring of the UK business, we remain cautious and do not assume profit growth via customer base expansion or other measures and rather assume a stable customer base.

Forecast of key figures: Retail (in EUR m)

Retail	2015	2016	2017e	2018e	2019e
Revenues	34,491	31,909	30,633	30,326	30,023
adj. EBITDA	**988**	**1,057**	**1,066**	**1,124**	**1,165**
Germany	583	592	595	638	648
UK	-65	-11	10	30	60
NL/BE	236	233	226	225	224
Eastern Europe	234	243	236	232	232
adj. EBIT	**830**	**844**	**866**	**920**	**957**
Operating D&A	158	213	200	204	208
Capex	287	203	250	250	250

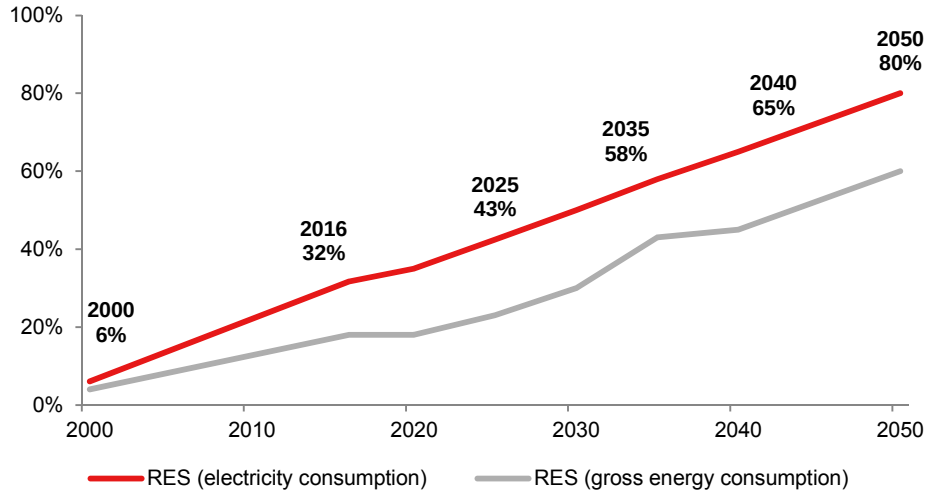
Sources: Warburg Research

Renewables

We genuinely believe the promotion of renewable energy will turn out to be one of the key issues in the next decade. Consequently, innogy is well positioned to benefit from increasing demand for renewables based on its sizeable portfolio of 3.4 GW (accounting view), mostly consisting of onshore- and offshore wind-farms as well as hydro plants across Europe. Moreover, growth in the segment is mainly driven by capacity growth, which, in turn, looks very promising for FY 2017 and 2018. As a result, we expect the division to experience significant growth in FY 2018.

Generally, promotion of renewables will remain at the forefront of the agenda of many European administrations. Various European countries have set ambitious targets with respect to the share of renewables in produced energy. This, in turn, requires sizeable capacity additions across Europe in the coming years.

Targeted development of renewable energies in Germany



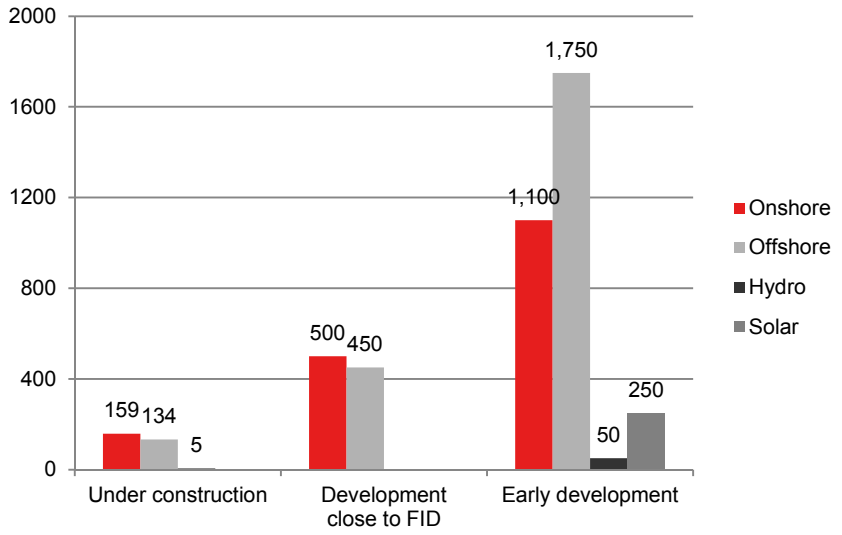
Source: Warburg Research

Imminent capacity ramp-up set to drive renewables business

As already mentioned, capacity growth in the renewables business is of considerable importance to innogy as this represents the key lever for the company to grow its earnings.

In our view, short-term prospects for the renewables business look very appealing. Although the chart below is slightly out of date as it is based on data from August 2016, it shows innogy's current construction pipeline, which consists of projects with a total nominal capacity of more than 300 MW. This is expected to be fully commissioned by 2018, indicating a sizeable boost in capacity growth in the coming months. Analysing innogy's most recent project pipeline update from March 2017, we conclude that imminent capacity ramp-up might be closer to 400 MW by the end of FY 2018. We elaborate on this in greater detail further below and in our earnings outlook for the renewables segment.

Overview of innogy's project pipeline (in MW) as of August 2016



Source: Innogy, Warburg Research

Projects currently under construction consist of German offshore project Nordsee 1 (332 MW, 15% stake), UK offshore project Galloper (336 MW, 25% stake) as well as onshore wind projects such as UK project Goole 2 (35 MW, 100% stake) and Zuidwester (90 MW, 100% stake, commissioned in February 2017). These projects benefit from a support scheme such as fixed FITs in Germany and ROCs (Renewable Obligation Certificates) in the UK. From an accounting and from a pro-rata point of view, these projects should add 125 MW and 260 MW of capacity, respectively.

Key projects to be commissioned in FY 2017/18

	Nordsee 1	Goole 2	Zuidwester	Galloper
Country	GER	UK	NL	UK
Technology	Offshore	Onshore	Onshore	Offshore
Full capacity (MW)	332	35	90	336
innogy stake	15%	100%	100%	25%
Expected CoD	Q4-17	Q1-17	Q2-17	Q1-18
Support scheme	Feed-in tariff (EEG 2014[2])	0.9 ROC	SDE+ €80/MWh	1.8 ROC

Source: Innogy, Warburg Research

Moerover, the table below provides an extensive overview of innogy's development pipeline for projects with a commissioning operation date (CoD) in FY 2017 or 2018, indicating a promising pipeline for FY 2018 as well.

Finally, the project development totals about 4 GW (not probability weighted), leaving ample opportunities to grow the business. These projects, which are either close to the FID (final investment decision) or in the early development stage, mostly consist of onshore and offshore projects but also include solar projects.

Projects under construction and development pipeline: Immense capacity ramp-up imminent

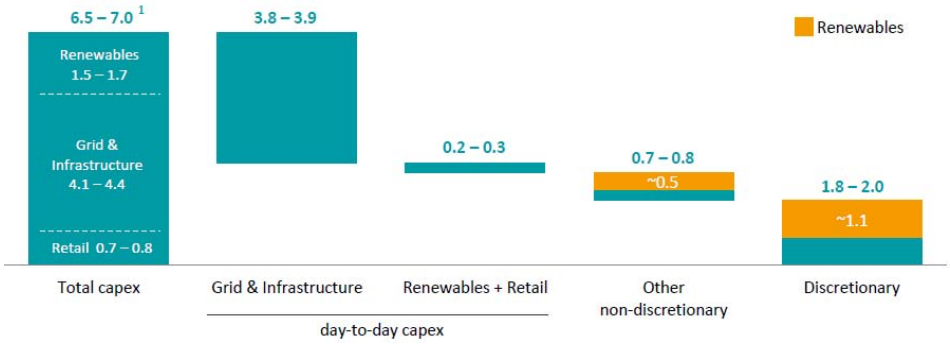
	Nordsee 1	Galloper	Brechfa West	Goole 2	Mynydd y Gwair	Bad a Cheo	Eschweiler Nord	Eschweiler Fronhoven	Wiedenfelder Höhe	Grudie
Country	GER	UK	UK	UK	UK	UK	GER	GER	GER	UK
Technology	Offshore	Offshore	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore	Onshore	Hydro
Full capacity (MW)	332	336	57	35	33	27	13	29	13	2
innogy stake	15%	25%	100%	100%	100%	100%	51%	51%	100%	100%
Expected CoD	Q4-17	Q1-18	Q1-18	Q1-17	Q4-18	Q2-19	Q2-17	Q3-17	Q3-17	Q1-17
Support scheme	EEG '14	ROC	ROC	ROC	CfD	CfD	EEG '14	EEG '14	EEG '14	FiT/ Wholesale
Capex[1] (innogy share)	€43m	£95m	£89m	£50m	£52m	£35m	€10m	€21m	€19m	£8m
IRR[2] ranges	Offshore: ~13%					Onshore: 6-11%				Hydro: ~9%

Source: innogy, Warburg Research

Total investment in renewables of EUR 1.5bn-1.7bn by 2019

Innogy's renewables business stands very much at the centre of the company's capex programme. As can be seen from the chart below, the company intends to spend EUR 6.5-7.0bn in total between FY 2017-2019. While the Grid & Infrastructure business is likely to account for a large chunk of the total amount, the renewables business is expected to benefit to a large extent from discretionary investments, which should drive the company's capacity growth. From the company's outlined capex programme we take it that innogy is ready to invest should attractive renewable projects arise.

Discretionary capex investments to focus on renewables

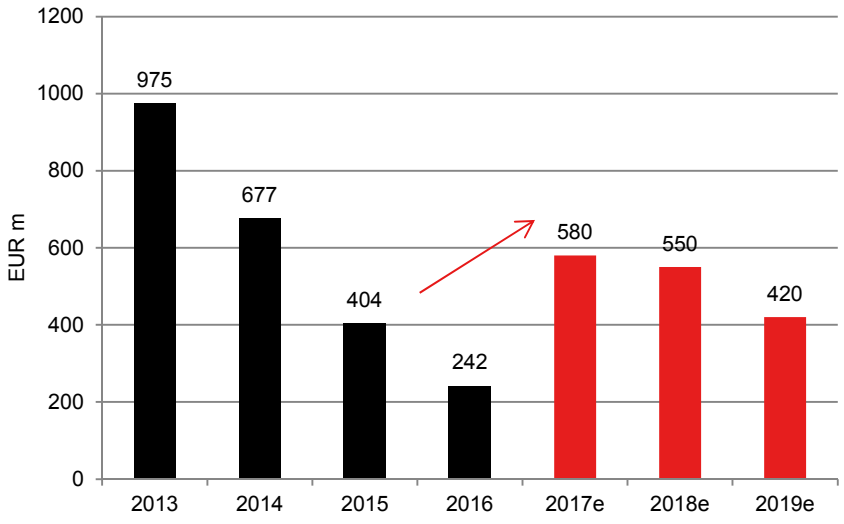


Source: Innogy, Warburg Research

We believe the well-filled project pipeline is likely to be reflected in a stellar increase in capex investments in FY 2017 and 2018. Consequently, we estimate a surge in renewables capex from EUR 242m in FY 2016 to EUR 580m in the current fiscal year.

Moreover, we estimate cumulative renewables capex of EUR 1,550m, broadly in line with the mid-term company guidance.

Stable capex investment in Renewables expected



Source: Warburg Research

Realisation of offshore projects increasingly challenging

Despite our generally positive view of innogy's project pipeline, we take a rather cautious view of the viability of the company's offshore projects, particularly with respect to the German offshore project Kaskasi.

Our view is based on our observation that subsidies for offshore wind projects have been in freefall recently. Until recently the German Renewable Energy Act guaranteed a general subvention for offshore energy in Germany of 18.4 ct. / kWh. However, in 2017 Germany has switched from a FIT system to an auction model and thus offshore auctions will now determine the level of subsidies via auction bids.

Before Germany ran its first auction in April 2017, Denmark and the Netherlands had already tendered power purchase agreements in the course of offshore wind auctions. These tendering procedures are constructed like reverse auctions. This means that the government defines the required capacity which is put up for tender and the energy companies submit their bid (usually based on already prepared projects with specific capacity) and the lowest bid will be awarded the contract. The main intention behind the introduction of auctions is to move towards a market-based system in order to increase competition and thus lower subsidy levels for the production of offshore wind energy.

Back in 2003, Denmark already started with small offshore auctions (less than 200 MW). In 2010, the first auction with a capacity of nearly 400 MW was conducted. DONG Energy was awarded a subsidy fee of 14 ct. per kWh (or EUR 140/ MWh). Five years

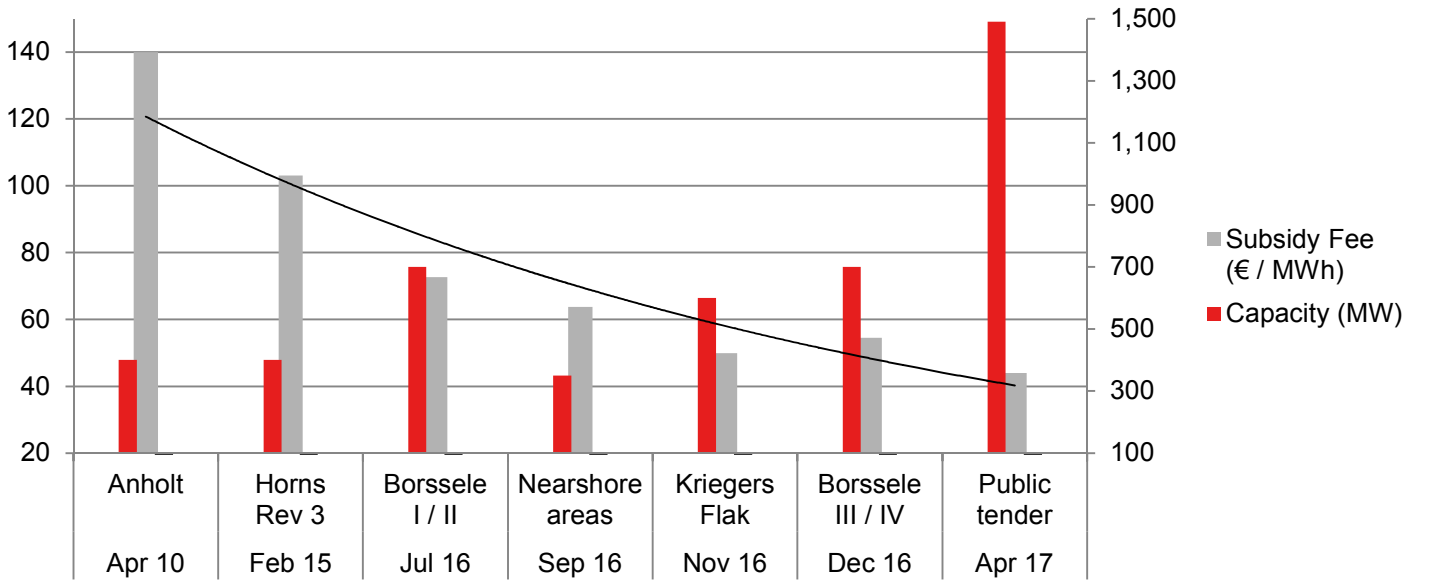
later, Denmark tendered the next large offshore wind project (Horns Rev 3) with a similar project size. Vattenfall won the auction with a successful bid of 10.31 ct. per kWh. At that stage, that represented the lowest ever bid in an offshore auction. There have been a few more auctions in Denmark and the Netherlands since, which resulted in a strong reduction in states subsidies for renewable energy. Clearly, this was a welcome development for the relevant governments of Denmark and the Netherlands.

In November 2016, subsidy levels for offshore wind energy reached a new low in Europe. Offshore wind subsides collapsed to EUR 49.90 per MWh which was a result of the "Kriegers Flak" auction in Denmark. The successful Dutch project "Borssele II / IV", which won the Dutch offshore auction one month later, reached a similar subsidy level and thus underpinned the dramatic fall in feed-in tariffs for offshore wind.

However, the remarkable development was exacerbated by the result of the first German offshore auction in April 2017. The German Bundesnetzagentur (the federal networks agency) tendered power purchase agreements of more than 1.5 GW in the North Sea and the Baltic Sea. The result represented a massive shock for the industry as most successful bids were far below expectations. Three of the four successful bids (submitted by EnBW and Dong Energy) were so called "zero bids". This means that the project owners forego the right to receive fixed feed-in tariff in order to construct and operate those offshore projects. Hence, those projects will be built completely subsidy-free without guaranteed remuneration.

Consequently, the average award price of the first German offshore auction amounted to a mere 0.44 ct / kWh (only one 110 MW project - Gode Wind 3 from Dong Energy - is set to receive a FIT of 6.0 ct /kWh). All projects are scheduled to be commissioned by 2024.

Development of offshore wind subsidies (in EUR/ MWh)



Source: Warburg Research

Current subsidies do not allow offshore projects to meet required IRRs

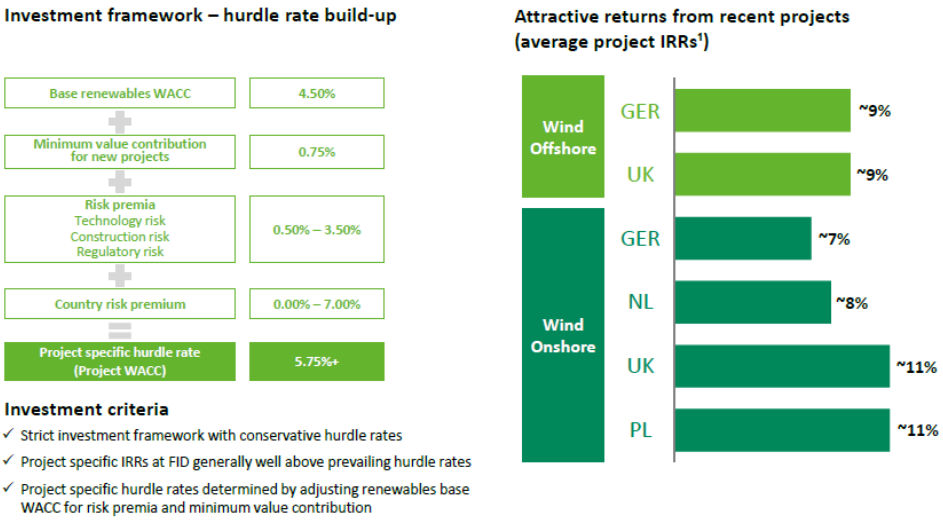
In our view, the so called zero bids do not represent a fair reflection of the current levelized cost of energy (LCOE) for offshore wind farms. We believe that in these cases strategic bidding has played an important role, amounting to bold bets that German wholesale electricity prices (spot prices currently at 3.0 ct/ kWh) will rise substantially from 2020 onwards and that available offshore turbine technology will drive cost down. Dong Energy, for instance, anticipates that offshore turbines with an average output of 13-15 MW will be available by 2024. This compares to the current generation of turbines with a nameplate capacity of c. 8 MW.

Consequently, the auction system has become a lot more speculative and uncertain, in our view. In light of current subsidy levels in Europe, we doubt that innogy could attain its self-imposed IRR targets of at least 5.75% for its 280 MW offshore project Kaskasi. According to the most recent estimate by Bloomberg New Energy Finance (BNEF), new offshore projects which are scheduled for commissioning in the 2020s will merely arrive at a LCOE of USD 50 per MWh, raising doubts about a profitable operation of these offshore projects if wholesale electricity prices do not surge within the next 10 years.

Thus, against the background of the recent German offshore auction results, CEO Terium publicly stated that innogy "won't pursue each project at any price", which represents a rational approach to upcoming tenders, in our view.

This comes despite estimates by Bloomberg New Energy Finance, for instance, in its most recent energy outlook from June 2017 that levelized cost of energy for future offshore wind farms (commissioning in 2021-25) is set to amount to about USD 50/ MWh.

Build-up of minimum hurdle rate for new renewable projects



Source: Innogy, Warburg Research

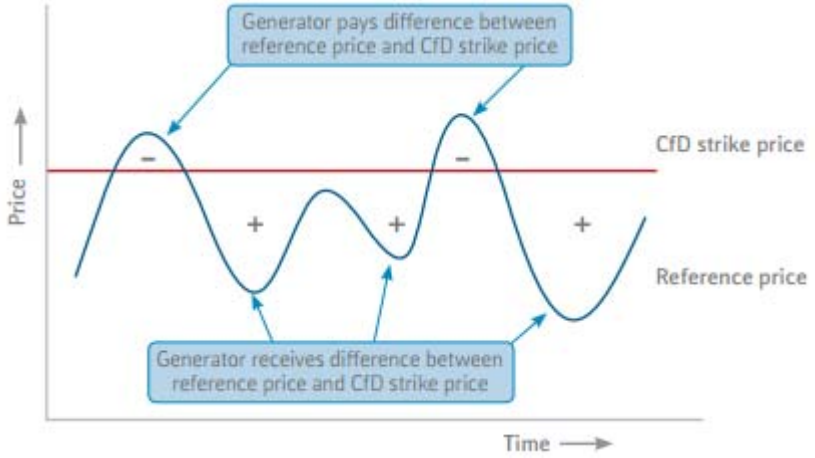
CfD mechanism in the UK to prevent 'strategic bidding'

We are, however, not that pessimistic when it comes to the realisation of innogy's mega 900 MW UK offshore project Triton Knoll as the scheduled auction in FY 2017 is set to be a so-called CfD auction, in which a CfD contract is awarded to the winning bidder. As part of a CfD contract, innogy would receive the difference between its individual pre-

agreed 'strike price' – a price reflecting the levelized cost of energy for the power generator - and the 'reference price' which represents a measure of the average market price for electricity. Thus, if the market price for electricity generated is below the pre-agreed strike price, innogy would receive the difference as a payment (representing the subsidy). However, if the reference price is above the strike price, innogy would not benefit from the increase and would instead have to repay the difference.

We previously explained that the offshore auction in Germany had resulted in 'strategic bidding' as many bidders were betting on a surge in the market price for electricity. In the German auction system the successful bidder would benefit fully from an increase in the electricity price. As this is not true for the UK CfD auction system, we do not expect to see 'zero bids' in the UK auction.

No strategic bidding under the CfD mechanism



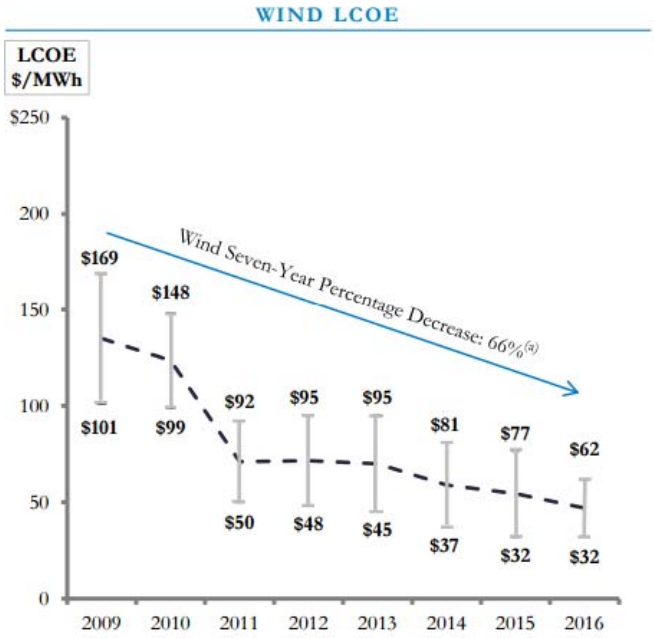
Source: Baringa, Warburg Research

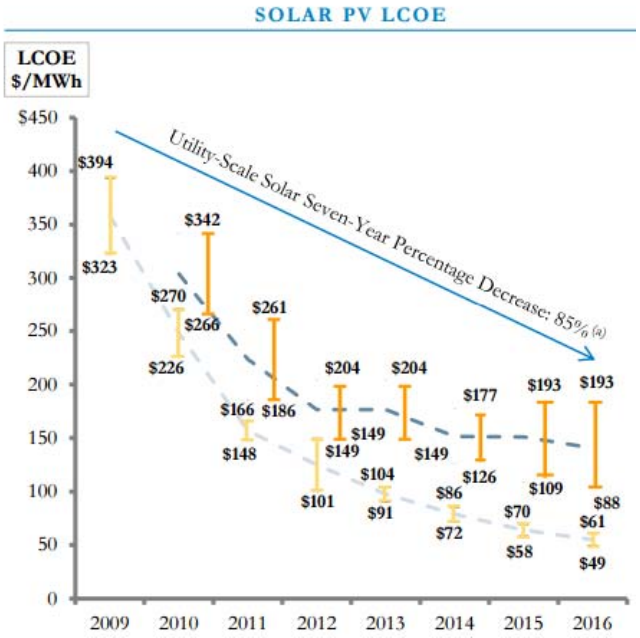
Sunny prospects in solar PV

In contrast to the offshore wind space we see rather good opportunities in the solar industry. Lazard's most recent study on levelized cost of energy from December 2016 shows that solar has caught up with onshore wind with respect to efficiency and cost competitiveness.

The chart below illustrates that unsubsidized levelized cost of energy (LCOE) for PV solar (in the US) has dropped to USD 49-61 per MWh, representing a sharp decline from USD 91-103 per MWh just three years ago. Consequently, cost-efficiency of utility-scale PV solar technology is now comparable to onshore wind which boasts the lowest cost of energy across all alternative energy sources at USD 32-62 per MWh.

Development of levelized cost of energy: onshore wind vs solar PV





Source: Lazard, Warburg Research

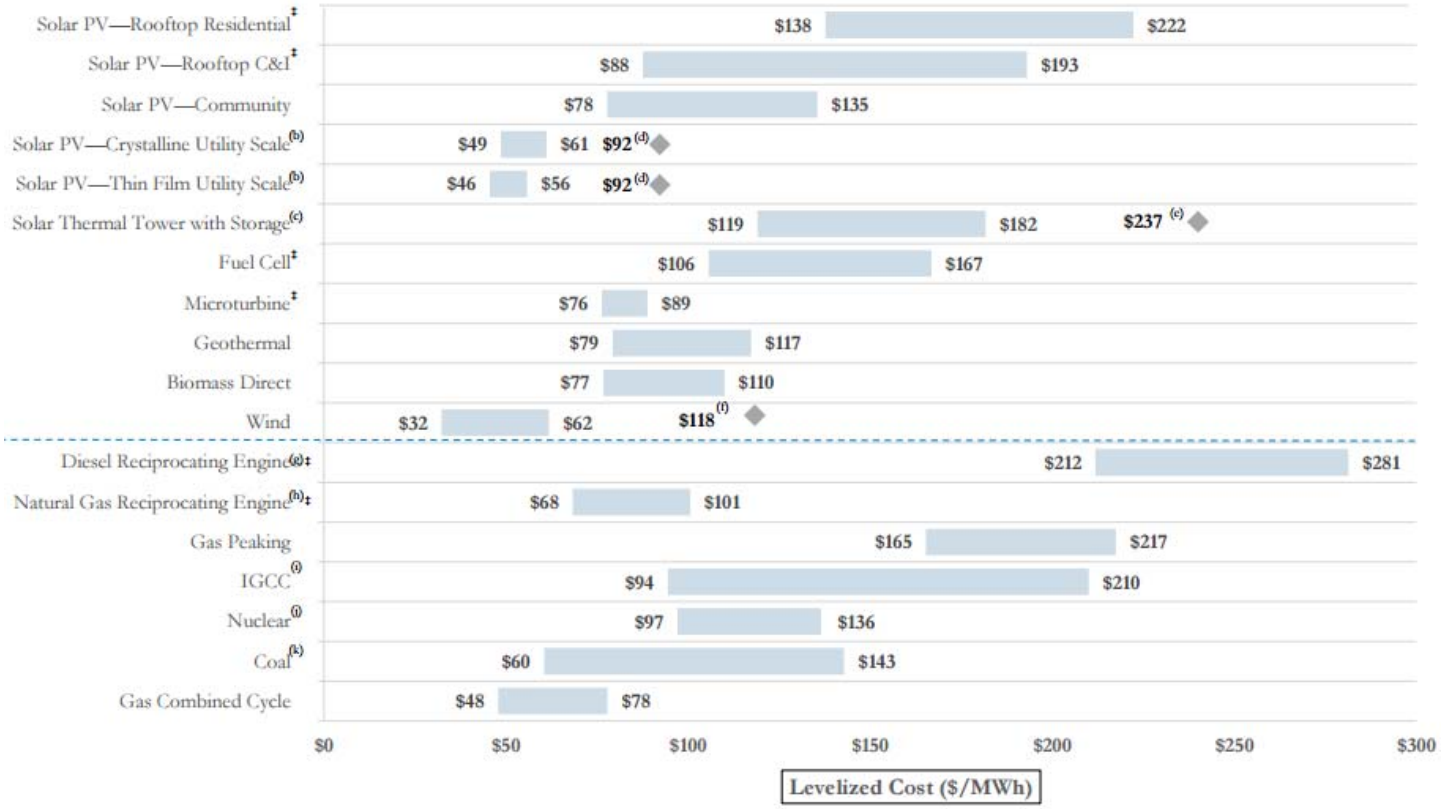
Lowest LCOE always wins

The chart below illustrates that utility-scale solar PV and onshore wind already represent the most efficient technologies for new plants across all energy sources, including conventional generation technologies such as coal and combined-cycle gas.

According to Lazard, offshore wind, however, currently comes with a LCOE of USD 118 per MWh. Bloomberg Energy New Finance expects the LCOE of offshore wind projects, which are currently in the planning, to be USD 50 per MWh at their commissioning date in 2021-2025. However, that implies that offshore wind is still likely to be less cost-efficient than solar PV and onshore wind.

Assuming that future renewable projects will no longer benefit from any subsidies, one needs to compare the LCOE of the relevant technology with the prevailing wholesale electricity price at the time of the commissioning of the plant. Consequently, the lower the LCOE of the project, the higher the profitability of the project. We therefore welcome innogy's move towards solar PV, as that is likely to become the lowest LCOE technology in the 2020s.

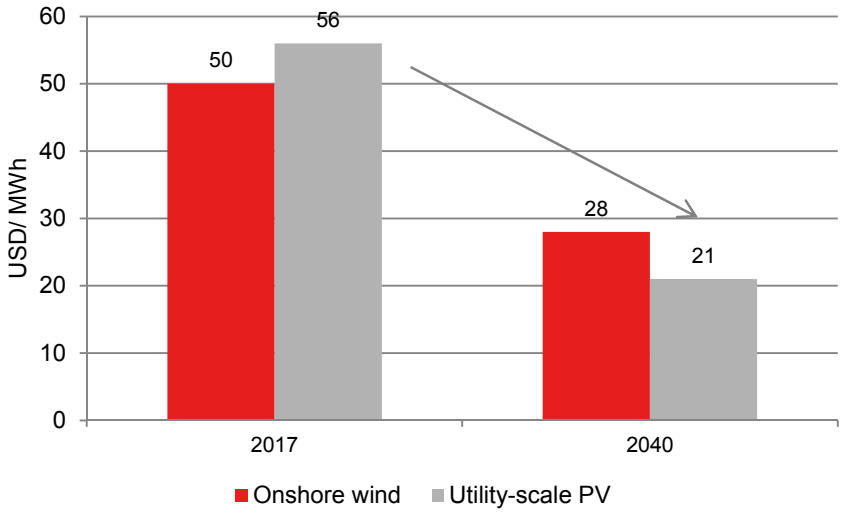
LCOE comparison across alternative and conventional technologies (2016)



Source: Lazard, Warburg Research

More importantly, Bloomberg New Energy Finance expects cost of energy for utility-scale solar PV to drop by 66% through 2040 compared to a 47% fall for onshore wind. Thus, economic competitiveness of solar PV is set to overtake onshore wind and therefore presents an appealing case for innogy to put far greater focus on solar PV going forward. We therefore welcome innogy's decision to acquire German solar specialist Belectric.

LCOE of utility-scale solar PV to drop by 66% through 2040



Source: Bloomberg New Energy Finance, Warburg Research

Belectric acquisition to support solar market entry

Innogy's entry to the solar PV market is supported by the recent acquisition of Belectric in January 2017. The company develops, builds and operates solar power plants and can capitalize on a strong track record. Belectric has installed more than 280 ground-based solar power plants with a total installed capacity of over 1.5 GW. The company is also responsible for the operation and maintenance of solar power plants as part of its O&M business with an installed capacity of more than 1.0 GW. Its customer base includes institutional investors (c. 40% of 2015 revenues), industrial clients and municipal utilities (40% of group revenues).

More importantly, Belectric has been active in key solar markets such as the Middle East, North Africa, India, LatAm and the US.

Finally, the company is also active in the battery storage business. Belectric, for instance, offers efficient solutions (so called Energy Buffer Unit) to help stabilize national energy grids.

Earnings outlook

In this section, we show our estimates for the renewables division, which is based on our assumptions with respect to new capacity additions.

We forecast a capacity increase of 212 MW in FY 2017 (including Zuidwester). Our assumption is based on the expected commissioning of the following projects:

- Onshore wind-farms: Zuidwester (90 MW), Goole 2 (35 MW), Wiedenfelder Höhe (13 MW), Eschweiler Fronhoven (29 MW, 51% stake), Eschweiler Nord (13 MW, 51% stake)
- In the offshore space we anticipate the commissioning of the Nordsee 1 offshore wind-farm in Q4 2017 with a total nominal capacity of 332 MW. Thanks to innogy's 15% stake in the project, the commissioning would translate into 50 MW of new pro-rata capacity for innogy.

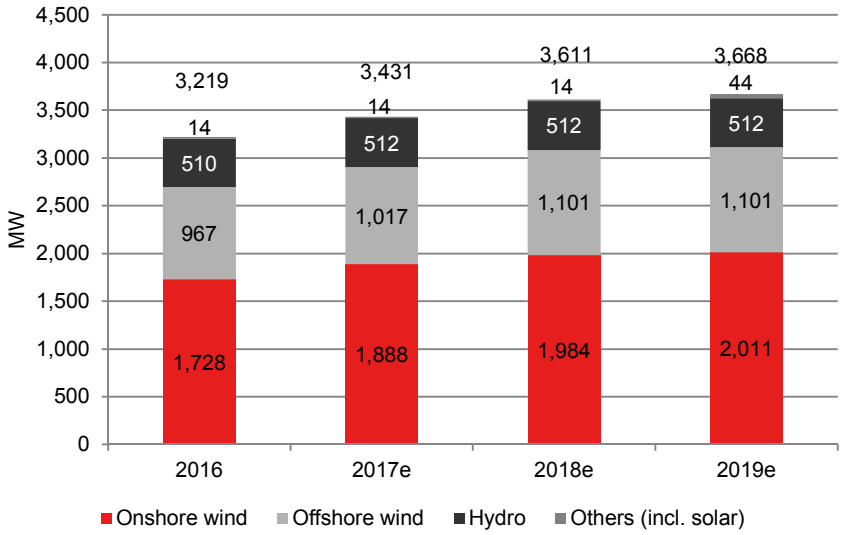
For FY 2018, we expect a capacity increase of 180 MW for innogy, which is based on the commissioning of the following projects:

- Onshore wind projects: Sommerland in Germany with 6 MW capacity as well as the commissioning of the UK wind-farms Brechfa West and Mynydd Gwair with a nominal capacity of 35 MW and 33 MW, respectively.
- We also anticipate the successful commissioning of the UK offshore wind project Galloper with a total capacity of 336 MW, which should result in a pro-rata capacity addition of 84 MW for innogy (25% stake).

For FY 2019, we cautiously estimate the first capacity additions from solar to the tune of 30 MW. Moreover, we expect the commissioning of the Bad a Cheo onshore wind-farm in the UK (27 MW).

In total, we expect the commissioning of c. 450 MW (pro-rata) of new assets between FY 2017 and 2019, which implies an increase in capacity by c.14%.

Capacity forecast (pro-rate view)



Source: Warburg Research

Based on our forecast of a surge in capacity in FY 2017 and FY 2018, we anticipate a significant boost to the division's FY 2018 EBITDA result, which can be seen below.

Generally, we expect the commissioning of the above-mentioned new onshore and offshore wind assets in FY 2017/18 (392 MW) to contribute roughly EUR 100m of EBITDA.

Forecast of key figures: Renewables

Renewables	2015	2016	2017e	2018e	2019e
Revenues	710	768	783	846	888
adj. EBITDA	818	671	680	770	799
contrib. of new onshore assets				34	4
contrib. of new offshore assets				67	0
adj. EBIT	488	359	360	431	453
Operating D&A	330	312	320	338	346
Capex	404	242	580	550	420

Source: Warburg Research

Group estimates and consensus overview

The table below illustrates our estimates for the innogy group. We forecast an adjusted EBIT of EUR 2,950m in FY 2017, some 2% ahead of the company's guidance of EUR 2.9bn. As pointed out earlier, we expect a EUR 200m boost on EBIT level from the German Grid & Infrastructure division as maintenance expenses for the German grid are set to normalise in the current fiscal year. With respect to the Retail and Renewables segment, however, we expect an EBIT result in FY 2017 which is broadly on par with last year's figure. To derive our FY 2017 adj. net income estimate, we strip out adjusted financial expenses of EUR 775m from our EBIT estimate and apply a normalised effective tax rate of 25%. Finally, we consider minority interest of EUR 300m and thus arrive at our adj. net income estimate of EUR 1,331m, which is clearly above the company guidance of at least EUR 1,200m.

Looking ahead to FY 2018, we estimate an adj. EBIT of EUR 3,065m, representing an increase of 3% yoy. Our estimate is mainly driven by the Renewables division, as we expect almost 400 MW of offshore and onshore wind capacity to come online by the end of 2018. We therefore assume that the contribution to adj. EBIT by the Renewables division will increase by some EUR 70m in FY 2018. In addition, a modest recovery in profitability of the UK retail unit as well as further gains from a growing energy+ business is forecast to drive the group result in FY 2018.

Finally, for FY 2019 we estimate rather flat adj. EBIT development for the group as continued improvements in the UK retail unit and modest EBIT growth in the Renewables segment will probably be offset by a lower adj. EBIT result in the Grid & Infrastructure segment. The regulated German electricity grid business in particular is set to suffer from lower allowed returns with the start of the new regulatory period in FY 2018.

We assume a decline in adjusted financial expenses from EUR 874m in FY 2016 to EUR 625m in FY 2019 as the company should benefit from lower amortization of the 'step-up' on bonds, which is included in the adjusted financial result. In addition, we expect the refinancing of bonds with a total nominal value of c. EUR 2.0bn (with a current average coupon rate of 5.875%), which should cut financial costs by c. EUR 80m. Consequently, our adj. net income grows by 19% and 10% in FY 2017 and 2018, respectively.

Overview of group estimates

FY End: 31.12. in EUR m	CAGR (16-19e)	2013	2014	2015	2016	2017e	2018e	2019e
Sales	-3.3 %	46,029.0	43,506.0	43,456.0	41,549.0	40,786.0	37,645.3	37,614.2
yoy		-	-5.5 %	-0.1%	-4.4 %	-1.8 %	-7.7 %	-0.1%
EBITDA adjusted	3.0 %	4,194.0	4,297.0	4,521.0	4,203.0	4,429.3	4,573.8	4,591.6
EBITDA adjusted-margin		*9.1%*	*9.9 %*	*10.4 %*	*10.1%*	*10.9 %*	*12.1%*	*12.2 %*
EBIT adjusted	3.7 %	2,844.0	2,859.0	3,050.0	2,735.0	2,949.3	3,065.3	3,052.4
EBIT adjusted-margin		*6.2 %*	*6.6 %*	*7.0 %*	*6.6 %*	*7.2 %*	*8.1%*	*8.1%*
Adj. net Income	10.6 %	1,445.0	1,698.0	1,613.0	1,122.8	1,330.7	1,459.0	1,520.5
EPS	10.7 %				2.02	2.40	2.63	2.74
DPS	8.8 %				1.60	1.80	1.97	2.06
Dividend Yield					4.6 %	5.1%	5.6 %	5.9 %
FCFPS	3.9 %				2.32	1.72	1.83	2.60

Source: Warburg Research

Consensus looks too light with respect to adj. net income

On adj. EBIT level, our estimates are only slightly above consensus estimates (see table below). Nonetheless, our adj. net income estimates for FY 2018 and 2019 are some 11% and 12% above consensus estimates respectively. That represents an important deviation from consensus as innogy will apply its dividend payout ratio on the attained adj. net income figure.

To derive our DPS estimates, we assume a payout ratio of 75%, which represents the mid-point of the envisaged payout ratio of 70-80%. Our DPS estimate for FY 2018 and 2019 nonetheless stand 12% above consensus, respectively.

Consensus overview

innogy - Consensus

As of: 10.07.2017	2017e	2018e	2019e
Adjusted EBITDA	**4,389.0**	**4,518.0**	**4,556.0**
Delta WRe estimates (absolute)	40.3	55.8	35.6
Delta WRe estimates (relative)	*0.9%*	*1.2%*	*0.8%*
Adjusted EBIT	**2,905.0**	**3,005.0**	**3,006.0**
Delta WRe estimates (absolute)	44.3	60.3	46.4
Delta WRe estimates (relative)	*1.5%*	*2.0%*	*1.5%*
Adjusted net income	**1,259.0**	**1,320.0**	**1,359.0**
Delta WRe estimates (absolute)	71.7	139.0	161.5
Delta WRe estimates (relative)	*5.7%*	*10.5%*	*11.9%*
EPS	**2.27**	**2.37**	**2.45**
Delta WRe estimates (absolute)	0.13	0.26	0.29
Delta WRe estimates (relative)	*5.7%*	*11.0%*	*11.8%*
DPS	**1.67**	**1.76**	**1.84**
Delta WRe estimates (absolute)	0.13	0.21	0.22
Delta WRe estimates (relative)	*7.8%*	*11.9%*	*12.0%*

Source: Vara Research as of July 10, 2017, Warburg Research

M&A

Examination of a potential takeover by Engie

A deal could make sense but major obstacles remain

There has been a lot of talk recently about a potential sale of the innogy stake by majority owner RWE. As a result, RWE shares have rallied quite significantly. As this might also have implications for shareholders of innogy, we elaborate on the probability of a potential sale and illustrate major obstacles to a successful takeover of innogy by French utility company Engie.

From a strategic perspective, the deal would make sense, in our view. RWE would receive a stake in a company that has already quit coal energy and is intending to increase its capacity in renewable energy dramatically. In addition, RWE could benefit from a potentially higher dividend yield from its new stake in Engie as well as participate in a company that is much more diversified (following the incorporation of innogy) and benefits from a broader geographic footprint. Finally, it would grant RWE exposure to regions which are much less regulated than RWE's core market in Europe. Engie, for its part, would enter new markets, gain access to a larger customer base and boost its renewables business via the acquisition of innogy.

There are, however, some major obstacles to be overcome: Both parties would have to agree on the form of payment, taking into consideration that innogy's major shareholder RWE is not in urgent need of capital. Moreover, the French state would have to accept a dilution of its 29% stake in Engie and therefore a decline in voting rights which may be in violation of French law. RWE would have to overcome its red line of not investing in nuclear energy since an investment in Engie would come with exposure to nuclear energy. Finally, RWE's supervisory board would have to allow a sale of the innogy stake. This might prove very difficult as municipal shareholders and employee representatives have a majority on the supervisory board and are likely to be very reluctant to approve the sale of the innogy stake. We thus see less than 50% probability of a successful deal. The main obstacles include:

- **51% resolution:** If there's no way to circumvent the approval of RWE's supervisory board to ensure a 51% stake in innogy, the deal could fail at board level, where municipal shareholders and employee representatives are in the majority.
- **French law:** The French state is legally required to hold one-third of Engie. Assuming that the Florange law is not applicable, a dilution of the French state's share to 20% or lower would not comply with French law and could thus represent a deal breaker.
- **Approval of capital increase against contribution**: Depending on prior resolutions, AGM approval might be necessary for the capital increase by Engie – with regard to dilution effects, this could be very critical.
- **Acceptance of dilution by French state:** Even if the French State is legally permitted to reduce its stake to below 20%, it will nevertheless pursue a balance of power and will need to reinvest in new shares. This could be prohibitively expensive.
- **Cash option:** Engie would have an interest in a cash deal to minimize dilution and to save the French state's voting rights. RWE, in contrast, would have an interest in an asset swap because no capital is needed. If an agreement cannot be reached on an appropriate cash option, the deal could fail.
- **Strategy:** A compromise is required for nuclear power plants. If Engie insists on further investment in nuclear power plants and RWE categorically excludes all future

nuclear investment, a compromise would seem very difficult.

No direct talks have taken place so far

In March 2017, M&A rumours regarding innogy and Engie started circulating in the press. Engie is one of the largest utilities in Europe with EUR 70bn in revenues and market cap of EUR 32bn. Moreover, the French utility has a long history of acquisitions and mergers.

The rumours related to a possible acquisition of innogy by Engie. According to media speculation, this deal could be constructed as an asset swap in which RWE would receive shares in Engie. Therefore, RWE would sell its most profitable core business (innogy contributes nearly 90% to the group's turnover) while Engie could enter the German, UK and Eastern European renewables and grid market. Even though this could be a sensible transaction, many obstacles may quickly scupper all merger plans. More importantly, however, no direct talks have taken place between both parties and the rumours have repeatedly been rejected by Engie and RWE.

Deal would require new supervisory board resolution

RWE currently holds 77% of innogy's outstanding shares. Based on an RWE supervisory board resolution in the course of innogy's IPO, the management board of RWE is allowed to sell innogy's stake down to a minimum of 51%. In all other cases – e.g. if RWE plans to sell more than 26% – a new supervisory board resolution is necessary. This means persuading the majority of its members to approve the disposal. That could require a lot of effort in light of the original and frequently repeated business strategy of RWE to retain a majority stake in innogy over the long term. To avoid this procedure, another possibility might be to offer Engie a minority stake of up to 26%. Following several interviews with Engie CEO Isabelle Kocher, however, this possibility is out of question. Therefore, the 51% clause of the supervisory board resolution could be a major obstacle to selling a majority stake. Enabling the deal would require a high level of conviction among board members and a unanimous decision in favour of the merger.

Form of payment

The deal must be worthwhile for RWE according to a statement by RWE CEO Rolf Schmitz. He added that RWE is currently not in any urgent need of fresh capital and the stake in innogy would have to be swapped for something more valuable. In our view this implies that RWE is not interested in cash payments and that the preferred structure of the deal would be a share swap (potentially with a cash option).

This leads us to the following two key questions: (1) Would a stake in French utility company Engie prove more valuable for RWE and (2) how could Engie structure the deal and which form of payment is preferable?

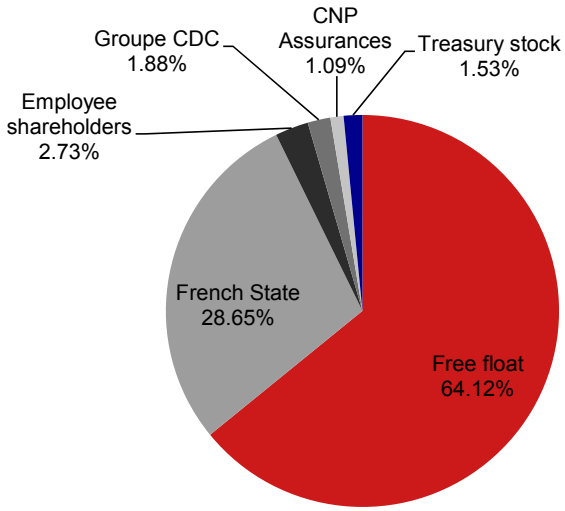
Based on our calculations, RWE's innogy stake would buy about one-third of the new combined French-German group (based on usual utilities EV/EBITDA multiples of 9.0x to 10.0x).

Nonetheless, the overriding aim of RWE's management is to gain a dividend yield that is equal to or higher than innogy's dividend yield. This seems realistic: Engie provides a slightly higher dividend yield than other European utilities and the average French company. Based on DPS and average share price, the dividend yield in 2016 amounted to 7.3% and to 5.8% in 2015 – higher than innogy's dividend yield in 2016. RWE requires continuously high dividend payments to finance their provisions for the ageing nuclear power plants in the course of the nuclear phase-out in Germany. Hence, from RWE's point of view, a sale of the innogy stake would only make sense if Engie could provide a dividend yield on par or above the one offered by innogy. Considering that RWE needs reliable income from dividends, Engie's dividend policy is to be evaluated in the context of sustainability. As we understand, in the past Engie paid its dividend from retained earnings alone, as annual results were negative (please refer to the next section on payout ratios of European utilities). Clearly, Engie made an effort to underline the sustainability of its dividend policy at all costs and thus stick to a dividend per share of EUR 1.00 in 2016, in line with the DPS paid in 2015. That, however, stands in contrast to Engie's EPS generation of EUR -0.17 and -1.93 in FY 2016 and 2015, respectively. As this dividend policy could not be regarded as very sustainable, Engie announced that the dividend for FY 2017 is likely to decline EUR 0.70 per share. At current share price levels of Engie, this would translate into dividend yield of c. 5.0%, indicating that a stake in Engie would at least not result in a lower dividend yield for RWE's shareholders.

French government would have to approve a dilution of its stake

Another significant obstacle to a deal, which is closely linked to the question of payment structure, is the role of the French state in a possible transaction. If Engie "pays" solely with shares in the course of a share swap, RWE's stake in Engie will be much higher than if a cash option is applied. In this context, political and legal interests of the French state might be decisive. There is the possibility that the French state might aim to avoid a blocking minority by a German company in light of substantial differences in attitudes towards the use of nuclear energy sources. A stake of more than one-third in Engie would provide RWE with a dominant position compared to the French state whose stake would be diluted significantly to c. 20%. Thus, paying a large portion of the purchase price in cash would minimize the dilution effect and could be in the interests of Engie. However it might deter RWE as it is currently in no urgent need of cash.

Shareholder structure of Engie as of January 31, 2017



Source: Engie, Warburg Research

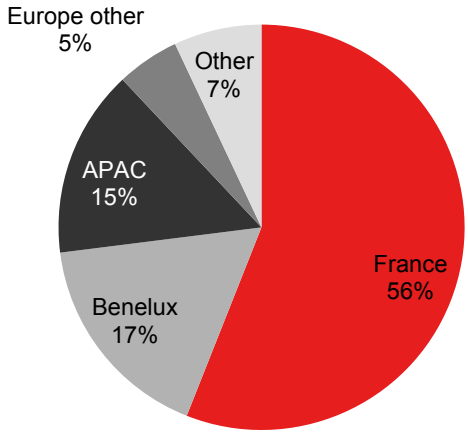
This leads us to another important issue regarding the financing structure of the deal. Under the current shareholder structure, it could be rather difficult to implement a share swap deal which can be achieved by a capital increase against contribution. As already outlined above, in the case of an asset swap, the French state's stake could be diluted to about 20% or lower. This could represent a deal-breaker since French law requires the French state to retain a stake of at least one-third in Engie. Although the newly introduced Florange law (double vote provisions for long-term shareholders) could allow the French state to halve its capital stake but keep one-third control, it is still unclear, if the laws can be applied in combination and if the French state is willing to accept a dilution of the capital stake to under 20%.

As pointed out earlier, a capital increase against contributions, e.g. by issuing 50% new stocks, seems like the most realistic deal structure and would enable RWE to hold one-third of all shares and would dilute the share of the French state to roughly 20%.

Disagreement on business strategy could pose a problem

Engie CEO Isabelle Kocher emphasized Engie's intention not to enter a transaction that would require a subsequent business transformation in terms of energy sources or business strategy. RWE CEO Schmitz, in contrast, excluded any possible future investment in nuclear power plants, which still represents an important source of power generation for Engie. Indeed Engie is still investing heavily in new nuclear power plants like in the UK (Sellafield) or Turkey (Sinop). However, on a more positive note, with a stake in Engie, RWE would gain exposure to new markets such as France and Benelux and would benefit from a diversification effect.

Geographic footprint of Engie



Source: Engie, Warburg Research

Engie, in contrast, plans to boost its installed capacity in renewables. Hence, innogy as the "clean spin-off" of RWE would, in theory, make perfect sense as a potential acquisition target. Nonetheless, a large bulk of innogy's value lies in its grid & infrastructure business. Hence, the question remains as whether Engie would want exposure to the German and eastern European distribution business, which is not the core interest of Engie.

Valuation

- Our forecast FY 2018 dividend yield of 5.3% and an industry leading payout ratio of up to 80% underlines innogy's status as an attractive dividend play.
- In addition, our DCF-based sum-of-the-parts valuation points to a fair value of EUR 42 per share, implying attractive upside potential.
- According to our absolute valuation, innogy's grid business represents the main value driver accounting for c. 65% of the total EV.
- In terms of relative valuation, the stock trades at a premium on EV/EBITDA multiples to its peers, which we, however, regard as justified. The stock's low risk profile as well as the future-proof business model makes the investment case truly unique.
- Finally, as the risk of an industry-wide price cap in the UK has eased, we expect innogy's share price performance to catch up with its German peers.

High dividend yield underlines attractive valuation

Attractive yield story

Best-in-class payout ratio

As well as a high share of regulated income and thus limited downside risk potential, the stock provides investors with exposure to global growth themes such as renewables and e-mobility in particular. Nonetheless, innogy is first and foremost a dividend play, providing a highly attractive dividend yield of c. 5%.

In FY 2016, the company paid out a dividend per share of EUR 1.60 (EUR 888.9m in total), implying a payout ratio of about 80% which stood at the high end of the envisaged payout ratio of 70-80% of adjusted net income.

In a comparison with other large European utilities, innogy's targeted pay-out range of 70-80% is indeed notable and can be regarded as industry-leading, in our view. More importantly, we deem innogy's dividend policy and the current dividend level as sustainable thanks to the company's high share of predictable and stable cash flows, which should limit the risk of a future dividend cut.

Innogy boasts industry-leading payout ratio

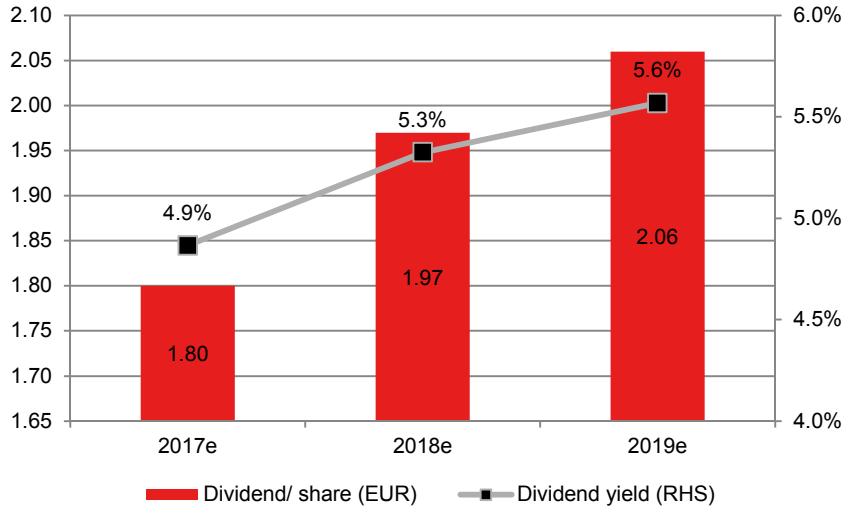
Dividend pay-out ratios of large European utilities (2013 - 2016) in EUR

Company		EPS*	DPS*	DPR*
SSE plc. **	GBR	0.44	0.88	197%
Endesa S.A.	ESP	1.55	1.10	94%
Innogy SE	GER	2.02	1.60	79%
EDF SA	FRA	1.36	1.09	74%
Energias de Portugal S.A.	PRT	0.27	0.19	70%
Terna S.p.A.	ITA	0.29	0.20	70%
Enel S.p.A.	ITA	0.25	0.15	69%
National Grid plc. **	GBR	0.62	0.43	67%
Red Electrica (REE) S.A.	ESP	1.15	0.22	64%
Gas Natural Fenosa	ESP	1.45	0.91	62%
Fortum AB	FIN	2.46	1.10	56%
EnBW AG	GER	-0.77	0.62	47%
Verbund AG	AUT	0.91	0.32	46%
Iberdrola S.A.	ESP	0.39	0.15	37%
EDP Renováveis S.A.	PRT	0.15	0.05	28%
RWE AG	GER	-2.39	0.50	0%
Vattenfall AB	SWE	-1.15	0.00	0%
Uniper SE	GER	-10.04	0.55	na
E.On SE	GER	-2.62	0.50	na
Engie SA	FRA	-1.05	1.00	na

Source: Bloomberg, Warburg Research

To derive our estimates for dividend per share, we cautiously assume the mid-point of the defined dividend pay-out ratio range. Consequently, we estimate a dividend per share of EUR 1.80, translating into total dividend payment of EUR 1.0bn. More importantly, at current share price levels of c. EUR 37 this would imply a dividend yield of c.5% in FY 2017.

Forecast development of DPS and implied yield

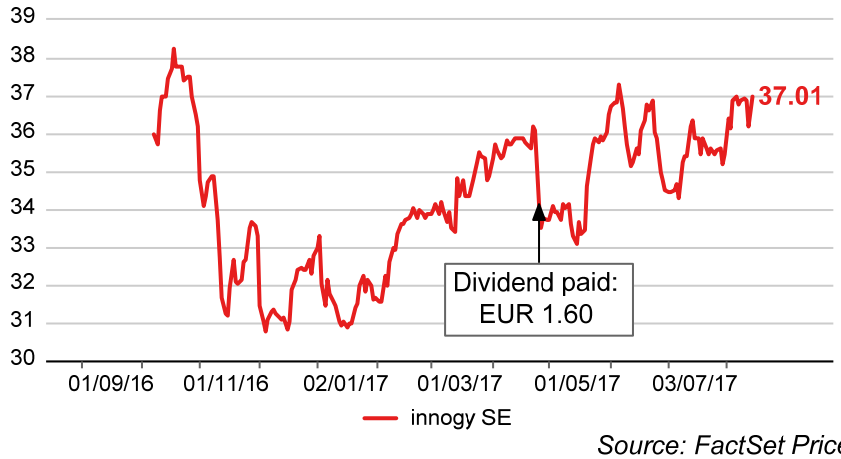


Source: Warburg Research

Share price performance leaves room for more

The shares have traded broadly sideways since the initial public offering of the shares at EUR 36. We believe that negative news-flow with respect to the UK retail market including talk of price caps and the slower than expected recovery of Npower have held the shares back. We expect positive news-flow from the commissioning of numerous renewables projects will make sentiment more bullish and will demonstrate innogy's growth prospects.

Share price performance since IPO

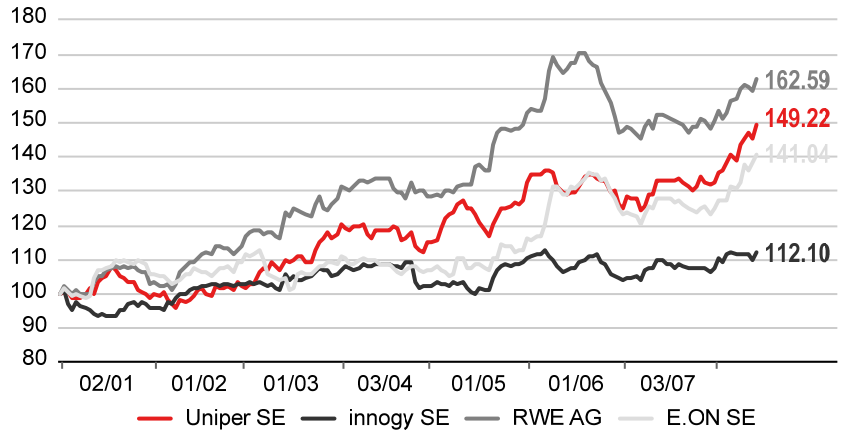


Source: FactSet Prices

Source: FactSet, Warburg Research

Compared to its German utility peers, innogy shares have clearly underperformed. Shares of peers have been driven by M&A speculation (RWE) and a bet on a potential surge in wholesale electricity prices from 2020 onwards (Uniper). We believe innogy's rather slow share price performance in FY 2017 offers an attractive entry point with an appealing catch-up potential.

Indexed ytd-share price performance of German peers



Source: FactSet Prices

Source: FactSet, Warburg Research

Relative valuation

Low risk profile demands a premium

In terms of relative valuation, innogy is currently trading at a 11% premium to peers on FY 2018 EV/EBITDA multiples. However, we believe innogy can demand a premium as it benefits from a future-proof business model without the burden of nuclear liabilities and very limited exposure to fossil fuel. Moreover, its diversified European Grid & Infrastructure division generates stable and highly predictable cash flows which allow for a premium valuation. As can be seen from the table below, our peer group is comprised of various European utilities. Nonetheless, pure grid companies such as National Grid (UK) and Red Electrica (Spain) demand EV/EBITDA valuation multiples of c. 10.0x which we would also deem appropriate for innogy.

Peer group valuation

Company	LC	Price	MC	EV	P / E			EV / Sales			EV / EBITDA			EV / EBIT		
		in LC	in LC m	in LC m	17e	18e	19e	17e	18e	19e	17e	18e	19e	17e	18e	19e
German utilities																
RWE	EUR	18.83	10,841.3	22,412.3	10.2 x	11.5 x	10.7 x	0.5 x	0.5 x	0.5 x	4.0 x	4.2 x	4.0 x	6.4 x	6.9 x	6.7 x
E.ON	EUR	9.26	20,377.8	19,763.3	14.6 x	14.6 x	14.0 x	0.5 x	0.5 x	0.5 x	4.0 x	4.0 x	3.9 x	6.6 x	6.9 x	6.7 x
Uniper	EUR	19.11	6,991.7	9,400.4	9.5 x	12.0 x	10.1x	0.1x	0.1x	0.1x	5.2 x	6.1x	5.5 x	8.3 x	10.5 x	9.0 x
Average					11.4 x	12.7 x	11.6 x	0.4 x	0.4 x	0.4 x	4.4 x	4.8 x	4.5 x	7.1x	8.1x	7.5 x
European utilities																
EDF	EUR	8.62	24,880.3	61,560.6	13.0 x	11.9 x	11.4 x	0.9 x	0.9 x	0.9 x	4.3 x	4.0 x	3.8 x	10.4 x	9.4 x	9.1x
Engie	EUR	13.56	33,022.5	61,269.9	13.6 x	13.4 x	12.7 x	0.9 x	0.9 x	0.9 x	6.0 x	6.1x	6.0 x	10.5 x	10.5 x	10.1x
Enel	EUR	4.89	49,694.7	112,217.4	13.7 x	12.3 x	11.9 x	1.5 x	1.5 x	1.5 x	7.2 x	6.9 x	6.7 x	11.6 x	11.1x	10.6 x
Iberdrola	EUR	6.70	42,352.6	75,698.4	15.4 x	14.3 x	13.2 x	2.4 x	2.2 x	2.1x	9.4 x	8.6 x	8.1x	16.2 x	14.8 x	13.7 x
Endesa	EUR	20.20	21,386.8	26,647.8	16.0 x	15.2 x	14.4 x	1.4 x	1.4 x	1.3 x	7.9 x	7.7 x	7.5 x	14.1x	13.5 x	12.6 x
Fortum	EUR	14.02	12,454.9	12,930.5	20.0 x	18.7 x	18.2 x	3.1x	2.8 x	2.8 x	9.9 x	9.7 x	9.7 x	16.0 x	15.4 x	15.3 x
Red Electrica	EUR	18.52	10,020.8	15,702.0	14.9 x	14.2 x	13.7 x	7.8 x	7.7 x	7.5 x	10.3 x	10.0 x	9.8 x	15.1x	14.8 x	14.5 x
Average					15.2 x	14.3 x	13.7 x	2.6 x	2.5 x	2.4 x	7.9 x	7.6 x	7.4 x	13.4 x	12.8 x	12.3 x
British utilities																
SSE	GBp	1,389.00	13,875.4	22,890.3	11.3 x	11.9 x	11.2 x	0.8 x	0.8 x	0.8 x	9.5 x	9.5 x	9.1x	13.3 x	13.7 x	13.3 x
National Grid	GBp	955.00	32,654.9	51,545.2	13.9 x	15.8 x	15.1x	3.1x	3.2 x	3.2 x	8.3 x	9.8 x	9.6 x	11.4 x	13.8 x	13.9 x
Centrica	GBp	198.40	11,095.3	15,050.8	12.6 x	12.0 x	11.5 x	0.5 x	0.5 x	0.5 x	6.1x	6.1x	6.0 x	10.3 x	10.0 x	9.6 x
Average					12.6 x	13.2 x	12.6 x	1.5 x	1.5 x	1.5 x	8.0 x	8.4 x	8.2 x	11.6 x	12.5 x	12.2 x
Average (all)					13.8 x	13.7 x	12.9 x	1.8 x	1.8 x	1.7 x	7.1x	7.1x	6.9 x	11.6 x	11.6 x	11.2 x
Median (all)					13.7 x	13.4 x	12.7 x	0.9 x	0.9 x	0.9 x	7.2 x	6.9 x	6.7 x	11.4 x	11.1x	10.6 x
Innogy	**EUR**	**36.22**	**20,122.2**	**36,668.8**	**15.1 x**	**13.8 x**	**13.2 x**	**0.9 x**	**0.9 x**	**0.9 x**	**8.3 x**	**8.0 x**	**8.0 x**	**12.4 x**	**12.0 x**	**12.0 x**
Valuation difference to Average (all)					-9%	-1%	-2%	112%	107%	103%	-14%	-11%	-13%	-7%	-3%	-7%
Fair value per share based on Average (all)					33.01	35.95	35.44	110.06	106.97	103.90	26.71	28.88	27.33	31.59	34.40	31.51

Source: Bloomberg, Warburg Research

Absolute valuation

Sum-of-the-parts valuation

We value innogy based on an SotP approach, which we regard as the best valuation method in light of its diversified business activities.

Our DCF-based SotP valuation derives a fair value of EUR 42.0 per share for the group. We assume a different WACC for each of the divisions in order to appropriately reflect their different risk profiles. The average WACC for the group stands at 5.5%. According to our absolute valuation, innogy's grid business represents roughly 65% of the company's total EV. Moreover, innogy's various activities in e-mobility are currently not reflected in our valuation owing to a lack of visibility. We therefore regard those activities rather as an option value.

To arrive at the implied equity value, we deduct net debt of EUR 18,078m, which includes pension provisions as well as provisions for the decommissioning of wind farms.

Our derived EV indicates a fair value EV/EBITDA multiple of 9.0x, which is broadly in line with the valuation of pure play grid companies and many peers such as Iberdrola, Fortum, SSE and Endesa.

DCF-based sum-of-the-parts valuation

in EURm					EV/EBITDA		
Division		**EV weight**	**€ per share**	**WACC**	**2017e**	**2018e**	**2019e**
Grid & Infrastructure	27,423	66%	49.4	4.5%	9.68x	9.73x	9.90x
Retail	10,818	26%	19.5	7.1%	10.15x	9.62x	9.29x
Renewables	7,360	18%	13.2	5.7%	10.82x	9.56x	9.31x
Other	-4,035	-10%	-7.3	5.0%			
EV	**41,567**		74.8		9.38x	9.09x	9.05x
-Financ. Liabilities	17,221		31.0				
-Pension provisions	3,888		7.0				
-Wind-farm decom.	334		0.6				
-Minority interest	1,736		3.1				
+Step-up adjustment	1,034		1.9				
+Liquid assets	4,067		7.3				
Net debt	18,078		32.5				
Equity value	23,489						
NOSH	555.56						
Equity per share (€)	**42.3**						

Source: Warburg Research

Dividend discount model

In addition to our DCF-based SotP valuation, which represents the base of our price target, we also use DDM as a cross-check since innogy's transparent dividend policy and its high dividend payout ratio serve as an ideal valuation case to use the dividend discount model. Our DDM points to a price target of EUR 42.5 and is based on the assumption of a payout ratio of 75% (mid-point of indicated payout range), a dividend growth rate of 2.8% (calculated as retention rate times return on equity of 11%) and cost of equity of 7.0%

Dividend discount valuation

One-stage DDM	
DPS FY1	1.80
Pay-out ratio	75%
Dividend growth rate	2.8%
Fair value DDM (EUR)	42.4

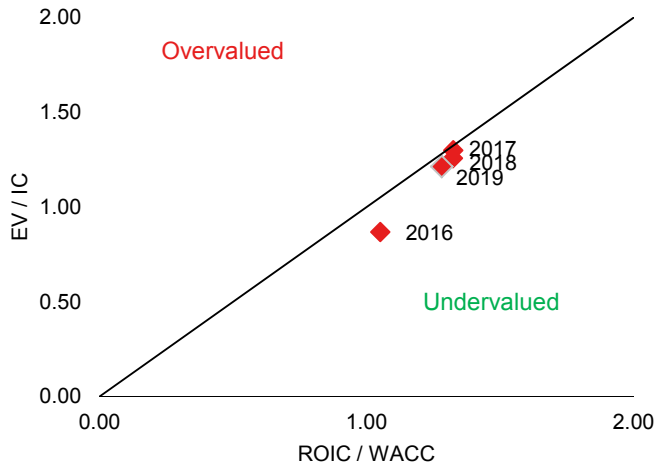
Source: Warburg Research

EV/IC vs ROIC/ WACC

Finally, to determine if innogy is fairly valued, we compared the company's EV/IC ratio with its ROIC/WACC ratio. If the ROIC/WACC ratio is higher than the EV/IC ratio, we can conclude that the company has not yet reached its fair value.

As already shown in the "return on capital" section, Innogy has been a value creator. Not surprisingly, the EV of the company was consistently higher than its invested capital (i.e. EV/IC ratio >1.0). More importantly, however, the company's ROIC/WACC ratio (using a group WACC of 5.5%) is higher than the company's EV/IC ratio, indicating that the shares are still undervalued.

EV/IC vs ROIC/WACC



Source: Warburg Research

Innogy represents the profitable and future-proof assets of RWE

Company

Historical background

Innogy is the result of an internal reorganization process at RWE AG. In 2008, RWE established its subsidiary RWE Innogy GmbH, similar to Innogy plc (today: RWE npower) the British energy company that was acquired in 2002 by RWE.

RWE Innogy GmbH was founded as the renewables division of RWE. In the course of the reorganization of the RWE corporation with the aim of separating the high-profitable and future-proof business, RWE transferred its Renewable, Grid & Infrastructure and Retail business to the newly-founded innogy SE in April 2016, which replaced the former RWE Innogy GmbH. The IPO of innogy took place in October. The placement volume amounted to EUR 5 billion, which was the largest IPO in Germany in 16 years – thus, innogy is actually the most valuable German energy company. Currently, the RWE concern holds 77% of innogy's shares. But, the RWE management is permitted to reduce RWE's share to 51% without any additional approval. innogy assumed debt of RWE and, in return, became the parent company of several energy companies like RWE Npower (UK, Retail), Essent (Netherlands, Retail) or Kelag (Austria, Retail).

Today, the Essen-based innogy has a market leading position all over Europe. In Germany, innogy is the largest electricity DSO (distribution systems operator) and also the largest electricity retailer. In five other European countries, innogy is the no. 1 of all energy companies, measured by the volume sold to consumers or businesses.

With the founding of innogy, its business was divided in the three main segments Grid & Infrastructure (G&I), Retail and Renewables as part of the reorganization of RWE. RWE is to concentrate on the traditional energy sectors (fossil fuel, nuclear energy) while innogy is to be the green power subsidiary involved in all renewable energies as well as in infrastructure and retail. The infrastructure segment, G&I, contributes the largest value to the company's EBITDA (nearly two-thirds); Retail is second (nearly a quarter) and Renewables third. In 2016, innogy generated a turnover of EUR ~40 billion and represents the main part of the RWE's turnover with EUR ~46 billion.

Management

Management Board of innogy SE

Peter Terium, CEO

Peter Terium (age: 53) started his career with an apprenticeship as a licensed auditor at the Nederlands Institut voor Register accountants in Amsterdam. In 1984 he served as tax inspector at the Ministry of Finance and afterwards spent five years as audit supervisor at KPMG in Eindhoven. In the following 12 years, he held many different posts in Schmalbach-Lubeca AG; his last engagement was as Vice President Finance and Accounting. Terium joined the management of RWE in 2003 as Head of Group Controlling. After serving as CEO of several subsidiaries of RWE (e.g. RWE Umwelt AG or RWE Trading AG) he entered the Dutch Essent N.V. as CEO in 2009. As the company was acquired by RWE some months later, he joined the management board of RWE. In 2011, he became Deputy Chairman and shortly thereafter he CEO of the RWE group. After founding innogy SE, Terium became CEO of the subsidiary.

Dr. Bernhard Günther, CFO

Bernhard Günther (age: 50) studied economics in St. Gallen and Oxford. He started his career at McKinsey & Company in Düsseldorf and Cologne and completed his economics doctorate in St. Gallen in 1998. He subsequently held several posts in the controlling department of RWE AG and RWE Power AG. As of 2007, he served as managing director and CFO for many subsidiaries of RWE (e.g. RWE Gas Midstream or RWE Trading). Five years later, he was appointed to RWE's management board and in 2013, became its CFO.

Uwe Tiggers, CHO & Labour Director

Uwe Tiggers (age: 57) started his career with an apprenticeship as a telecommunications technician at Standard Elektrik Lorenz AG. He went on to compete master craftsmanship training in electrical engineering and become a master electrician specialized in communications technology before proceeding to study and graduate in technical management. After holding several positions in information technology at VWE AG and VWE Energie AG, he became full-time works council member of VWE Energie AG in 1994 and, subsequently, of many subsidiaries of RWE (e.g. RWE Plus AG, RWE Vertrieb AG). Between 2004 and 2012 he was chairman of the European works council of RWE AG, between 2010 and 2012 chairman of the central works council. In January 2013, he was appointed CHO and in April 2013 also to Labour Director of RWE AG. Three years later, he joined innogy as CHO and Labour Director.

Hildegard Müller, COO Grid & Infrastructure

Hildegard Müller (age: 50) started at the age of 20 years at Dresdner Bank AG with a bank apprenticeship after which she went on to study Business Administration. In 1995, she returned to Dresdner Bank and went on to serve as department head. She left the bank to serve as a member of the German parliament. In 2005, she became Minister of State in the Federal Chancellery until she joined the interest group "Bundesverband der Energie- und Wasserwirtschaft" as managing director. Eight years later she was appointed COO of innogy.

Martin Herrmann, COO Retail

Martin Herrmann (age: 50) studied economics in Münster. He started his career at Commerzbank AG where he served in several positions in the investment banking and M&A departments. He joined Transgas a.s. as CFO in 2002, becoming CEO in 2007 and chairman of the management board of RWE Transgas a.s. Simultaneously, he became CEO of RWE Česká republika a.s. After serving RWE Retail as CEO since 2015, he was appointed to Retail COO of innogy in April 2016.

Dr. Hans Bünting, COO Renewables

Hans Büntning (age: 52) holds a doctorate in economics from the university of Bochum. In 1998, he started in the controlling department of RWE and served in many different executive roles, before becoming Head of Finance & Risk Control of RWE Trading GmbH. After serving as Head of Risk Management of RWE AG until 2008, he served as CFO of RWE Innogy GmbH until 2012 and as CEO until 2016. In 2016, he switched to the successor firm as COO.

Supervisory Board of innogy

Dr. Werner Brandt, Chairman

Werner Brandt (age: 63) studied Business Administration at university of Erlangen-Nurnberg. He worked at PriceWaterhouse in Stuttgart from 1981 and 1992. In 1991, he completed his doctorate at the TU Darmstadt and served as a member of the management board of Baxter Deutschland GmbH. In the following two years, he served as CFO of Fresenius Medical Care AG. In 2001, he was appointed CFO of the SAP AG where he remained until 2014. Since 2013, he has served as a member of several supervisory boards (Lufthansa, RWE, ProSiebenSat.1) as well as chairman of innogy's supervisory board.

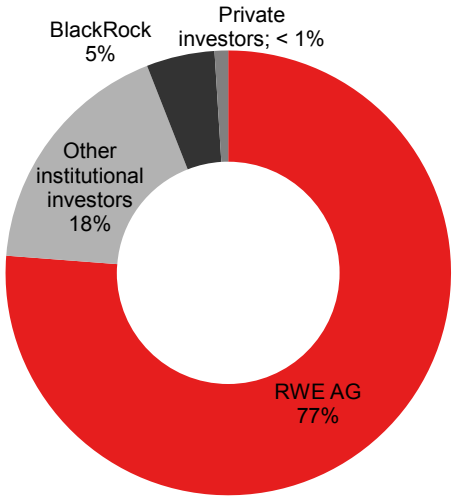
Frank Bsirske, Deputy Chairman

Frank Bsirske (age: 60) studied political science at Freie Universität Berlin. He worked in various roles for the German Public Services Union (ÖTV) between 1989 and 1999, before becoming chairman of the trade union ÖTV in 2000. In 2001, he was appointed Chairman of the trade union ver.di, a position he holds to this day. In addition to his role as deputy chairman of the innogy supervisory board, he has additional supervisory board responsibilities with RWE AG, Deutsche Bank AG, Deutsche Postbank AG and IBM Central Holding GmbH.

Shareholder structure

The chart below illustrates the current shareholder structure of innogy. The majority of shares are still owned by RWE. Nonetheless, a sell-down of the stake to 51% should not be ruled out as RWE seeks to diversify its holdings. Also, it is important to note that RWE will manage its stake in innogy as a financial investment and therefore will not impose strategic and financial targets. Innogy is allowed to pursue operational and financial targets independent of RWE AG.

Shareholder structure (as of December 31, 2016)



Source: innogy, Warburg Research

Valuation

	2013	2014	2015	2016	2017e	2018e	2019e
Price / Book	n.a.	n.a.	n.a.	1.4 x	2.1 x	2.0 x	1.9 x
Book value per share ex intangibles	4056.00	n.a.	8.94	-5.00	-3.68	-2.36	-1.17
EV / Sales	n.a.	n.a.	n.a.	0.7 x	0.9 x	0.9 x	0.9 x
EV / EBITDA	n.a.	n.a.	n.a.	6.8 x	8.6 x	8.3 x	8.2 x
EV / EBIT	n.a.	n.a.	n.a.	11.5 x	12.9 x	12.4 x	12.3 x
EV / EBIT adj.*	n.a.	n.a.	n.a.	10.7 x	12.9 x	12.4 x	12.3 x
P / FCF	n.a.	n.a.	n.a.	14.6 x	28.4 x	21.7 x	14.4 x
P / E	n.a.	n.a.	n.a.	8.1 x	12.8 x	12.0 x	11.8 x
P / E adj.*	n.a.	n.a.	n.a.	11.0 x	15.6 x	14.2 x	13.6 x
Dividend Yield	n.a.	n.a.	n.a.	4.7 %	4.8 %	5.3 %	5.5 %
FCF Potential Yield (on market EV)	n.a.	n.a.	n.a.	13.3 %	9.5 %	9.7 %	9.9 %

*Adjustments made for: -

Consolidated profit & loss

In EUR m	2013	2014	2015	2016	2017e	2018e	2019e
Sales	**48,589.0**	**45,681.0**	**45,568.0**	**43,611.0**	**42,797.4**	**42,777.6**	**42,745.0**
Change Sales yoy	n.a.	-6.0 %	-0.2 %	-4.3 %	-1.9 %	0.0 %	-0.1 %
Increase / decrease in inventory	-2,560.0	-2,175.0	-2,112.0	-2,062.0	-2,011.5	-1,856.6	-1,855.1
Own work capitalised	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Sales	**46,029.0**	**43,506.0**	**43,456.0**	**41,549.0**	**40,786.0**	**40,921.0**	**40,889.9**
Material expenses	37,429.0	35,160.0	34,760.0	32,714.0	34,238.0	34,222.1	34,196.0
Gross profit	**8,600.0**	**8,346.0**	**8,696.0**	**8,835.0**	**6,548.0**	**6,698.9**	**6,693.9**
Gross profit margin	*17.7 %*	*18.3 %*	*19.1 %*	*20.3 %*	*15.3 %*	*15.7 %*	*15.7 %*
Personnel expenses	2,900.0	2,754.0	2,736.0	2,858.0	2,910.2	2,908.9	2,906.7
Other operating income	1,205.0	986.0	1,104.0	1,090.0	1,069.9	1,069.4	1,068.6
Other operating expenses	3,028.0	2,763.0	2,823.0	2,757.0	2,289.9	2,142.3	2,119.3
Unfrequent items	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EBITDA	**3,877.0**	**3,815.0**	**4,241.0**	**4,310.0**	**4,429.3**	**4,573.8**	**4,591.6**
Margin	*8.0 %*	*8.4 %*	*9.3 %*	*9.9 %*	*10.3 %*	*10.7 %*	*10.7 %*
Depreciation of fixed assets	1,469.0	1,226.0	1,240.0	1,523.0	1,480.0	1,508.5	1,539.2
EBITA	**2,408.0**	**2,589.0**	**3,001.0**	**2,787.0**	**2,949.3**	**3,065.3**	**3,052.4**
Amortisation of intangible assets	681.0	213.0	394.0	246.0	0.0	0.0	0.0
Goodwill amortisation	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EBIT	**1,727.0**	**2,376.0**	**2,607.0**	**2,541.0**	**2,949.3**	**3,065.3**	**3,052.4**
Margin	*3.6 %*	*5.2 %*	*5.7 %*	*5.8 %*	*6.9 %*	*7.2 %*	*7.1 %*
EBIT adj.	**2,844.0**	**2,859.0**	**3,050.0**	**2,735.0**	**2,949.3**	**3,065.3**	**3,052.4**
Interest income	406.0	445.0	578.0	1,029.0	0.0	0.0	0.0
Interest expenses	973.0	1,000.0	880.0	1,818.0	575.0	540.0	500.0
Other financial income (loss)	285.0	400.0	493.0	449.0	375.0	378.0	381.0
EBT	**1,445.0**	**2,221.0**	**2,798.0**	**2,201.0**	**2,749.3**	**2,903.3**	**2,933.4**
Margin	*3.0 %*	*4.9 %*	*6.1 %*	*5.0 %*	*6.4 %*	*6.8 %*	*6.9 %*
Total taxes	551.0	523.0	860.0	415.0	824.8	871.0	880.0
Net income from continuing operations	**894.0**	**1,698.0**	**1,938.0**	**1,786.0**	**1,924.5**	**2,032.3**	**2,053.4**
Income from discontinued operations (net of tax)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net income before minorities	**894.0**	**1,698.0**	**1,938.0**	**1,786.0**	**1,924.5**	**2,032.3**	**2,053.4**
Minority interest	0.0	0.0	325.0	273.0	300.0	300.0	300.0
Net income	**894.0**	**1,698.0**	**1,613.0**	**1,513.0**	**1,624.5**	**1,732.3**	**1,753.4**
Margin	*1.8 %*	*3.7 %*	*3.5 %*	*3.5 %*	*3.8 %*	*4.0 %*	*4.1 %*
Number of shares, average	1.0	1.0	500.0	364.5	555.6	555.6	555.6
EPS	**n.a.**	**n.a.**	**3.23**	**4.15**	**2.92**	**3.12**	**3.16**
EPS adj.	n.a.	n.a.	3.23	3.08	2.40	2.63	2.74

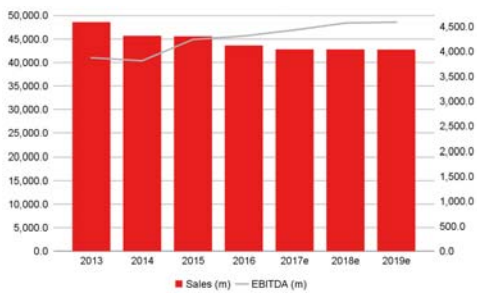
*Adjustments made for:

Guidance: Guidance: Adj. EBITDA of about EUR 4.4bn; adj. net income of > EUR 1.2bn

Financial Ratios

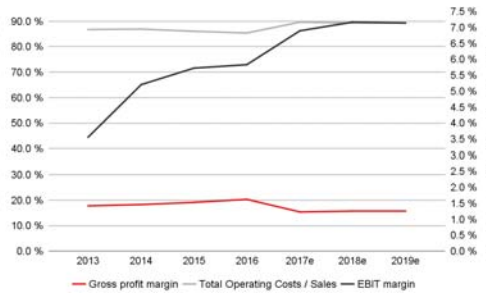
	2013	2014	2015	2016	2017e	2018e	2019e
Total Operating Costs / Sales	86.8 %	86.9 %	86.1 %	85.4 %	89.7 %	89.3 %	89.3 %
Operating Leverage	n.a.	-6.3 x	-39.3 x	0.6 x	-8.6 x	-85.0 x	5.5 x
EBITDA / Interest expenses	4.0 x	3.8 x	4.8 x	2.4 x	7.7 x	8.5 x	9.2 x
Tax rate (EBT)	38.1 %	23.5 %	30.7 %	18.9 %	30.0 %	30.0 %	30.0 %
Dividend Payout Ratio	0.0 %	0.0 %	0.0 %	32.7 %	52.0 %	53.9 %	55.7 %
Sales per Employee	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Sales, EBITDA
in EUR m



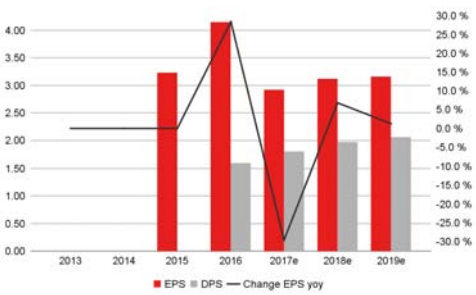
Source: Warburg Research

Operating Performance
in %



Source: Warburg Research

Performance per Share



Source: Warburg Research

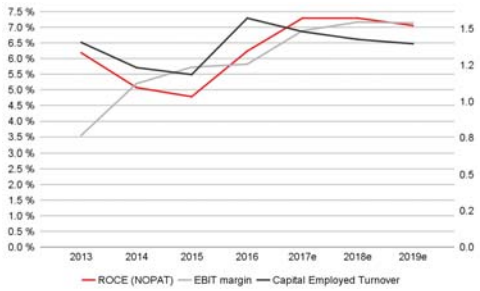
Consolidated balance sheet

In EUR m	2013	2014	2015	2016	2017e	2018e	2019e
Assets							
Goodwill and other intangible assets	11,598.0	11,695.0	12,178.0	11,709.0	11,709.0	11,709.0	11,709.0
thereof other intangible assets	883.0	723.0	735.0	638.0	638.0	638.0	638.0
thereof Goodwill	10,343.0	10,501.0	10,974.0	10,658.0	10,658.0	10,658.0	10,658.0
Property, plant and equipment	16,980.0	17,309.0	18,308.0	17,954.0	18,754.0	19,495.5	20,076.3
Financial assets	2,882.0	2,889.0	2,692.0	2,959.0	2,959.0	2,959.0	2,959.0
Other long-term assets	1,550.0	1,951.0	3,085.0	979.0	979.0	979.0	979.0
Fixed assets	**33,010.0**	**33,844.0**	**36,263.0**	**33,601.0**	**34,401.0**	**35,142.5**	**35,723.3**
Inventories	444.0	491.0	380.0	391.0	389.1	372.0	407.1
Accounts receivable	7,086.0	5,708.0	4,551.0	4,022.0	4,338.4	4,688.0	4,684.4
Liquid assets	2,526.0	2,388.0	2,444.0	4,067.0	3,907.8	3,864.2	4,207.6
Other short-term assets	11,747.0	14,073.0	14,334.0	4,809.0	4,809.0	4,809.0	4,809.0
Current assets	**21,803.0**	**22,660.0**	**21,709.0**	**13,289.0**	**13,444.3**	**13,733.2**	**14,108.1**
Total Assets	**54,813.0**	**56,504.0**	**57,972.0**	**46,890.0**	**47,845.3**	**48,875.7**	**49,831.5**
Liabilities and shareholders' equity							
Subscribed capital	0.0	0.0	0.0	1,111.0	1,111.0	1,111.0	1,111.0
Capital reserve	0.0	0.0	0.0	6,210.0	6,210.0	6,210.0	6,210.0
Retained earnings	16,466.0	17,631.0	17,354.0	2,291.0	3,026.6	3,758.9	4,417.9
Other equity components	-812.0	-694.0	-705.0	-681.0	-681.0	-681.0	-681.0
Shareholders' equity	15,654.0	16,937.0	16,649.0	8,931.0	9,666.6	10,398.9	11,057.9
Minority interest	1,335.0	1,461.0	1,811.0	1,736.0	2,036.0	2,336.0	2,636.0
Total equity	**16,989.0**	**18,398.0**	**18,460.0**	**10,667.0**	**11,702.6**	**12,734.9**	**13,693.9**
Provisions	8,436.0	9,095.0	7,622.0	7,972.0	7,972.0	7,972.0	7,972.0
thereof provisions for pensions and similar obligations	3,582.0	4,595.0	3,461.0	3,888.0	3,888.0	3,888.0	3,888.0
Financial liabilities (total)	16,505.0	16,473.0	18,975.0	17,221.0	17,221.0	17,221.0	17,221.0
thereof short-term financial liabilities	2,872.0	4,687.0	3,684.0	665.0	665.0	665.0	665.0
Accounts payable	5,357.0	4,906.0	4,553.0	4,302.0	4,221.7	4,219.8	4,216.6
Other liabilities	7,526.0	7,632.0	8,362.0	6,728.0	6,728.0	6,728.0	6,728.0
Liabilities	**37,824.0**	**38,106.0**	**39,512.0**	**36,223.0**	**36,142.7**	**36,140.8**	**36,137.6**
Total liabilities and shareholders' equity	**54,813.0**	**56,504.0**	**57,972.0**	**46,890.0**	**47,845.3**	**48,875.7**	**49,831.5**

Financial Ratios

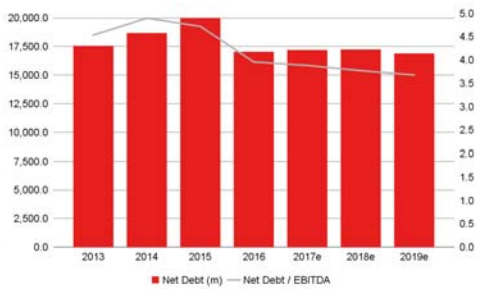
	2013	2014	2015	2016	2017e	2018e	2019e
Efficiency of Capital Employment							
Operating Assets Turnover	2.5 x	2.5 x	2.4 x	2.4 x	2.2 x	2.1 x	2.0 x
Capital Employed Turnover	1.4 x	1.2 x	1.2 x	1.6 x	1.5 x	1.4 x	1.4 x
ROA	2.7 %	5.0 %	4.4 %	4.5 %	4.7 %	4.9 %	4.9 %
Return on Capital							
ROCE (NOPAT)	6.2 %	5.1 %	4.8 %	6.2 %	7.3 %	7.3 %	7.1 %
ROE	11.4 %	10.4 %	9.6 %	11.8 %	17.5 %	17.3 %	16.3 %
Adj. ROE	11.4 %	10.4 %	9.6 %	8.8 %	14.3 %	14.5 %	14.2 %
Balance sheet quality							
Net Debt	17,561.0	18,680.0	19,992.0	17,042.0	17,201.2	17,244.8	16,901.4
Net Financial Debt	13,979.0	14,085.0	16,531.0	13,154.0	13,313.2	13,356.8	13,013.4
Net Gearing	103.4 %	101.5 %	108.3 %	159.8 %	147.0 %	135.4 %	123.4 %
Net Fin. Debt / EBITDA	360.6 %	369.2 %	389.8 %	305.2 %	300.6 %	292.0 %	283.4 %
Book Value / Share	15,654.0	n.a.	33.3	16.1	17.4	18.7	19.9
Book value per share ex intangibles	4,056.0	n.a.	8.9	-5.0	-3.7	-2.4	-1.2

ROCE Development



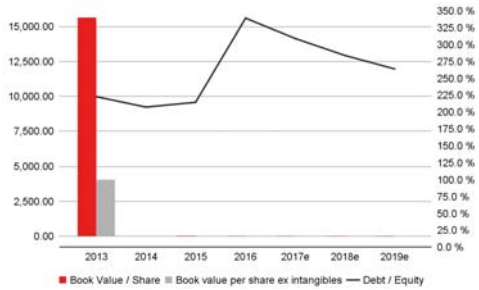
Source: Warburg Research

Net debt
in EUR m



Source: Warburg Research

Book Value per Share
in EUR



Source: Warburg Research

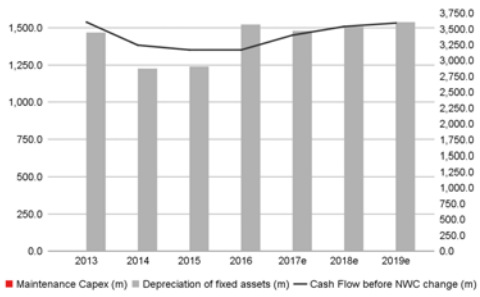
Consolidated cash flow statement

In EUR m	2013	2014	2015	2016	2017e	2018e	2019e
Net income	894.0	1,698.0	1,938.0	1,786.0	1,924.5	2,032.3	2,053.4
Depreciation of fixed assets	1,469.0	1,226.0	1,240.0	1,523.0	1,480.0	1,508.5	1,539.2
Amortisation of goodwill	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amortisation of intangible assets	681.0	213.0	394.0	246.0	0.0	0.0	0.0
Increase/decrease in long-term provisions	405.0	-133.0	-234.0	0.0	0.0	0.0	0.0
Other non-cash income and expenses	160.0	238.0	-170.0	-384.0	0.0	0.0	0.0
Cash Flow before NWC change	**3,609.0**	**3,242.0**	**3,168.0**	**3,171.0**	**3,404.5**	**3,540.8**	**3,592.6**
Increase / decrease in inventory	0.0	0.0	0.0	0.0	1.9	17.1	-35.1
Increase / decrease in accounts receivable	0.0	0.0	0.0	0.0	-316.4	-349.6	3.6
Increase / decrease in accounts payable	0.0	0.0	0.0	0.0	-80.3	-1.9	-3.2
Increase / decrease in other working capital positions	49.0	-277.0	-413.0	-493.0	0.0	0.0	0.0
Increase / decrease in working capital (total)	49.0	-277.0	-413.0	-493.0	-394.8	-334.4	-34.7
Net cash provided by operating activities [1]	**3,658.0**	**2,965.0**	**2,755.0**	**2,678.0**	**3,009.7**	**3,206.4**	**3,557.9**
Investments in intangible assets	0.0	0.0	-0.3	-0.2	0.0	0.0	0.0
Investments in property, plant and equipment	-2,297.0	-2,059.0	-2,024.7	-1,832.8	-2,280.0	-2,250.0	-2,120.0
Payments for acquisitions	0.0	0.0	-331.0	0.0	0.0	0.0	0.0
Financial investments	177.0	82.0	99.0	216.0	0.0	0.0	0.0
Income from asset disposals	-80.0	-1,544.0	332.0	7.3	0.0	0.0	0.0
Net cash provided by investing activities [2]	**-2,554.0**	**-3,685.0**	**-2,123.0**	**-2,041.7**	**-2,280.0**	**-2,250.0**	**-2,120.0**
Change in financial liabilities	-952.0	-639.0	-0.4	1,136.0	0.0	0.0	0.0
Dividends paid	-1,357.0	-486.0	-1.0	-979.0	-888.9	-1,000.0	-1,094.4
Purchase of own shares	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Capital measures	1,305.0	1,474.0	-0.2	-7,199.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net cash provided by financing activities [3]	**-1,004.0**	**349.0**	**-1.6**	**-7,042.0**	**-888.9**	**-1,000.0**	**-1,094.4**
Change in liquid funds [1]+[2]+[3]	**100.0**	**-371.0**	**630.4**	**-6,405.7**	**-159.2**	**-43.6**	**343.5**
Effects of exchange-rate changes on cash	-3.0	10.0	0.0	0.0	0.0	0.0	0.0
Cash and cash equivalent at end of period	824.0	463.0	630.9	-5,855.8	1,219.8	1,176.2	1,519.6

Financial Ratios

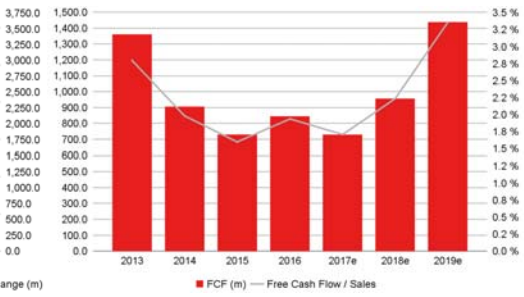
	2013	2014	2015	2016	2017e	2018e	2019e
Cash Flow							
FCF	1,361.0	906.0	730.0	845.0	729.7	956.4	1,437.9
Free Cash Flow / Sales	2.8 %	2.0 %	1.6 %	1.9 %	1.7 %	2.2 %	3.4 %
Free Cash Flow Potential	3,326.0	3,292.0	3,381.0	3,895.0	3,604.5	3,702.8	3,711.6
Free Cash Flow / Net Profit	152.2 %	53.4 %	45.3 %	55.8 %	44.9 %	55.2 %	82.0 %
Interest Received / Avg. Cash	32.1 %	18.1 %	23.9 %	31.6 %	0.0 %	0.0 %	0.0 %
Interest Paid / Avg. Debt	11.8 %	6.1 %	5.0 %	10.0 %	3.3 %	3.1 %	2.9 %
Management of Funds							
Investment ratio	4.7 %	4.5 %	4.4 %	4.2 %	5.3 %	5.3 %	5.0 %
Maint. Capex / Sales	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Capex / Dep	106.8 %	143.1 %	123.9 %	103.6 %	154.1 %	149.2 %	137.7 %
Avg. Working Capital / Sales	2.2 %	3.8 %	1.8 %	0.6 %	0.7 %	1.6 %	2.0 %
Trade Debtors / Trade Creditors	132.3 %	116.3 %	100.0 %	93.5 %	102.8 %	111.1 %	111.1 %
Inventory Turnover	84.3 x	71.6 x	91.5 x	83.7 x	88.0 x	92.0 x	84.0 x
Receivables collection period (days)	53	46	36	34	37	40	40
Payables payment period (days)	52	51	48	48	45	45	45
Cash conversion cycle (Days)	-47	-45	-43	-43	-40	-41	-40

CAPEX and Cash Flow
in EUR m



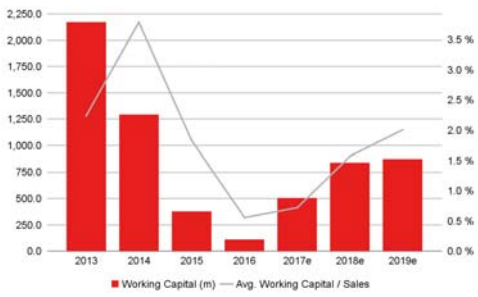
Source: Warburg Research

Free Cash Flow Generation



Source: Warburg Research

Working Capital



Source: Warburg Research

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Company	Disclosure	Link to the historical price targets and rating changes (last 12 months)
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-B-	**Buy:**	The price of the analysed financial instrument is expected to rise over the next 12 months.
-H-	**Hold:**	The price of the analysed financial instrument is expected to remain mostly flat over the next 12 months.
-S-	**Sell:**	The price of the analysed financial instrument is expected to fall over the next 12 months.
"-"	**Rating suspended:**	The available information currently does not permit an evaluation of the company.

WARBURG RESEARCH GMBH – ANALYSED RESEARCH UNIVERSE BY RATING

Rating	Number of stocks	% of Universe
Buy	106	52
Hold	91	45
Sell	6	3
Rating suspended	1	0
Total	**204**	**100**

WARBURG RESEARCH GMBH – ANALYSED RESEARCH UNIVERSE BY RATING ...

... taking into account only those companies which were provided with major investment services in the last twelve months.

Rating	Number of stocks	% of Universe
Buy	28	70
Hold	10	25
Sell	1	3
Rating suspended	1	3
Total	**40**	**100**

PRICE AND RATING HISTORY INNOGY AS OF 16.08.2017

Markings in the chart show rating changes by Warburg Research GmbH in the last 12 months. Every marking details the date and closing price on the day of the rating change.

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