

SFC Energy AG

Germany / Energy
 Primary exchange: Frankfurt
 Bloomberg: F3C GR
 ISIN: DE0007568578

Preliminary
 2019 figures

RATING
PRICE TARGET **REDUCE**
€ 11.40
 Return Potential -6.6%
 Risk Rating High

HYDROGEN FUEL CELL BUSINESS WILL DRIVE GROWTH

SFC Energy reported preliminary 2019 figures which were in line with guidance. Sales amounted to €58.5m, underlying EBITDA was €3.6m, and underlying EBIT €0.3m. For 2020, SFC is guiding towards sales of €64m - €71m, and underlying EBIT of €0.1m- €3.1m. The main growth drivers are the new hydrogen applications and the international defence business. We stick to our 2020 forecasts, which are within the guidance range. An updated DCF model yields a new price target of €11.40 (previously: €10.00) Following the 32% share price increase since mid November, we downgrade the stock from Add to Reduce.

Guidance in line with our forecasts For 2020, SFC is guiding towards sales of €64m - €71m, underlying EBITDA of €3.6 - €6.6m, and underlying EBIT of €0.1m - €3.1m. The lower end of the range does not include new orders from the German defence business. Management confirmed its medium-term planning for sales of over €100m and an underlying EBITDA margin clearly above 10% in the next three to four years. When calculating sales revenue and earnings of the Canadian subsidiary Simark, SFC assumes an exchange rate of 1.50 between the euro and the Canadian dollar.

Revised 2019 guidance met SFC reported 2019 sales of €58.5m (FBe: €58.0m, 2018: €61.7m), which was slightly above the lower end of the revised guidance (€58m - €62m). Underlying EBITDA amounted to €3.6m (FBe: €2.0m, 2018: €3.7m). Underlying EBIT remained positive at €0.3m (FBe: €1.35m, 2018: €2.6m).

Oil & gas was hit by lack of pipeline capacity Oil & gas sales were down 16% at ca. €22m, as the lack of pipeline capacity in Canada resulted in subdued investment. Despite the lower revenues, the segment gross margin increased from 28.0% to 29.2% due to an improved product mix (more high-margin fuel cells sold).

(p.t.o.)

FINANCIAL HISTORY & PROJECTIONS

	2016	2017	2018	2019E	2020E	2021E
Revenue (€m)	44.04	54.29	61.70	58.54	69.90	81.20
Y-o-y growth	-6.9%	23.3%	13.7%	-5.1%	19.4%	16.2%
EBIT (€m)	-4.90	-0.88	1.33	-1.29	1.37	3.26
EBIT margin	-11.1%	-1.6%	2.1%	-2.2%	2.0%	4.0%
Net income (€m)	-4.99	-2.07	0.00	-1.84	0.70	2.33
EPS (diluted) (€)	-0.58	-0.23	0.00	-0.16	0.05	0.18
DPS (€)	0.00	0.00	0.00	0.00	0.00	0.00
FCF (€m)	-6.15	0.36	-0.37	0.12	-2.36	0.13
Net gearing	53.5%	37.7%	13.5%	-37.8%	-31.9%	-29.9%
Liquid assets (€m)	2.04	4.69	7.81	30.96	26.86	30.68

RISKS

The main risks are internationalisation, unfavourable exchange rate changes, technological innovations, and increasing competition.

COMPANY PROFILE

SFC Energy AG is a leading provider of integrated power solutions for mobile and stationary off-grid applications. The company is a pioneer in developing and commercialising fuel cells which provide reliable, efficient, and clean power for its energy solutions. Main markets are oil & gas, defence & security, industry, and clean energy & mobility. SFC is headquartered near Munich in Germany.

MARKET DATA

As of 12 Feb 2020

Closing Price	€ 12.20
Shares outstanding	13.15m
Market Capitalisation	€ 160.48m
52-week Range	€ 8.82 / 13.91
Avg. Volume (12 Months)	39,012

Multiples	2018	2019E	2020E
P/E	n.a.	n.a.	229.4
EV/Sales	2.6	2.8	2.3
EV/EBIT	123.2	n.a.	119.3
Div. Yield	0.0%	0.0%	0.0%

STOCK OVERVIEW



COMPANY DATA

As of 30 Sep 2019

Liquid Assets	€ 23.04m
Current Assets	€ 47.01m
Intangible Assets	€ 13.19m
Total Assets	€ 71.38m
Current Liabilities	€ 18.79m
Shareholders' Equity	€ 39.29m

SHAREHOLDERS

HPE	16.0%
Havensight	5.9%
Conduit Ventures	3.7%
Management	1.8%
Free Float	72.6%

**Figure 1: Reported group figures**

All figures in €m	2019P	2018	Delta
Sales	58.54	61.70	-5.1%
EBITDA	2.03	2.48	-18.1%
margin	3.5%	4.0%	
Adjusted EBITDA	3.63	3.71	-2.0%
margin	6.2%	6.0%	
EBIT	-1.29	1.33	-
margin	-2.2%	2.1%	
Adjusted EBIT	0.31	2.55	-87.9%
margin	0.5%	4.1%	

Source: First Berlin Equity Research, SFC Energy AG

Defence & Security suffered from postponed German defence order Segment sales fell 24% y/y to ca. €5.6m. In 2018, the segment benefited from a high-volume order from the German army. A follow-up order in 2019 did not materialise. Nevertheless, SFC managed to internationalise the business with foreign sales increasing almost 85% y/y to €3.9m. The foreign sales share was 70.5%. The segment gross margin declined from 50.9% to 44.7%.

Clean Energy & Mobility with strong growth Segment sales were up 26% y/y at €11.8m. The gross margin increased from 39% to 43%. The consumer sub-segment turned around and grew 6%, and the industrial sub-segment even grew 36%, driven by high demand from the wind energy and security technology markets.

Industry segment grew 6% y/y Segment sales rose from €16.3m to ca. €17.2m. The gross margin was slightly down at 30.4% (2018: 30.7%).

Small takeover SFC Energy has signed a takeover agreement for the online-portal (ca. 700 subscribers) and customer base of udomi GmbH, a long-time sales partner of SFC. This gives SFC direct access to Germany's private and public security markets. The agreement is an important element in SFC's digitisation strategy with innovative services, modern IoT solutions, and digital control & monitoring systems. SFC is planning further additions to its digital services, e.g. a pay-per-use-model for SFC services around the EFOY fuel cell, and the EFOY Cloud.

udomi is a German reseller and system integrator for alternative off-grid, back-up, and hybrid power supply solutions with EFOY fuel cells, solar and wind technologies. In 2018, the company's net result was €250k. udomi's customers are mainly authorities and organisations with security responsibilities, OEMs and operators of off-grid equipment in renewable energies and traffic engineering. udomi's web portal enables 24/7 monitoring and remote-control of EFOY fuel cells via internet and web browser, plus central data acquisition and evaluation options.

We welcome the takeover for two reasons: SFC will gain a significant number of new customers and the acquisition will also accelerate the digitisation of SFC's processes & services.

SFC clear market leader in Direct Methanol Fuel Cells (DMFC) SFC is now the sole volume supplier of DMFC (see "The Fuel Cell Industry Review 2019"). DMFC market volume in 2019 is expected to show a similar unit number as in 2018 – around 3,700, aggregating to less than 1 MW in capacity.



Ballard Power will deliver stacks for SFC's Jupiter hydrogen fuel cell The equipment sales agreement between SFC, its partner adKor, and Ballard will provide an initial 500 fuel cell stacks for the Jupiter backup power systems for deployment at radio tower sites in Germany through the end of 2021. In Ballard, SFC and adKor have a leading global stack producer as supplier.

A very good start in the hydrogen fuel cell market SFC and its partner adKor have made a very good start in the hydrogen fuel cell business winning tenders for emergency backup power equipment consisting of hydrogen fuel cells at over 400 radio tower sites in different German states. The framework contract, which was signed in 2019, has an expected total order volume of ca. €1.8m to €5.3m and will run until 2021. SFC Energy delivers the hydrogen fuel cell modules to adKor as a subcontractor. The first nationwide programme demonstrates the increasing importance of hydrogen fuel cells as a valid and reliable alternative to conventional diesel generators to provide power for critical infrastructure. German regulations require radio tower sites to have a minimum of 72 hours of backup power to ensure radio communications for critical users in the event of a power blackout. There are plans to equip up to 1,500 radio tower sites all across Germany. Having won the first tenders, SFC/adKor are in pole position to further penetrate the German backup power market.

Hydrogen fuel cells are a perfect complement to SFC's direct methanol fuel cell technology. The maximum capacity of SFC's direct methanol fuel cell technology is ca. 0.5 kW, whereas adKor's hydrogen fuel cell capacity starts at 0.5 kW and offers maximum power of up to 50 kW. In the midterm, SFC plans to extend its power range to up to 100 kW. Hydrogen-based fuel cell technology will open up new markets for SFC and significantly enlarges the company's growth opportunity. Potential new markets are critical infrastructure, telecommunications, back-up power, and, in the long run, e-mobility and smart grids.

Well-financed for further growth Following the successful €27m capital increase in 2019, SFC had a cash position of €23m and a net cash position of €8m at the end of September 2019.

Exercise of option rights strengthens equity and cash position In January, Harbert European Growth Capital Fund exercised its option right on 204,700 SFC shares at a price of €3.6639 with SFC receiving gross proceeds of ca. €0.75m. The number of shares thus increases to 13,154,312.

Forecast for 2020 maintained We stick to our 2020E group forecast of €69.9m in sales and a gross profit of €24.1m (see figure 2 overleaf). We expect a strong turnaround in the oil & gas business. Pipeline capacity issues are beginning to be resolved and demand for Simark's products is rising as the resurgent order backlog in Q1 shows. The expansion into the US offers additional growth perspectives. We expect segment sales growth of 15% (see figure 2 overleaf). After the large German army contract did not materialise in 2019, SFC restructured management & distribution processes. We are thus optimistic that SFC will win the contract this year. We also expect SFC to further internationalise its defence business. We thus forecast that sales in the Defence & Security segment will grow 38% this year (see figure 2 overleaf). The Clean Energy & Mobility segment looks set to continue on its growth path (FBe: segment sales: +29% y/y), particularly driven by shipment of the new hydrogen fuel cells. We expect the Industry segment to grow by 10% due to increased demand for the modular product platform for the laser industry. However, the corona virus will have a temporary impact on the supply chain.



Figure 2: 2019 preliminary sales & gross profit and 2020 forecast (segments & group)

All figures in €m	2019P	2020E	delta
Oil & Gas			
Sales	21.96	25.20	15%
Gross profit	6.41	7.31	14%
<i>margin</i>	29.2%	29.0%	-
Defence & Security			
Sales	7.59	10.50	38%
Gross profit	3.40	4.83	42%
<i>margin</i>	44.7%	46.0%	-
Clean Energy & Mobility			
Sales	11.75	15.20	29%
Gross profit	5.06	6.30	25%
<i>margin</i>	43.0%	41.5%	-
Industry			
Sales	17.24	19.00	10%
Gross profit	5.25	5.70	9%
<i>margin</i>	30.4%	30.0%	-
Group			
Sales	58.54	69.90	19%
Gross profit	20.11	24.14	20%
<i>margin</i>	34.4%	34.5%	-

Source: First Berlin Equity Research, SFC Energy AG

WACC lowered The continuation of the very low interest rate environment (10y German government bond yield: -0.4%, 10y US government bond yield: 1.6%), and expansionary Fed and ECB monetary policies have caused us to lower our WACC from 8.9% to 8.5%.

Price target increased, but downgrade to Reduce An updated DCF model yields a new price target of €11.40 (previously: €10.00). Following the 32% share price increase since mid November, we downgrade the stock from Add to Reduce.



VALUATION MODEL

DCF valuation model								
All figures in EUR '000								
	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E
Net sales	58,537	69,900	81,200	93,810	107,711	122,399	137,643	153,159
NOPLAT	-1,287	1,194	2,633	4,880	6,608	7,851	9,080	10,308
+ depreciation & amortisation	3,318	3,431	3,514	3,131	2,847	2,699	2,647	2,663
Net operating cash flow	2,031	4,624	6,147	8,011	9,455	10,550	11,728	12,971
- total investments (CAPEX and WC)	-2,118	-6,988	-6,017	-4,875	-5,279	-5,662	-5,983	-6,224
Capital expenditures	-2,576	-2,377	-1,868	-2,064	-2,282	-2,492	-2,690	-2,868
Working capital	458	-4,611	-4,149	-2,811	-2,997	-3,170	-3,293	-3,356
Free cash flows (FCF)	-87	-2,363	130	3,136	4,176	4,887	5,744	6,747
PV of FCF's	-87	-2,199	112	2,478	3,042	3,280	3,553	3,847

All figures in thousands	
PV of FCFs in explicit period (2019E-2033E)	46,990
PV of FCFs in terminal period	93,887
Enterprise value (EV)	140,877
+ Net cash / - net debt (pro forma)	8,563
+ Investments / minority interests	0
Shareholder value	149,440
Diluted number of shares	13,154
Fair value per share in EUR	11.36

WACC		Terminal growth rate							
		1.5%	2.0%	2.5%	3.0%	3.5%	4.0%	4.5%	
Cost of equity	10.0%	4.5%	28.53	32.79	39.18	49.83	71.11	134.80	35225.42
Pre-tax cost of debt	7.0%	5.5%	20.27	22.23	24.84	28.49	33.97	43.09	61.32
Tax rate	30.0%	6.5%	15.41	16.45	17.76	19.44	21.67	24.80	29.50
After-tax cost of debt	4.9%	7.5%	12.23	12.84	13.58	14.47	15.59	17.03	18.95
Share of equity capital	70.0%	8.5%	10.01	10.39	10.84	11.36	11.99	12.76	13.72
Share of debt capital	30.0%	9.5%	8.39	8.64	8.92	9.24	9.63	10.08	10.62
		10.5%	7.16	7.32	7.51	7.72	7.97	8.25	8.57
		11.5%	6.20	6.31	6.44	6.58	6.74	6.93	7.14
Price target in EUR	11.40								

* for layout purposes the model shows numbers only to 2026, but runs until 2033



INCOME STATEMENT

All figures in EUR '000	2016A	2017A	2018A	2019E	2020E	2021E
Revenues	44,041	54,292	61,704	58,537	69,900	81,200
Cost of goods sold	30,795	36,566	40,623	38,424	45,761	53,668
Gross profit	13,247	17,726	21,082	20,113	24,139	27,532
S&M	9,126	9,786	10,792	12,275	12,200	13,000
G&A	4,883	5,016	5,230	5,900	5,700	6,400
R&D	4,148	3,892	3,525	3,400	4,870	4,872
Other operating income	96	277	320	234	210	244
Other operating expenses	83	194	529	59	210	244
Operating income (EBIT)	-4,898	-885	1,325	-1,287	1,369	3,260
Net financial result	-475	-1,150	-737	-762	-494	-303
Non-operating expenses	0	0	0	0	0	0
Pre-tax income (EBT)	-5,373	-2,035	588	-2,048	875	2,956
Income taxes	-380	37	589	-205	175	627
Minority interests	0	0	0	0	0	0
Net income / loss	-4,993	-2,072	-1	-1,843	700	2,330
Diluted EPS (in €)	-0.58	-0.23	0.00	-0.16	0.05	0.18
EBITDA	-2,508	862	2,478	2,031	4,799	6,774
One-off costs / earnings	-150	592	1,227	1,600	0	0
Underlying EBITDA	-2,658	1,454	3,705	3,631	4,799	6,774
Underlying EBIT	-4,112	177	2,553	313	1,369	3,260
Ratios						
Gross margin	30.1%	32.6%	34.2%	34.4%	34.5%	33.9%
EBITDA margin on revenues	-5.7%	1.6%	4.0%	3.5%	6.9%	8.3%
EBIT margin on revenues	-11.1%	-1.6%	2.1%	-2.2%	2.0%	4.0%
Net margin on revenues	-11.3%	-3.8%	0.0%	-3.1%	1.0%	2.9%
Tax rate	7.1%	-1.8%	100.1%	10.0%	20.0%	21.2%
Expenses as % of revenues						
S&M	20.7%	18.0%	17.5%	21.0%	17.5%	16.0%
G&A	11.1%	9.2%	8.5%	10.1%	8.2%	7.9%
R&D	9.4%	7.2%	5.7%	5.8%	7.0%	6.0%
Other operating expenses	0.2%	0.4%	0.9%	0.1%	0.3%	0.3%
Y-Y Growth						
Revenues	-6.9%	23.3%	13.7%	-5.1%	19.4%	16.2%
Operating income	n.m.	n.m.	n.m.	n.m.	n.m.	138.2%
Net income/ loss	n.m.	n.m.	n.m.	n.m.	n.m.	232.9%



BALANCE SHEET

All figures in EUR '000	2016A	2017A	2018A	2019E	2020E	2021E
Assets						
Current assets, total	20,056	21,849	28,289	50,107	49,201	57,068
Cash and cash equivalents	2,041	4,694	7,805	30,964	26,857	30,684
Short-term investments	0	0	0	0	0	0
Receivables	9,253	8,712	10,158	9,623	11,490	13,348
Inventories	7,718	7,939	9,753	8,948	10,281	12,057
Other current assets	1,044	504	573	573	573	980
Non-current assets, total	13,737	12,684	13,776	22,555	21,501	19,855
Property, plant & equipment	1,205	1,197	1,596	9,065	7,749	6,624
Goodwill & other intangibles	11,855	10,950	11,497	12,807	13,069	12,548
Other assets	678	537	684	684	684	684
Total assets	33,793	34,534	42,065	72,663	70,702	76,923
Shareholders' equity & debt						
Current liabilities, total	13,335	18,563	18,865	14,785	11,374	16,166
Short-term debt	4,317	9,410	7,198	4,000	2,000	6,900
Accounts payable	5,790	5,520	7,093	6,211	6,896	8,087
Current provisions	646	800	972	972	972	972
Other current liabilities	2,583	2,833	3,602	3,602	1,507	207
Long-term liabilities, total	7,119	2,076	4,996	14,517	14,517	13,617
Long-term debt	4,860	529	3,056	3,056	3,056	2,156
Liabilities under finance leases	0	0	0	7,517	7,517	7,517
Other liabilities	2,259	1,547	1,940	3,944	3,944	3,944
Minority interests	0	0	0	0	0	0
Shareholders' equity	13,339	13,895	18,204	43,361	44,811	47,140
Share capital	9,047	9,659	10,250	12,950	13,154	13,154
Capital reserve	73,132	75,475	79,498	103,798	104,343	104,343
Other reserves	0	0	0	0	0	0
Treasury stock	0	0	0	0	0	0
Loss carryforward / retained earnings	-68,351	-70,423	-70,520	-72,364	-71,664	-69,334
Total consolidated equity and debt	33,793	34,534	42,065	72,663	70,702	76,923
Ratios						
Current ratio (x)	1.50	1.18	1.50	3.39	4.33	3.53
Quick ratio (x)	0.93	0.75	0.98	2.78	3.42	2.78
Net cash	-7,135	-5,245	-2,449	16,391	14,284	14,110
Net gearing	53.5%	37.7%	13.5%	-37.8%	-31.9%	-29.9%
Book value per share (€)	1.54	1.51	1.79	3.67	3.41	3.58
Equity ratio	39.5%	40.2%	43.3%	59.7%	63.4%	61.3%
Return on equity (ROE)	-37.4%	-14.9%	0.0%	-4.3%	1.6%	4.9%
Return on investment (ROI)	-14.8%	-6.0%	0.0%	-2.5%	1.0%	3.0%
Return on assets (ROA)	-12.7%	-2.6%	1.8%	-1.5%	1.7%	3.4%
Return on capital employed (ROCE)	-22.3%	-4.1%	6.1%	-4.8%	4.2%	9.1%
Days of sales outstanding (DSO)	76.7	58.6	60.1	60.0	60.0	60.0
Days of inventory turnover	91.5	79.3	87.6	85.0	82.0	82.0
Days in payables (DIP)	68.6	55.1	63.7	59.0	55.0	55.0



CASH FLOW STATEMENT

All figures in EUR '000	2016A	2017A	2018A	2019E	2020E	2021E
EBIT	-4,898	-885	1,325	-1,287	1,369	3,260
Depreciation and amortisation	2,390	1,747	1,153	3,318	3,431	3,514
EBITDA	-2,508	862	2,478	2,031	4,799	6,774
Changes in working capital	-3,541	1,362	-1,417	458	-4,611	-4,149
Other adjustments	818	-519	945	205	-175	-627
Operating cash flow	-5,231	1,704	2,005	2,694	14	1,998
CAPEX	-301	-497	-928	-820	-769	-812
Investments in intangibles	-619	-844	-1,445	-1,756	-1,608	-1,056
Free cash flow	-6,151	363	-368	118	-2,363	130
Acquisitions & disposals, net	205	33	0	0	0	0
Other investments	150	0	0	0	0	0
Investing cash flow	-565	-1,308	-2,373	-2,576	-2,377	-1,868
Debt financing, net	2,834	2,252	-1,786	-3,198	-2,000	4,000
Equity financing, net	1,500	400	4,220	27,000	750	0
Dividend paid	0	0	0	0	0	0
Other financing	-60	-394	1,045	-762	-494	-303
Financing cash flow	4,274	2,258	3,479	23,041	-1,744	3,697
Forex & other effects	1	-2	0	0	0	0
Net cash flows	-1,521	2,653	3,111	23,159	-4,107	3,827
Cash, start of the year	3,277	1,756	4,409	7,805	30,964	26,857
Cash, end of the year	1,756	4,409	7,520	30,964	26,857	30,684
EBITDA/share (in €)	-0.29	0.09	0.24	0.17	0.36	0.51

Y-Y Growth

Operating cash flow	n.m.	n.m.	17.7%	34.3%	-99.5%	14690.4%
Free cash flow	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.
EBITDA/share	n.m.	n.m.	160.5%	-29.5%	112.0%	41.1%

FIRST BERLIN RECOMMENDATION & PRICE TARGET HISTORY

Report No.:	Date of publication	Previous day closing price	Recommendation	Price target
Initial Report	23 June 2014	€4.84	Buy	€7.40
2...37	↓	↓	↓	↓
38	16 July 2019	€12.50	Add	€12.60
39	29 August 2019	€10.10	Add	€11.90
40	18 November 2019	€9.22	Add	€10.00
41	Today	€12.20	Reduce	€11.40

Authored by: Dr. Karsten von Blumenthal, Analyst

Company responsible for preparation:

First Berlin Equity Research GmbH

Mohrenstraße 34
10117 Berlin

Tel. +49 (0)30 - 80 93 96 85 Fax +49 (0)30 - 80 93 96 87

info@firstberlin.com

www.firstberlin.com

Person responsible for forwarding or distributing this financial analysis: Martin Bailey

Copyright© 2020 First Berlin Equity Research GmbH No part of this financial analysis may be copied, photocopied, duplicated or distributed in any form or media whatsoever without prior written permission from First Berlin Equity Research GmbH. First Berlin Equity Research GmbH shall be identified as the source in the case of quotations. Further information is available on request.

INFORMATION PURSUANT TO SECTION 34B OF THE GERMAN SECURITIES TRADING ACT [WPHG], TO REGULATION (EU) NO 596/2014 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL OF APRIL 16, 2014, ON MARKET ABUSE (MARKET ABUSE REGULATION) AND TO THE GERMAN ORDINANCE ON THE ANALYSIS OF FINANCIAL INSTRUMENTS [FINANV]

First Berlin Equity Research GmbH (hereinafter referred to as: "First Berlin") prepares financial analyses while taking the relevant regulatory provisions, in particular the German Securities Trading Act [WpHG], Regulation (EU) No 596/2014 of the European Parliament and of the Council of April 16, 2014, on market abuse (market abuse regulation) and the German Ordinance on the Analysis of Financial Instruments [FinAnV] into consideration. In the following First Berlin provides investors with information about the statutory provisions that are to be observed in the preparation of financial analyses.

CONFLICTS OF INTEREST

In accordance with Section 34b Paragraph 1 of the German Securities Trading Act [WpHG] and Regulation (EU) No 596/2014 of the European Parliament and of the Council of April 16, 2014, on market abuse (market abuse regulation) financial analyses may only be passed on or publicly distributed if circumstances or relations which may cause conflicts of interest among the authors, the legal entities responsible for such preparation or companies associated with them are disclosed along with the financial analysis.

First Berlin offers a range of services that go beyond the preparation of financial analyses. Although First Berlin strives to avoid conflicts of interest wherever possible, First Berlin may maintain the following relations with the analysed company, which in particular may constitute a potential conflict of interest (further information and data may be provided on request):

- The author, First Berlin, or a company associated with First Berlin holds an interest of more than five percent in the share capital of the analysed company;
- The author, First Berlin, or a company associated with First Berlin provided investment banking or consulting services for the analysed company within the past twelve months for which remuneration was or was to be paid;
- The author, First Berlin, or a company associated with First Berlin reached an agreement with the analysed company for preparation of a financial analysis for which remuneration is owed;
- The author, First Berlin, or a company associated with First Berlin has other significant financial interests in the analysed company;

First Berlin F.S.B. Investment-Beratungsgesellschaft mbH (hereafter FBIB), a company of the First Berlin Group, holds a stake of under 0.1% of the shares in the company which has been covered in this analysis. The analyst is not subject to any restrictions with regard to his recommendation and is therefore independent, so that we believe there is no conflict of interest.

In order to avoid and, if necessary, manage possible conflicts of interest both the author of the financial analysis and First Berlin shall be obliged to neither hold nor in any way trade the securities of the company analyzed. The remuneration of the author of the financial analysis stands in no direct or indirect connection with the recommendations or opinions represented in the financial analysis. Furthermore, the remuneration of the author of the financial analysis is neither coupled directly to financial transactions nor to stock exchange trading volume or asset management fees.

If despite these measures one or more of the aforementioned conflicts of interest cannot be avoided on the part of the author or First Berlin, then reference shall be made to such conflict of interest.

INFORMATION PURSUANT TO SECTION 64 OF THE GERMAN SECURITIES TRADING ACT [WPHG] (2ND FIMANOG) OF 23 JUNE 2017, DIRECTIVE 2014/65/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL OF 15 MAY 2014 ON MARKETS IN FINANCIAL INSTRUMENTS AND AMENDING DIRECTIVE 2002/92/EC AND DIRECTIVE 2011/61/EU, ACCOMPANIED BY THE MARKETS IN FINANCIAL INSTRUMENTS REGULATION (MIFIR, REG. EU NO. 600/2014)

First Berlin notes that it has concluded a contract with the issuer to prepare financial analyses and is paid for that by the issuer. First Berlin makes the financial analysis simultaneously available for all interested security financial services companies. First Berlin thus believes that it fulfils the requirements of section 64 WpHG for minor non-monetary benefits.

PRICE TARGET DATES

Unless otherwise indicated, current prices refer to the closing prices of the previous trading day.

AGREEMENT WITH THE ANALYSED COMPANY AND MAINTENANCE OF OBJECTIVITY

The present financial analysis is based on the author's own knowledge and research. The author prepared this study without any direct or indirect influence exerted on the part of the analysed company. Parts of the financial analysis were possibly provided to the analysed company prior to publication in order to avoid inaccuracies in the representation of facts. However, no substantial changes were made at the request of the analysed company following any such provision.

ASSET VALUATION SYSTEM

First Berlin's system for asset valuation is divided into an asset recommendation and a risk assessment.

ASSET RECOMMENDATION

The recommendations determined in accordance with the share price trend anticipated by First Berlin in the respectively indicated investment period are as follows:

Category		1	2
Current market capitalisation (in €)		0 - 2 billion	> 2 billion
Strong Buy ¹	An expected favourable price trend of:	> 50%	> 30%
Buy	An expected favourable price trend of:	> 25%	> 15%
Add	An expected favourable price trend of:	0% to 25%	0% to 15%
Reduce	An expected negative price trend of:	0% to -15%	0% to -10%
Sell	An expected negative price trend of:	< -15%	< -10%

¹ The expected price trend is in combination with sizable confidence in the quality and forecast security of management.

Our recommendation system places each company into one of two market capitalisation categories. Category 1 companies have a market capitalisation of €0 – €2 billion, and Category 2 companies have a market capitalisation of > €2 billion. The expected return thresholds underlying our recommendation system are lower for Category 2 companies than for Category 1 companies. This reflects the generally lower level of risk associated with higher market capitalisation companies.

RISK ASSESSMENT

The First Berlin categories for risk assessment are low, average, high and speculative. They are determined by ten factors: Corporate governance, quality of earnings, management strength, balance sheet and financial risk, competitive position, standard of financial disclosure, regulatory and political uncertainty, strength of brandname, market capitalisation and free float. These risk factors are incorporated into the First Berlin valuation models and are thus included in the target prices. First Berlin customers may request the models.

INVESTMENT HORIZON

Unless otherwise stated in the financial analysis, the ratings refer to an investment period of twelve months.

UPDATES

At the time of publication of this financial analysis it is not certain whether, when and on what occasion an update will be provided. In general First Berlin strives to review the financial analysis for its topicality and, if required, to update it in a very timely manner in connection with the reporting obligations of the analysed company or on the occasion of ad hoc notifications.

SUBJECT TO CHANGE

The opinions contained in the financial analysis reflect the assessment of the author on the day of publication of the financial analysis. The author of the financial analysis reserves the right to change such opinion without prior notification.

Legally required information regarding

- key sources of information in the preparation of this research report
- valuation methods and principles
- sensitivity of valuation parameters

can be accessed through the following internet link: <http://firstberlin.com/disclaimer-english-link/>

SUPERVISORY AUTHORITY: Bundesanstalt für Finanzdienstleistungsaufsicht (German Federal Financial Supervisory Authority) [BaFin], Graurheindorferstraße 108, 53117 Bonn and Lurgiallee 12, 60439 Frankfurt

EXCLUSION OF LIABILITY (DISCLAIMER)

RELIABILITY OF INFORMATION AND SOURCES OF INFORMATION

The information contained in this study is based on sources considered by the author to be reliable. Comprehensive verification of the accuracy and completeness of information and the reliability of sources of information has neither been carried out by the author nor by First Berlin. As a result no warranty of any kind whatsoever shall be assumed for the accuracy and completeness of information and the reliability of sources of information, and neither the author nor First Berlin, nor the person responsible for passing on or distributing the financial analysis shall be liable for any direct or indirect damage incurred through reliance on the accuracy and completeness of information and the reliability of sources of information.

RELIABILITY OF ESTIMATES AND FORECASTS

The author of the financial analysis made estimates and forecasts to the best of the author's knowledge. These estimates and forecasts reflect the author's personal opinion and judgement. The premises for estimates and forecasts as well as the author's perspective on such premises are subject to constant change. Expectations with regard to the future performance of a financial instrument are the result of a measurement at a single point in time and may change at any time. The result of a financial analysis always describes only one possible future development – the one that is most probable from the perspective of the author – of a number of possible future developments.

Any and all market values or target prices indicated for the company analysed in this financial analysis may not be achieved due to various risk factors, including but not limited to market volatility, sector volatility, the actions of the analysed company, economic climate, failure to achieve earnings and/or sales forecasts, unavailability of complete and precise information and/or a subsequently occurring event which affects the underlying assumptions of the author and/or other sources on which the author relies in this document. Past performance is not an indicator of future results; past values cannot be carried over into the future.

Consequently, no warranty of any kind whatsoever shall be assumed for the accuracy of estimates and forecasts, and neither the author nor First Berlin, nor the person responsible for passing on or distributing the financial analysis shall be liable for any direct or indirect damage incurred through reliance on the correctness of estimates and forecasts.

INFORMATION PURPOSES, NO RECOMMENDATION, SOLICITATION, NO OFFER FOR THE PURCHASE OF SECURITIES

The present financial analysis serves information purposes. It is intended to support institutional investors in making their own investment decisions; however in no way provide the investor with investment advice. Neither the author, nor First Berlin, nor the person responsible for passing on or distributing the financial analysis shall be considered to be acting as an investment advisor or portfolio manager vis-à-vis an investor. Each investor must form his own independent opinion with regard to the suitability of an investment in view of his own investment objectives, experience, tax situation, financial position and other circumstances.

The financial analysis does not represent a recommendation or solicitation and is not an offer for the purchase of the security specified in this financial analysis. Consequently, neither the author nor First Berlin, nor the person responsible for passing on or distributing the financial analysis shall as a result be liable for losses incurred through direct or indirect employment or use of any kind whatsoever of information or statements arising out of this financial analysis.

A decision concerning an investment in securities should take place on the basis of independent investment analyses and procedures as well as other studies including, but not limited to, information memoranda, sales or issuing prospectuses and not on the basis of this document.

NO ESTABLISHMENT OF CONTRACTUAL OBLIGATIONS

By taking note of this financial analysis the recipient neither becomes a customer of First Berlin, nor does First Berlin incur any contractual, quasi-contractual or pre-contractual obligations and/or responsibilities toward the recipient. In particular no information contract shall be established between First Berlin and the recipient of this information.

NO OBLIGATION TO UPDATE

First Berlin, the author and/or the person responsible for passing on or distributing the financial analysis shall not be obliged to update the financial analysis. Investors must keep themselves informed about the current course of business and any changes in the current course of business of the analysed company.

DUPLICATION

Dispatch or duplication of this document is not permitted without the prior written consent of First Berlin.

SEVERABILITY

Should any provision of this disclaimer prove to be illegal, invalid or unenforceable under the respectively applicable law, then such provision shall be treated as if it were not an integral component of this disclaimer; in no way shall it affect the legality, validity or enforceability of the remaining provisions.

APPLICABLE LAW, PLACE OF JURISDICTION

The preparation of this financial analysis shall be subject to the law obtaining in the Federal Republic of Germany. The place of jurisdiction for any disputes shall be Berlin (Germany).

NOTICE OF DISCLAIMER

By taking note of this financial analysis the recipient confirms the binding nature of the above explanations.

By using this document or relying on it in any manner whatsoever the recipient accepts the above restrictions as binding for the recipient.

QUALIFIED INSTITUTIONAL INVESTORS

First Berlin financial analyses are intended exclusively for qualified institutional investors.

This report is not intended for distribution in the USA and/or Canada.