

## ABO Wind (AB9 GH) | Utilities

September 09, 2019

### A hidden champion among the renewables developers

The mega-topics grid parity of renewables and global warming are likely to make the renewables market boom worldwide in the coming years. Measured by pipeline, ABO Wind is one of the largest developers of renewables projects in Europe. With its rapidly growing pipeline, the wind and solar park developer impressively demonstrates its ability to quickly identify and secure market opportunities before its competitors do. We expect ABO Wind's sales and profit to reach new record highs in the next two years. The decision taken to abandon coal and nuclear power in ABO Wind's home market Germany is causing a drastic increase in the demand for renewables. In Spain, ABO Wind was able to secure important grid connections at an early stage thanks to its long-standing presence in this market, which now gives it an extensive pipeline there. In Finland, France and Ireland, the company has built up a strong market position in markets that are currently experiencing particularly rapid growth.

- For the years 2020 and 2021, we expect EBITDA growth averaging 26% p.a. For the same period, we expect a further increase in the pipeline from currently 7.2 GW to 8.5 GW.
- ABO Wind trades at 3.3x EV/EBITDA 2021e; the direct developer-peer PNE and the real estate developer Instone trade at 5.3x EV/EBITDA 2021e on average.

| Fundamentals (in EUR m)   | 2016 | 2017  | 2018  | 2019e | 2020e | 2021e |
|---------------------------|------|-------|-------|-------|-------|-------|
| Sales                     | 122  | 147   | 150   | 129   | 161   | 192   |
| EBITDA                    | 34   | 38    | 32    | 28    | 32    | 45    |
| EBIT                      | 24   | 25    | 22    | 16    | 20    | 33    |
| EPS adj. (EUR)            | 2.15 | 2.22  | 1.67  | 1.33  | 1.69  | 2.79  |
| DPS (EUR)                 | 0.50 | 0.40  | 0.42  | 0.40  | 0.40  | 0.50  |
| BVPS (EUR)                | 8.77 | 10.40 | 11.63 | 12.54 | 13.83 | 16.22 |
| Net Debt incl. Provisions | 25   | 1     | 48    | 48    | 44    | 32    |
| Ratios                    | 2016 | 2017  | 2018  | 2019e | 2020e | 2021e |
| EV/EBITDA                 | 2.4  | 2.5   | 4.8   | 5.7   | 4.9   | 3.3   |
| EV/EBIT                   | 3.4  | 3.7   | 7.0   | 9.8   | 7.7   | 4.5   |
| P/E                       | 3.4  | 5.4   | 8.3   | 11.3  | 8.9   | 5.4   |
| Dividend yield (%)        | 6.8  | 3.3   | 3.0   | 2.7   | 2.7   | 3.3   |
| EBITDA margin (%)         | 28.1 | 25.7  | 21.4  | 22.0  | 20.1  | 23.2  |
| EBIT margin (%)           | 19.5 | 17.0  | 14.6  | 12.8  | 12.7  | 16.9  |
| Net debt/EBITDA           | 0.7  | 0.0   | 1.5   | 1.7   | 1.3   | 0.7   |
| ROE (%)                   | 49.1 | 23.2  | 15.1  | 11.0  | 12.8  | 18.6  |
| PBV                       | 0.8  | 1.1   | 1.2   | 1.2   | 1.1   | 0.9   |

Sources: Refinitiv, Metzler Research

**Buy** initiation of coverage

**Price\*** EUR 15.50

**Price target** EUR 23.70

\* XETRA trading price at the close of the previous day unless stated otherwise in the Disclosures

|                          |      |
|--------------------------|------|
| Market Cap (EUR m)       | 115  |
| Enterprise Value (EUR m) | 162  |
| Free Float (%)           | 22.0 |

Price (in EUR)



| Performance (in %) | 1m  | 3m  | 12m  |
|--------------------|-----|-----|------|
| Share              | 4.7 | 3.3 | 14.0 |
| Rel. to SDAX       | 2.0 | 2.3 | 25.2 |

Sources: Refinitiv, Metzler Research

#### Sponsored Research



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## Key Data

### Company profile

CEO: Andreas Höllinger, Dr. Jochen Ahn, Matthias Bockholt, Dr. Karsten Schlageter (all equal rights)

CFO: Wiesbaden

### Major shareholders

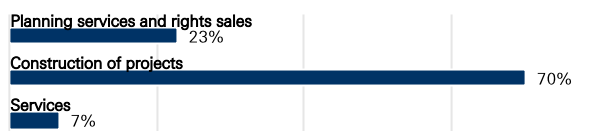
Family Ahn (31%), Family Bockholt (31%), Mainova AG (10%), Baden-Württembergische Versorgungskasse der Ärzte (6%)

### Key figures

| P&L (in EUR m)                             | 2016        | %            | 2017        | %            | 2018        | %             | 2019e        | %             | 2020e        | %            | 2021e        | %            |
|--|-------------|--------------|-------------|--------------|-------------|---------------|--------------|---------------|--------------|--------------|--------------|--------------|
| <b>Sales</b>                               | <b>122</b>  | <b>n.a.</b>  | <b>147</b>  | <b>20.0</b>  | <b>150</b>  | <b>2.4</b>    | <b>129</b>   | <b>-14.0</b>  | <b>161</b>   | <b>24.9</b>  | <b>192</b>   | <b>18.9</b>  |
| <b>EBITDA</b>                              | <b>34</b>   | <b>n.a.</b>  | <b>38</b>   | <b>9.6</b>   | <b>32</b>   | <b>-14.8</b>  | <b>28</b>    | <b>-11.5</b>  | <b>32</b>    | <b>14.0</b>  | <b>45</b>    | <b>37.1</b>  |
| EBITDA margin (%)                          | 28.1        | n.a.         | 25.7        | -8.7         | 21.4        | -16.7         | 22.0         | 3.0           | 20.1         | -8.7         | 23.2         | 15.3         |
| <b>EBIT</b>                                | <b>24</b>   | <b>n.a.</b>  | <b>25</b>   | <b>4.5</b>   | <b>22</b>   | <b>-12.0</b>  | <b>16</b>    | <b>-25.0</b>  | <b>20</b>    | <b>24.2</b>  | <b>33</b>    | <b>58.9</b>  |
| EBIT margin (%)                            | 19.5        | n.a.         | 17.0        | -12.9        | 14.6        | -14.0         | 12.8         | -12.8         | 12.7         | -0.6         | 16.9         | 33.7         |
| <b>Financial result</b>                    | <b>-2</b>   | <b>n.a.</b>  | <b>-1</b>   | <b>1.6</b>   | <b>-1</b>   | <b>38.7</b>   | <b>-2</b>    | <b>-118.1</b> | <b>-2</b>    | <b>0.0</b>   | <b>-2</b>    | <b>0.0</b>   |
| <b>EBT</b>                                 | <b>22</b>   | <b>n.a.</b>  | <b>23</b>   | <b>4.9</b>   | <b>21</b>   | <b>-10.3</b>  | <b>14</b>    | <b>-31.2</b>  | <b>18</b>    | <b>27.5</b>  | <b>31</b>    | <b>65.3</b>  |
| Taxes                                      | 6           | n.a.         | 6           | 9.4          | 9           | 32.3          | 4            | -49.1         | 6            | 27.5         | 9            | 65.3         |
| Tax rate (%)                               | 26.4        | n.a.         | 27.5        | n.a.         | 40.6        | n.a.          | 30.0         | n.a.          | 30.0         | n.a.         | 30.0         | n.a.         |
| Net income                                 | 16          | n.a.         | 17          | 3.3          | 13          | -24.9         | 10           | -20.7         | 13           | 27.5         | 21           | 65.3         |
| Minority interests                         | 0           | n.a.         | 0           | -55.0        | 0           | 88.9          | 0            | -100.0        | 0            | n.a.         | 0            | n.a.         |
| <b>Net Income after minorities</b>         | <b>16</b>   | <b>n.a.</b>  | <b>17</b>   | <b>3.4</b>   | <b>13</b>   | <b>-25.0</b>  | <b>10</b>    | <b>-20.5</b>  | <b>13</b>    | <b>27.5</b>  | <b>21</b>    | <b>65.3</b>  |
| Number of shares outstanding (m)           | 8           | 0.0          | 8           | 0.0          | 8           | 0.0           | 8            | 0.0           | 8            | 0.0          | 8            | 0.0          |
| <b>EPS adj. (EUR)</b>                      | <b>2.15</b> | <b>n.a.</b>  | <b>2.22</b> | <b>3.4</b>   | <b>1.67</b> | <b>-25.0</b>  | <b>1.33</b>  | <b>-20.5</b>  | <b>1.69</b>  | <b>27.5</b>  | <b>2.79</b>  | <b>65.3</b>  |
| <b>DPS (EUR)</b>                           | <b>0.50</b> | <b>100.0</b> | <b>0.40</b> | <b>-20.0</b> | <b>0.42</b> | <b>5.0</b>    | <b>0.40</b>  | <b>-4.8</b>   | <b>0.40</b>  | <b>0.0</b>   | <b>0.50</b>  | <b>25.0</b>  |
| Dividend yield (%)                         | 6.8         | n.a.         | 3.3         | n.a.         | 3.0         | n.a.          | 2.7          | n.a.          | 2.7          | n.a.         | 3.3          | n.a.         |
| <b>Cash Flow (in EUR m)</b>                | <b>2016</b> | <b>%</b>     | <b>2017</b> | <b>%</b>     | <b>2018</b> | <b>%</b>      | <b>2019e</b> | <b>%</b>      | <b>2020e</b> | <b>%</b>     | <b>2021e</b> | <b>%</b>     |
| <b>Gross Cash Flow</b>                     | <b>27</b>   | <b>n.a.</b>  | <b>30</b>   | <b>10.9</b>  | <b>22</b>   | <b>-25.4</b>  | <b>22</b>    | <b>0.2</b>    | <b>25</b>    | <b>12.6</b>  | <b>33</b>    | <b>33.9</b>  |
| <b>Increase in working capital</b>         | <b>-27</b>  | <b>n.a.</b>  | <b>3</b>    | <b>n.a.</b>  | <b>-39</b>  | <b>n.a.</b>   | <b>-15</b>   | <b>n.a.</b>   | <b>-15</b>   | <b>n.a.</b>  | <b>-15</b>   | <b>n.a.</b>  |
| <b>Capital expenditures</b>                | <b>2</b>    | <b>n.a.</b>  | <b>1</b>    | <b>-47.2</b> | <b>3</b>    | <b>149.2</b>  | <b>3</b>     | <b>-7.4</b>   | <b>3</b>     | <b>0.0</b>   | <b>4</b>     | <b>33.3</b>  |
| D+A/Capex (%)                              | 428.1       | n.a.         | 982.8       | n.a.         | 314.8       | n.a.          | 400.0        | n.a.          | 400.0        | n.a.         | 300.0        | n.a.         |
| <b>Free cash flow (Metzler definition)</b> | <b>-3</b>   | <b>n.a.</b>  | <b>25</b>   | <b>889.5</b> | <b>-20</b>  | <b>-179.2</b> | <b>4</b>     | <b>120.5</b>  | <b>7</b>     | <b>67.4</b>  | <b>14</b>    | <b>107.5</b> |
| Free cash flow yield (%)                   | -5.7        | n.a.         | 27.9        | n.a.         | -19.1       | n.a.          | 3.6          | n.a.          | 6.0          | n.a.         | 12.5         | n.a.         |
| Dividend paid                              | 2           | n.a.         | 4           | 100.0        | 3           | -20.0         | 3            | 5.0           | 3            | -4.8         | 3            | 0.0          |
| <b>Free cash flow (post dividend)</b>      | <b>-5</b>   | <b>n.a.</b>  | <b>22</b>   | <b>521.4</b> | <b>-23</b>  | <b>-207.4</b> | <b>1</b>     | <b>104.0</b>  | <b>4</b>     | <b>318.8</b> | <b>11</b>    | <b>192.6</b> |
| <b>Balance sheet (in EUR m)</b>            | <b>2016</b> | <b>%</b>     | <b>2017</b> | <b>%</b>     | <b>2018</b> | <b>%</b>      | <b>2019e</b> | <b>%</b>      | <b>2020e</b> | <b>%</b>     | <b>2021e</b> | <b>%</b>     |
| <b>Assets</b>                              | <b>147</b>  | <b>n.a.</b>  | <b>174</b>  | <b>18.7</b>  | <b>194</b>  | <b>11.6</b>   | <b>189</b>   | <b>-2.7</b>   | <b>204</b>   | <b>7.9</b>   | <b>227</b>   | <b>11.4</b>  |
| <b>Goodwill</b>                            | <b>0</b>    | <b>n.a.</b>  | <b>0</b>    | <b>n.a.</b>  | <b>0</b>    | <b>n.a.</b>   | <b>0</b>     | <b>n.a.</b>   | <b>0</b>     | <b>n.a.</b>  | <b>0</b>     | <b>n.a.</b>  |
| <b>Shareholders' equity</b>                | <b>67</b>   | <b>n.a.</b>  | <b>80</b>   | <b>18.7</b>  | <b>89</b>   | <b>11.8</b>   | <b>96</b>    | <b>7.8</b>    | <b>106</b>   | <b>10.3</b>  | <b>124</b>   | <b>17.3</b>  |
| Equity/total assets (%)                    | 45.7        | n.a.         | 45.7        | n.a.         | 45.9        | n.a.          | 50.8         | n.a.          | 51.9         | n.a.         | 54.6         | n.a.         |
| <b>Net Debt incl. Provisions</b>           | <b>25</b>   | <b>n.a.</b>  | <b>1</b>    | <b>-95.3</b> | <b>48</b>   | <b>n.m.</b>   | <b>48</b>    | <b>-1.9</b>   | <b>44</b>    | <b>-8.1</b>  | <b>32</b>    | <b>-25.9</b> |
| thereof pension provisions                 | 0           | n.a.         | 0           | n.a.         | 0           | n.a.          | 0            | n.a.          | 0            | n.a.         | 0            | n.a.         |
| Gearing (%)                                | 36.6        | n.a.         | 1.5         | n.a.         | 54.4        | n.a.          | 49.5         | n.a.          | 41.3         | n.a.         | 26.1         | n.a.         |
| Net debt/EBITDA                            | 0.7         | n.a.         | 0.0         | n.a.         | 1.5         | n.a.          | 1.7          | n.a.          | 1.3          | n.a.         | 0.7          | n.a.         |

### Structure

#### Sales by area of activity 2018



Sources: Refinitiv, Metzler Research

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## Executive Summary

### Experts in a foreseeable accelerating market

#### Developers need a high degree of expertise, entrepreneurial competence and foresight

Project developers play a key role in implementing the energy transition from conventional power generation to renewables. The planning and construction of projects require a very high degree of expertise, the lead time of the projects from two (solar) to five years (wind) a high degree of entrepreneurial competence and foresight. The project developer ABO Wind, founded in 1996 and now active in 16 countries, has its roots in wind power, but in recent years has also expanded its wind farm management activities through services such as maintenance and expert reports (since 2014) and the construction of solar parks (since 2016). With a project pipeline of over 7 GW, ABO Wind is one of the largest developers in Europe.

Unlike practically all its large competitors, ABO Wind does not operate own wind or solar farms. The disadvantage of this strategy is a lower calculability of earnings and a higher (theoretical) earnings volatility. The advantage is the focus as well as a relatively low capital commitment.

Since its foundation ABO Wind has reported profits. The stabilization of the annual results, a big challenge in the project or developer industry with projects whose execution extends over many years, is achieved by ABO Wind through a good regional diversification and also through diversification into services and solar technology.

#### Robust profit development with positive trend in EURm

|        | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019e | 2020e | 2021e | 2022e |
|--------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|
| EBITDA | 4    | 5    | 14   | 22   | 12   | 20   | 20   | 34   | 38   | 32   | 28    | 32    | 45    | 45    |

Source: ABO Wind, Metzler Research

As one of the most experienced and largest developers in Europe, we consider ABO Wind to be very well positioned to participate in the expected growth opportunities offered by the renewable energy business.

We see the following structural growth drivers for renewables for the coming years:

- Grid parity: In regions with above-average wind or sunshine, such as Finland, Spain, Argentina, Ireland or the UK, ABO Wind can already conclude electricity supply contracts without subsidies. For the important (continental) European market, we expect grid parity around 2020. Rising CO2 prices as part of Phase 4 of the European Emissions Trading Scheme (ETS) play a relevant role here. For next year, we expect average electricity production prices in Germany and France, for example, to fall to around EUR 55/MWh for wind and around EUR 46/MWh for solar power. We then see the average electricity price at around EUR 56/MWh.
- Phase-out of conventional generation: Countries such as Germany are pushing ahead with the phase-out of conventional power generation, particularly against the background of increasingly strict CO2 regulations. At the same time, the trend towards electrification (e.g. e-mobility) is likely to lead to rising demand for electricity. The loss of conventional generation capacity must be offset by the addition of renewables to a significant extent. In Germany, for ex-

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ample, around 100 GW of renewable capacity will be needed by 2038 to replace coal and nuclear power, i.e. an average of around 5 GW per year. This is why these countries are prepared to continue subsidizing investors in renewables until grid parity is achieved.

## All ingredients for a successful growth story

Against the background of a foreseeable shortage of conventional electricity and competitive prices for 'green' electricity, we see very good growth opportunities for ABO Wind in the coming years. A wealth of experience and a good geographic positioning should enable the company to turn these opportunities into attractive sales and profit growth. For the years 2020 and 2021, we expect ABO Wind's EBITDA growth averaging 26% p.a.

## Valuation

Our DCF model shows a fair value of around EUR 23.3 per ABO Wind's share. From the peer group analysis a fair value of around EUR 24.2 per share can be derived.

## SWOT Analysis

In our view, the greatest risks for ABO Wind result primarily from a relatively low predictability for sales and profit development. The tradability of the share is limited by the OTC listing and a relatively low liquidity. The greatest strengths are the long experience in the development of renewable energy systems and the comprehensive pipeline.

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### Strengths

ABO Wind is a developer pure play

Internationalization ensures geographical diversification and initial experience with unsubsidized contracts

Long experience in the development and operation of renewable energy systems

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### Opportunities

Comprehensive pipeline also with larger projects promises good growth opportunities

Early positioning in promising young markets

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### Weaknesses

Focus on project business offers relatively low predictability for sales and profit development

Internationalization increases country risks

OTC listing of shares; relatively low liquidity

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### Threats

Time delays in the approval procedures for new plants

Changes of the legal subsidy conditions in ABO Wind's markets

Source: Metzler Research

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## Investment Case

### Smart diversification ensures robust and uptrend results

The core business of ABO Wind is the project planning and construction of wind and solar farms. Since the company was founded, ABO Wind has developed 199 renewables projects with a total capacity of around 2.3 GW. ABO Wind also offers services such as operational management, services (maintenance, gear endoscopy, testing, repairs) and technical appraisals (rotor blade, concrete and drive train appraisals).

#### Project development - ABO Wind can boast a well filled pipeline

Of the 199 renewable projects, 135 projects were in Germany, 8 in Argentina, 28 in France, 8 in Spain, 7 in Finland, 6 in Ireland, 2 in UK, 1 in Bulgaria, 2 in Greece, 1 in Iran and 1 in Hungary.

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#### ABO Wind - capacity developed to date in MW

| WIND         | Built capacity | Period      |
|--------------|----------------|-------------|
| Germany      | 1,000          | 1996 - 2019 |
| Argentina    | 460            | 2016 + 2017 |
| France       | 300            | 2004 - 2019 |
| Finland      | 240            | 2015 - 2019 |
| Spain        | 210            | 2012 - 2019 |
| Ireland      | 80             | 2010 - 2018 |
| <b>SOLAR</b> |                |             |
| Germany      | 2              | 2018/2019   |
| <b>TOTAL</b> | <b>~2,300</b>  |             |

Source: ABO Wind, Metzler Research

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The plants are sold mainly to institutional investors (pension funds, insurance companies, utilities, financial investors).

In Germany, France, Finland and Ireland, ABO Wind has created very robust core markets with an estimated 2-3% market share. Spain was ABO Wind's first foreign market (2001) in which the company held on despite times of crisis with an unexpected cessation of state subsidies and economic turbulence. This enabled the company to secure important network connections at an early stage, which today gives it a full and valuable pipeline. ABO Wind is active in Argentina since 2006 and has built a pipeline of more than 1 GW.

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**Sales split by region**

in %

|           | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|-----------|------|------|------|------|------|------|------|
| Germany   | 55   | 61   | 64   | 70   | 75   | 44   | 48   |
| Finland   | 0    | 0    | 5    | 10   | 11   | 35   | 23   |
| France    | 40   | 23   | 29   | 20   | 6    | 14   | 12   |
| Ireland   | 2    | 15   | 2    | 0    | 0    | 2    | 16   |
| Spain     | 2    | 0    | 0    | 0    | 1    | 2    | 1    |
| Argentina | 0    | 0    | 0    | 0    | 8    | 0    | 1    |
| Other     | 1    | 0    | 0    | 0    | 0    | 3    | 0    |

Source: ABO Wind, Metzler Research

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In the medium term, ABO Wind aims to generate three quarters of its turnover outside Germany.

In Canada, Columbia, Tunisia, Tanzania and South Africa the company is getting into position, each with one to two employees on site and a pipeline totaling around 1.3 GW. Probably the first concrete project successes can be expected in South Africa and Tunisia in the near future.

In the past, ABO Wind's focus has been on relatively small projects with an average lot size of around 10 to 20 MW. In recent years the size of the projects has increased significantly; projects with a size of several 100 MW at planning stage are no longer an unusual occurrence.

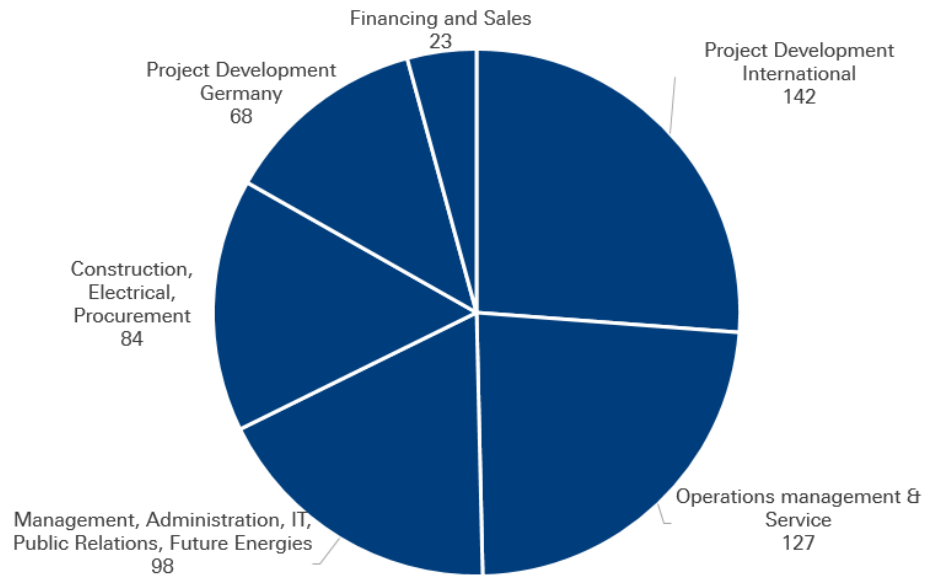
**Solar not yet a factor; but share of new business around 50%**

Measured by the installed power, solar is not yet a factor. In the medium term, however, solar is expected to account for one third of sales. The share of new business is already around 50%.

In addition, ABO Wind offers services such as operational management, services (maintenance, gear endoscopy, inspections, repairs) and technical expert opinions (rotor blade, concrete and drive train reports). This business currently accounts for around 7% of Group sales.

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## Organizational structure of ABO Wind - Number of employees by division



Source: ABO Wind, Metzler Research

ABO Wind's pipeline is well filled; projects with a total capacity of 7,200 MW are in preparation through securing land, expert opinions, planning approvals, grid connections, financing and tariffs.

## ABO Wind - a well filled pipeline in MW (ca.)

|                  |              |
|------------------|--------------|
| Spain            | 1,700        |
| Argentina        | 1,100        |
| Germany          | 1,000        |
| South Africa     | 1,000        |
| Finland          | 800          |
| France           | 600          |
| Canada           | 300          |
| Greece           | 200          |
| Northern Ireland | 200          |
| Ireland          | 100          |
| Other            | 200          |
| <b>TOTAL *</b>   | <b>7,200</b> |

\* thereof ~2,500 MW Solar

Source: ABO Wind, Metzler Research



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In project development, ABO Wind takes over all steps from site acquisition to the construction of wind and solar parks. ABO Wind also buys projects at all stages of development and then completes them under its own management. ABO Wind can develop projects on its own account up to turnkey handover. However, ABO Wind also sells project rights in earlier stadiums; the buyers often commission ABO Wind again for completion, then as a service provider for the accounts of the customer.

**The project phase essentially comprises the following milestones**    **Development**

- Site identification

Search for sites with good wind conditions / irradiance resource and analysis of grid connection feasibility

- Landowner Agreement

Contact with local landowners and negotiation of leasing agreements

- Renewable resource analysis

Installation of meteorological equipment and analysis of wind profiles and solar radiation

- Obtain consents & permits

Engagement with local public authorities to secure environmental, construction, operating and other licenses

- Layout design & equipment choice

Optimization of the layout of the farm and selection of the best fit of equipment model based on the site characteristics

- Project evaluation & funding

Evaluation of potential operational and financial risks and arrangement of appropriate finance to the project

**Construction**

- Construction

Building of access roads, preparation of foundations, assembly of wind turbines or solar panels, construction of substation

- Grid connection

Connection from the cable route to the public feed point and, if necessary, construction of a transformer power plant.

A comparison with competitors in Germany and abroad shows that although ABO Wind is one of the pioneers in the field of renewables, it grew comparatively modestly at first. ABO Wind's pipeline is impressive, especially compared to the volume developed so far.

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## ABO Wind is a developer pure play

| Company         | Home market    | Fokus                  | Incorporation | Own capacity (2019e, in MW) | Realized projects (MW) | Pipeline (MW) |
|-----------------|----------------|------------------------|---------------|-----------------------------|------------------------|---------------|
| WPD             | Germany        | Developer and operator | 1996          | 1525                        | 4,400                  | > 10,000      |
| E.ON            | Germany        | Developer and operator | 2008          | 5,900                       | 7,500                  | >8,000        |
| <b>ABO Wind</b> | <b>Germany</b> | <b>Developer</b>       | <b>1996</b>   | .                           | <b>2,300</b>           | <b>7,200</b>  |
| Innogy          | Germany        | Developer and operator | 2008          | 3,500                       | 6,500                  | 7,100         |
| PNE             | Germany        | Developer and operator | 1994          | 95                          | 5,500                  | 5,200         |
| Innergex        | Canada         | Developer and operator | 1990          | 1600                        | 2,500                  | >5,000        |
| Scatec Solar    | Norway         | Developer and operator | 2001          | 920                         | 1,500                  | 4,850         |
| Energiekontor   | Germany        | Developer and operator | 1990          | 300                         | 1,000                  | 4,000         |
| Juwi            | Germany        | Developer              | 1996          | .                           | 4,800                  | n.a.          |
| Enertrag        | Germany        | Developer and operator | 1998          | 1600                        | 1,260                  | n.a.          |

Source: Metzler Research

ABO Wind manages the internationalisation with relatively few local staff and according to the principle of local partnerships. This means that the market entry is preferably accelerated by the cooperation with independent local developers, who have expertise in the specific regulations and structures of the respective countries as well as contacts to the property owners and approval authorities. Other ways are to build up a local workforce. Or the purchase of project rights.

## ABO Wind - staff by countries

|              |            |
|--------------|------------|
| Germany      | 378        |
| France       | 71         |
| UK/Ireland   | 20         |
| Argentina    | 18         |
| Finland      | 13         |
| Spain        | 7          |
| Canada       | 3          |
| Columbia     | 2          |
| Greece       | 2          |
| Hungary      | 1          |
| South Africa | 1          |
| Tunesia      | 1          |
| Other        | 27         |
| <b>TOTAL</b> | <b>542</b> |

Source: ABO Wind, Metzler Research

### Purchase of equipment, financing and sale of projects take place in Wiesbaden

In order to achieve cross-border economies of scale, the purchase of the wind turbines and solar equipment, the financing and the sale of the parks take place at the head-

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quarters in Wiesbaden. The department 'International Business Development' also identifies new growth markets for the company and carries out the market entry if necessary. This department is also responsible for the development of new business models and partnerships with local companies.

In recent years, the ABO Wind business model has changed to the extent that ABO Wind not only sells turnkey projects but more and more often in earlier stages ('project right sales'). E.g. without permits or grid connection. In recent years, the ratio of rights sales to project construction, measured by volume in MW, has been approximately 3:1. Of course, turnkey projects are much more profitable and also play a greater role in the company's earnings. In trend, the company does not expect any further shift in this ratio. Turnkey projects are and will remain the core business of the company.

**Right sales play a role, but sales and profits are significantly higher for Construction in EURm**

|                              | 2011      | 2012      | 2013      | 2014      | 2015      | 2016       | 2017       | 2018       | 2019e      | 2020e      | 2021e      |
|------------------------------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|
| Planning services and rights | 23        | 42        | 21        | 30        | 34        | 37         | 28         | 34         | 40         | 42         | 47         |
| Construction of projects     | 15        | 22        | 62        | 63        | 39        | 79         | 111        | 106        | 78         | 108        | 132        |
| Services                     | 3         | 5         | 6         | 5         | 6         | 6          | 8          | 10         | 11         | 12         | 13         |
| <b>Total</b>                 | <b>40</b> | <b>68</b> | <b>89</b> | <b>98</b> | <b>80</b> | <b>122</b> | <b>147</b> | <b>150</b> | <b>129</b> | <b>161</b> | <b>192</b> |

Source: ABO Wind, Metzler Research

It has always been part of the ABO Wind business model, or the developer business model in general, that some project concepts do not work. Such 'failed' projects are written off by the company. Corresponding write-downs have regularly amounted to up to EUR 10 million p.a. in recent years.

We expect the highest dynamics for the next 3 to 5 years for ABO Wind from France, Spain, Germany, Ireland, Finland, Greece, Argentina and South Africa.

**Services - with a stabilizing effect on results**

ABO Wind's range of services in this area includes in particular the technical and commercial management of the parks. The technical area includes all measures to reduce costs, extend service life and increase yields (e.g. control optimization, automated fault clearance workflow, etc.).

The commercial area includes in particular liquidity management and the billing with the energy supplier. Communication with banks, insurance companies, tax consultants and investors as well as invoicing for feed-in management also fall into this area. We expect this segment to grow roughly in line with the net growth of built parks

**Our model assumptions: The lush project pipeline should soon materialize in sales and profits.**

**When does a project turn into revenue?**

The posting of projects begins with the so-called 'project readiness'. This is given from the moment the land is secured. The progress of work on projects under development is recognized in the income statement and balance sheet at cost under 'work in progress'.

These postings do not become sales until the projects are 'ready to build'. In other

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words, when the conditions that are decisive for the project, i.e. approval and grid connection, have been met. At this point, the project is transferred to a project company and revenues are recognised. In total, two services are invoiced: planning and construction.

A special case is the Sale of rights: As mentioned above, the sale of rights, i.e. the sale of a project before approval and/or connection to the grid, has played a greater role for ABO Wind in recent years than in the past. This is also due to the fact that the projects are becoming larger and the activities more international. The sale of rights reduces risks and enables the company to gradually establish itself in a market. However, project construction is to remain the core and focus of ABO Wind's business activities.

## Our model assumptions

According to our calculations, in the past up to 40% of the projects from the ABO Wind pipeline proved to be unrealizable. For our estimates for the coming years, we assume a default rate of around 65%. The reasons for this cautious assumption are, on the one hand, the increasing size of individual projects and the associated cluster risks and the ongoing internationalisation of the company.

We also assume that revenues per MW of developed (not constructed) capacity will settle at around 20% below the levels achieved in previous years. Here, too, we argue with the increasing size of individual projects and increasing competition.

For the next two years, we expect project sales primarily in Finland, France and Germany.

Greece, Spain, Argentina and South Africa should also play a greater role over the next three to four years.

## We expect the number of commissioned projects to grow strongly in the coming years

| Projects ( in MW )   | 2016         | 2017         | 2018         | 2019e        | 2020e        | 2021e        | 2022e        | 2023e        |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <b>Developments</b>  | <b>395</b>   | <b>255</b>   | <b>423</b>   | <b>480</b>   | <b>500</b>   | <b>565</b>   | <b>575</b>   | <b>585</b>   |
| <i>Sale of rights</i>  | 350          | 195          | 345          | 400          | 310          | 350          | 360          | 370          |
| <i>Planning service (company guidance 2019 -2021: 150 to 250 MW p.a.)</i>            | 45           | 60           | 78           | 80           | 190          | 215          | 215          | 215          |
| <b>Construction (company guidance 2019-2021: up to 160 MW p.a.)</b>                  | <b>156</b>   | <b>147</b>   | <b>106</b>   | <b>87</b>    | <b>120</b>   | <b>147</b>   | <b>157</b>   | <b>160</b>   |
| <b>Operational management volume</b>   | <b>1032</b>  | <b>1221</b>  | <b>1251</b>  | <b>1320</b>  | <b>1420</b>  | <b>1530</b>  | <b>1600</b>  | <b>1650</b>  |
| Sales ( in EURm )  | 2016         | 2017         | 2018         | 2019         | 2020         | 2021         | 2022         | 2023         |
| Planning service and Sale of rights  | 36.8         | 27.6         | 34.3         | 40.0         | 41.7         | 47.1         | 47.9         | 48.8         |
| Construction   | 79.4         | 110.9        | 105.7        | 78.3         | 108.0        | 132.3        | 141.3        | 144.0        |
| Services   | 5.7          | 8.3          | 10.4         | 10.9         | 11.7         | 12.5         | 13.1         | 13.5         |
|  | <b>122.3</b> | <b>146.8</b> | <b>150.4</b> | <b>129.2</b> | <b>161.4</b> | <b>191.9</b> | <b>202.3</b> | <b>206.3</b> |
| Work in progress   | 22.3         | 29.5         | -1           | 8            | 16           | 20           | 21           | 22           |
| <b>Total</b>   | <b>144.6</b> | <b>176.3</b> | <b>149.4</b> | <b>137.2</b> | <b>177.4</b> | <b>211.9</b> | <b>223.3</b> | <b>228.3</b> |
| Ratios   | 2016         | 2017         | 2018         | 2019         | 2020         | 2021         | 2022         | 2023         |
| Sales from Planning service and Sale of rights/ Volume of Developments (in EURk/MW)  | 93           | 108          | 81           | 83           | 83           | 83           | 83           | 83           |
| Sales from Construction and Work in progress / Volume of Constructions (in EURm/ MW) | 0.7          | 1.0          | 1.0          | 1.0          | 1.0          | 1.0          | 1.0          | 1.0          |
| <b>Pipeline (in MW)</b>  | <b>4000</b>  | <b>4000</b>  | <b>7200</b>  | <b>7671</b>  | <b>8104</b>  | <b>8484</b>  | <b>8772</b>  | <b>9040</b>  |
| Total Sales (avg. of t+1, t+2, t+3)/ Pipeline (t) (in EUR / MW )                     | 39           | 39           | 24           | 27           | 27           | 26           | 24           | 23           |
| Total annual project volume (avg. of t+1, t+2, t+3) / Pipeline (t) (in %)            | 12           | 14           | 9            | 9            | 9            | 9            | 8            | 8            |

Source: Bloomberg, Metzler Research

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## Market dynamics: We expect the electricity price to rise further

### A higher CO2 price has a supporting effect

Phase 4 of the EU Emissions Trading System (EU ETS) will begin in 2021. A significant shortage and increase in the price of CO2 certificates should ultimately lead to a sustained increase in (wholesale) electricity prices in Europe - this cost position is passed on by utilities to end customers.

Higher electricity prices lower the threshold for renewables until grid parity is reached, i.e. profitability without subsidies. We assume that with the electricity prices in Germany/Europe that we estimate for the next few years, renewables will no longer require subsidies from 2020 in order to be operated profitably.

### EU Emissions Trading (EU ETS) - an increase in CO2 certificates prices is foreseeable

The EU ETS was adopted by the European Parliament in 2003 and entered into force in 2005. The system currently covers the CO2 emissions of around 12,000 power generation plants in 31 European countries and some sectors of industry (e.g. cement plants).

The system is based on the fact that an operator of a plant has to buy a certificate for every tonne of CO2 emitted. There is only a limited number of new certificates per year. This amount is decreasing annually by a certain percentage, currently (and until 2020) by 1.74% p.a.

Emissions trading takes place over several years. So far, pilot phase I (2005 - 2007) and phase II (2008 - 2012) have been completed. The current phase III ends in 2020.

The relatively low prices for allowances in recent years are likely to have largely undercut the system's objective of stimulating long-term investment in climate-friendly technologies.

### The changes in Phase 4 and what they mean

In March 2018, the Council of the European Union decided on the following substantial adjustments for Phase IV, which will begin in 2021:

- the increase in the linear reduction factor from 1.74% to 2.2%; the number of allowances available annually will thus be reduced from around 1.9 billion at present to 1.3 billion by 2030
- doubling the reduction quota of surplus certificates. So far unused allowances are automatically carried over into the next trading period; around 1.7 billion surplus allowances have accumulated. The existing surplus of certificates is now expected to be reduced by 2022 (instead of 2027 before). From then on, only a market stability reserve of around 800 million allowances, limited to the respective auction volume of the previous year, will be held. This is intended to compensate for price fluctuations resulting from extreme fluctuations in demand.

Since the announcement of the details for Phase IV, the CO2 price has risen from around 8 EUR/tCO2 at the time to around 26 EUR/tCO2 at present.

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## Development of the CO2 Price



Sources: Bloomberg, Metzler Research

According to the German Federal Environment Agency, CO2 emissions under the ETS regime fell by around 25% between 2005 and 2016, i.e. by an average of around 2 1/4% p.a. Over the next 11 years, emissions should be reduced by a further 32% in terms of the reduction in allowances. From the utility companies' point of view, this is not an easy undertaking when one considers, for example, that electricity demand from e-mobility is expected to increase by more than 20% overall or that the phase-out of nuclear power in Germany and Belgium by substituting CO2-free nuclear power with coal and gas should structurally increase the amount of CO2.

We assume that the planned shortage of certificates will lead to the recent increase in CO2 certificates prices at least continuing for the foreseeable future.

### Our forecast model results in electricity prices in Germany of EUR 55.9 (e) per 2023

Our forecasting model for the electricity price focuses on determining the type of power plant, which functions as a marginal power plant, and its (time) shares in determining the market clearing price. Our approach to determining the time shares of different types of marginal power plants is based on their market shares and on our assessment that coal-fired and gas-fired power plants will be the main boundary power plants to be considered over the next decade.

In our opinion, only in rare exceptional cases will renewables be able to fully cover the electricity demand in this phase for significantly longer periods of time.

Our forecast for the electricity price is based on the following assumptions:

- we take into account the generation shares of the marginal power plant types expected to be used in each case. We expect the generation shares of gas-fired power plants to increase from around 8% at present to around 23% by 2023.
- we assume a complete shift of the entire passenger car fleet in Germany from conventional engines to electric drive by 2050 (linear transformation process). The complete electrification of the car fleet should lead to an increase in demand for electricity of around 20%e.

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- we take into account the current CO2 costs.

The expected theoretical electricity price, in our model the market share-weighted marginal costs, will then be around 55.9 EUR/MWh.

## Metzler Research electricity price forecasts

|   | 2017 | 2018 | 2019e | 2020e | 2021e | 2022e | 2023e |
|---|------|------|-------|-------|-------|-------|-------|
| <b>Marginal power station (time share, in %)</b>                |      |      |       |       |       |       |       |
| Gas   | 7    | 8.5  | 9     | 15    | 18    | 21    | 23    |
| Coal  | 93   | 93   | 91    | 85    | 82    | 79    | 77    |
| <b>Marginal costs (in EUR/MWh)</b>                              |      |      |       |       |       |       |       |
| Gas   | 43   | 51   | 57    | 57    | 57    | 57    | 57    |
| Coal  | 30   | 43   | 56    | 56    | 56    | 56    | 56    |
| <b>Theoretical weighted Market Clearing Price (in EUR/ MWh)</b> |      |      |       |       |       |       |       |
|   | 30.9 | 44.3 | 55.7  | 55.8  | 55.8  | 55.9  | 55.9  |

Source: Metzler Research

### The switch in the promotion system from fixed feed-in tariffs to auction procedures - a trend observable worldwide

In 2017, the support system for wind energies in Germany was changed over. In previous years, the German government had guaranteed investors fixed feed-in tariffs averaging around EUR 90/MWh; the average market price for electricity at that time was around EUR45/MWh.

The average price awarded in the (new) wind tender rounds in 2018 and in 2019 so far was around EUR 60 per MWh. We assume that these (market) prices reliably quantify the current production costs for electricity from wind turbines (LCoE [Levelized cost of Electricity]).

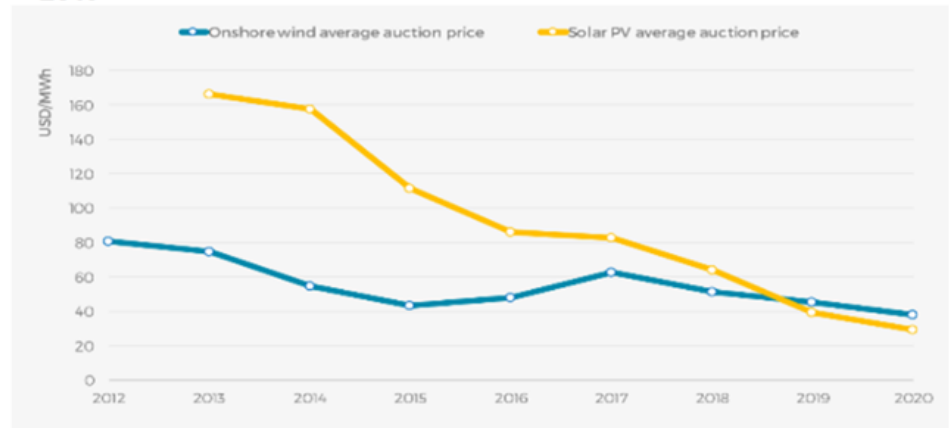
### LCoE are expected to decrease by around 7.5% p.a.

The manufacturers of wind turbines aim to achieve a cost/efficiency advantage (reduction of the LCoE) in the high single-digit percentage range by further development and optimization. We assume an annual LCoE improvement of 7.5%. By 2020, wind electricity production costs should fall to around EUR 55/MWh.

For solar systems, the average price awarded in the tender rounds in 2018 and in 2019 so far in Germany of around EUR 50/MWh indicates that solar technology will reach grid parity even faster. This assessment is somewhat less optimistic than that of the International Energy Agency (IEA), which assumes that tender prices will fall to USD 40 or lower by 2020.

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## Announced wind & PV average auction prices by commissioning date 2017

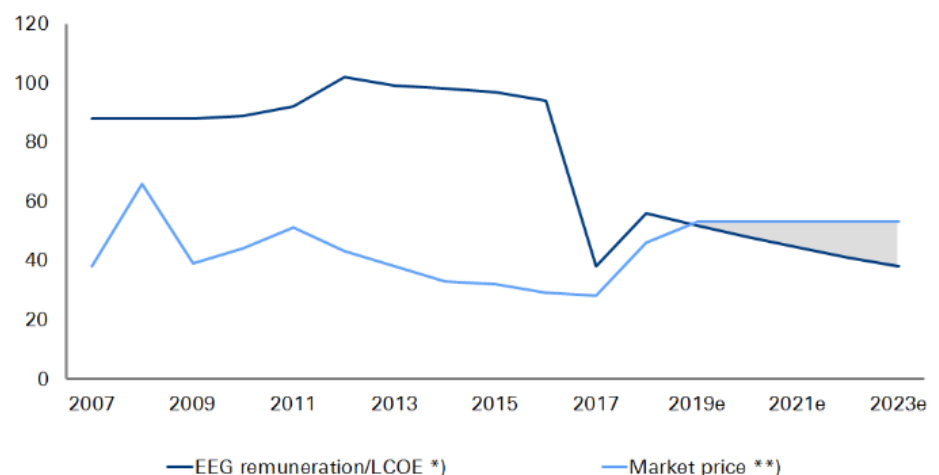


Source: IEA

Such a market environment should have a positive effect on ABO Wind which still has a strong focus on Germany. The development of electricity prices in Germany is usually indicative for neighbouring countries as well. In most of ABO's target markets, the wind and sun conditions relevant for the generation costs are at least as good as in Germany.

The possible 'additional earnings' can then be described graphically with the hatched area in the following chart.

## Surprising reversal since 2017: subsidies down, electricity price up in EUR/MWh

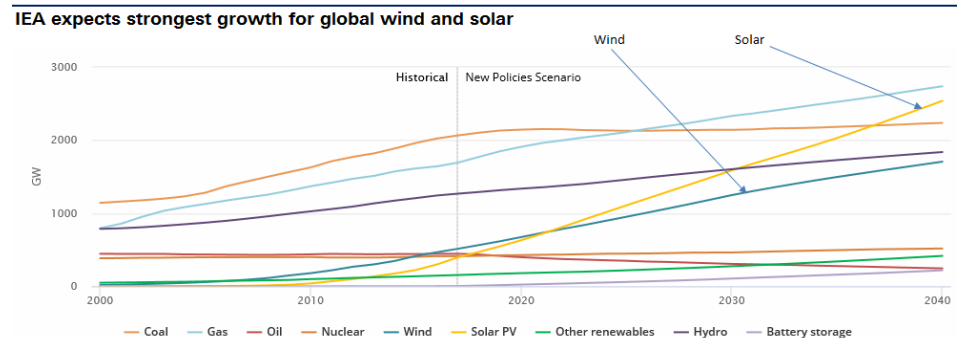


\*) 2007 - 2016 avg. EEG tariffs; after 2017 avg. auction price (-LCOE) in EUR/MWh  
 \*\*) Avg, until 2017; source EEX, from onwards 2018 Metzler estimates  
 Source: Metzler Research



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Also against the background of these considerations, we consider the growth forecasts of the International Energy Agency (IEA) as plausible. IEA expects a GAGR of 10% for solar and 6% for wind by 2040.



Source: IEA

The market environment in Abo Wind's most promising markets:

## Spain - in the fast lane

Spain has long pioneered the use of wind and sun to produce climate-friendly electricity. As a reaction to the economic crisis, however, in 2012 the then government abruptly stopped the expansion of renewable energies. Years of stagnation followed. Since 2017, a new government has been working on revitalising the sector, which is now gaining momentum. In the central scenario for developments in the coming years, the industry association WindEurope expects Spain to play a similarly important role for renewables in the future as it did before 2012. Between 2018 and 2022, the association expects 7,200 MW of wind power to go onshore in Spain. In Europe, the association expects even larger new installations only in Germany and France. Abo Wind secured itself some 5 years ago grid connections for some 1.5 GW in Spain. These are decisive for the success of a project and are now in short supply. So far ABO Wind has only used about 1/3 of these connections and can therefore still build 1GW capacity in Spain.

## Ireland - best wind conditions, good potential

In view of the excellent wind conditions and the isolated geographical location, Ireland is well placed to produce a great deal of wind power in the future. The responsible authority, SEAI (Sustainable Energy Authority of Ireland) puts the total possible wind power capacity in the Republic of Ireland in 2050 at 46 GW. Of this total, 16 GW will come from onshore sites and 30 GW from offshore wind farms. At the end of 2018, almost 3.6 GW of onshore wind power were connected to the grid in Ireland.

## Finland - particularly strong growth momentum

Within just a few years, Finland connected 2,000 MW of wind power to the grid with a fixed feed-in tariff. The state is planning to award further tariffs for renewable energy plants in open tenders. The "National Energy and Climate Strategy 2030" aims to in-

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crease the share of renewable energies in final energy consumption to more than 50 percent by 2030. Dynamism in the wind industry is also generated by the growing demand of large electricity consumers such as Google or Facebook, who secure wind power from wind turbines by means of long-term contracts (PPAs). This provides projects with a solid basis for calculation even without government feed-in tariffs. Wind Europe expects, that between 2018 and 2022 a total of 2.3 GW of wind power capacity will be newly connected to the grid in Finland, which will increase the installed wind power capacity to more than double.

## **Greece - ambitious growth targets**

The government wants to make even better use of Greece's good natural conditions and published a draft national energy and climate plan at the beginning of 2019. It envisages increasing the share of renewable energy sources in electricity generation to 55 percent by 2030. In 2017 their share was 27 percent. In 2018, Greece awarded tariffs for new wind and solar parks for the first time via tenders. In 2018, wind farms in Greece with a nominal output of 207 MW connected to the grid. A total of 2.8 GW were installed at the end of the year. In the period from 2018 to 2022, the Wind Europe industry association expects an increase of a total of 1.5 GW of wind power. SolarPower Europe expects that around 1.6 GW of photovoltaic capacity will be added between 2018 and 2022.

## **Argentina - a large growth market; currently burdened by political uncertainty**

Renewable energies cover only about two percent of the electricity demand. The current government's goal is to increase this share to 20 percent by 2025, in particular by expanding solar and wind power capacities. Expansion has gained momentum since 2016. In 2018, 0.5 GW of wind power were connected to the grid. This makes Argentina one of the largest wind power markets on the American continents. In August, in the primary election for the next presidential election (27 October 2019), the market-liberal Argentine president Macri suffered a defeat against the left-wing opponent Fernandez. The result was a high level of uncertainty on the Argentine financial markets and a sharp slump in the Argentine peso. It should be noted that the promotion of renewables practiced in recent years under Macri had already been set up under the previous left-wing government. Due to excellent wind and space conditions, wind power is by far the cheapest source of electricity in Argentina. In our opinion, further expansion can be expected. ABO Wind is factoring its projects in Argentina in USD and currently still sees high demand primarily from domestic investors.

## **South Africa – picks up speed again**

Since the South African energy crisis of 2008 to 2015 at the latest, renewable energies have played an important role in the country's government plans. The Integrated Resource Plan for Electricity 2010 to 2030 provides for an increase in generation capacity from the current 49 GW by a further 46 GW; a reduction in the share of coal currently still at 46 percent; and an increase in the share of renewables from 8 percent to around 26 percent.

This change is to be supported by a liberalization of the electricity market. Public utility Eskom currently supplies about 95 percent of South Africa's electricity market, and IPPs (Independent Power Producers) are expected to increase their share to 30 percent by 2030. A bidding procedure for large-scale grid-connected renewable energy plants has been in place since 2011. Since then, 92 large-scale renewable energy projects with a total capacity of almost 6.3 GW have been approved. However, there has been a standstill in this area in the last two years. After the new President Ramaphosa took office in

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2018, however, there has been renewed momentum in renewables expansion.

## **Germany - 'damned' to strong growth**

There is currently a backlog of approvals for wind power projects. Also because more than 1,000 citizens' initiatives object to approved projects because of noise or shadow nuisance or for reasons of animal welfare. Projects with a capacity of 1.5 GW were approved in 2018. In 2019 so far only 0.9 GW. According to the German Wind Energy Association, projects with a total capacity of 11 GW are stuck. The lack of permits for the construction of new wind farms counteracts the government's decision in October 2018 to accelerate the expansion of renewable energies. The share of green electricity in Germany is currently around 40%, and the Grand Coalition is aiming for a 65% share by 2030. It has already been decided to shut down corresponding coal and nuclear capacities. To compensate for this, an average of 5 GW of renewable capacity would have to be added each year over the next 10 years. In Germany, the financial support of electricity from newly commissioned wind or PV plants is only possible through participation in the central tenders of the Federal Network Agency. Wind tender volumes amount to 3.8 GW in 2019, 4.3 GW in 2020 and 4.5 GW in 2021, solar tender volumes to 2.4 to 2.6 GW in 2019 and 2020.

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## Financials: Very robust balance sheet

The equity ratio of ABO Wind AG amounted to 50% as of 31.12.2018. In this calculation, we have included half of the profit participation certificate in the amount of EUR 14.4 million. We expect an increase over the next few years; as of 2021, we estimate the equity ratio at 55%.

The ratio of net financial debt (incl. 50% of the participation certificate) to EBITDA amounted to 1.5x. We expect this ratio to fall significantly below 1x in the coming years.

### ABO Wind has a solid balance sheet

|                  | 2018 | 2019e | 2020e | 2021e | 2022e |
|------------------|------|-------|-------|-------|-------|
| Net debt/EBITDA  | 1.5  | 1.7   | 1.3   | 0.7   | 0.6   |
| Equity ratio (%) | 49.6 | 51.0  | 51.8  | 54.8  | 57.0  |

Source: ABO Wind, Metzler Research

Financial debt comprises a convertible bond issued in May 2018 with a subscribed volume of EUR 11.5 million and a term until April 30, 2020. Conversion price EUR 15, interest rate 3%, conversion option for the last time in October 2019 at a ratio of 1:1. In our model, we do not consider a conversion; however, this is not intended to imply an assessment of the probability of a conversion.

Liabilities to banks have a remaining term of 1-5 years.

## Company outlook

For the years 2019 to 2021, ABO Wind expects annual new business (pipeline growth, gross) in the order of one to two gigawatts. A project enters the pipeline when it is 'project ready', i.e. usually when land is secured.

For the completed project developments, ABO Wind expects an average volume of 150 to 250 megawatts per year for the years 2019 to 2021.

With regard to the completed construction work, ABO Wind expects up to 160 MW per year for the years 2019 to 2021, distributed mainly among projects in Europe.

For 2019, the company expects a net profit of around EUR 10 million. The main reason for the year-on-year decline in earnings lies in further delays in approval procedures for German wind power projects.

ABO Wind expects net results of more than EUR 20 million to be 'the rule' from 2023. Until then, the company expects the five-year average for net income to be around EUR 15 million p.a.

## Dividend policy

The company aims to maintain an equity ratio of more than 40 percent. Approximately 20 to 30 percent of the reported balance sheet profit will be distributed as a dividend.

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## Company history, milestones, management and stakeholders

### Company history

In 1996 Dr. Jochen Ahn and Matthias Bockholt founded the Ahn & Bockholt planning company for the use of wind power and other renewable energies. In the course of the transformation into a publicly listed company, the name changes to ABO Wind in 2000.

In 2001, the first branch abroad opened in Valencia. Toulouse followed in 2002, Argentina in 2006, Belgium, Scotland and Ireland in 2007, Bulgaria in 2008, Finland in 2013 and Iran in 2015. Belgium and Bulgaria were closed in 2013.

In 2014, the wind farm management activities were expanded with services such as maintenance, expert opinions, maintenance and repair. 2016 marked the start of the team for the development of international photovoltaic projects.

### Management Board

Andreas Höllinger

Since 2001 in a leading function for ABO Wind, since 2010 member of the executive board and since October 2018 chairman of the executive board. Before joining ABO Wind, Mr. Höllinger worked in the financial sector and in project finance.

Dr. Jochen Ahn

Doctor of Physical Chemistry. Together with Matthias Bockholt, founder of ABO Wind AG. Before founding the company, Jochen Ahn worked as a wind power expert for the Hessian Ministry of the Environment.

Matthias Bockholt

Studied electrical engineering. Before the foundation of ABO Wind AG, at the Hessian Ministry of the Environment he was entrusted with the evaluation of solar energy projects.

Dr. Karsten Schlageter

At ABO Wind AG since 2013, has played a key role in shaping international business development. Member of the Executive Board since October 2018. Previously with EnBW and various management consultancies.

### Supervisory board

Jörg Lukowsky

Since 2000 Chairman of the Supervisory Board of ABO Wind AG. Specialist lawyer for tax law and labour law in the law firm Fuhrmann Wallenfels.

Maike Schmidt

The scientist is working at the Centre for Solar Energy and Hydrogen Research Baden-

# company report

Württemberg (ZSW) in the field of "Systems Analysis" since 2006.

Eveline Lemke

Spokeswoman for the Rhineland-Palatinate Green Regional Association, Deputy Prime Minister of Rhineland-Palatinate and Minister for Economic Affairs, Climate Protection, Energy and Regional Planning. Between 2016 and 2017 President of the Karlsruhochschule in Karlsruhe. Member of the Supervisory Board of ABO Wind AG since June 2017.

Dr. Uwe Leprich

Professor of Economic Policy and Energy Economics. Head of the Climate Protection and Energy Department of the Federal Environment Agency. Member of the supervisory board of ABO Wind AG since 2000.

Norbert Breidenbach

Member of the Management Board of the utilities companies Rewag and Mainova. Member of the Supervisory Board of ABO Wind AG since 2015.

## **Shareholder structure**

The families of the company founders and board members Matthias Bockholt and Dr. Jochen Ahn each hold around 31% of the shares.

The Frankfurt energy service provider Mainova AG owns around ten percent.

The Baden-Württemberg Medical Care Fund holds around 6% of the shares.

The free float amounts to around 22%.

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## Valuation

### The shares have a significant discount to other developer companies

We use absolute and relative valuation methods to calculate the fair value of shares in ABO Wind. As our absolute valuation method we use a discounted cash flow (DCF) model. Our relative valuation comprises a comparison of ABO Wind with a peer group of listed companies.

Based on the results of our absolute and relative valuations, the fair value of ABO Wind is EUR 23.7 per share.

#### Our share price target is derived from the mean of the two valuation models

in EUR

|                     | Estimated fair value |
|---------------------|----------------------|
| Peer group analysis | 24.2                 |
| DCF model           | 23.3                 |
| <b>Average</b>      | <b>23.7</b>          |

Source: Metzler Research, Bloomberg

As a first step, we value shares in ABO Wind using our DCF model.

| DCF (EURm)                  | Forecast period |             |             | Transition period |             |             |             |             | TV          |
|-----------------------------|-----------------|-------------|-------------|-------------------|-------------|-------------|-------------|-------------|-------------|
|                             | 2019e           | 2020e       | 2021e       | 2022e             | 2023e       | 2024e       | 2025e       | 2026e       | 2027e       |
| Sales                       | 129             | 161         | 192         | 201               | 212         | 222         | 233         | 245         | 245         |
| Sales growth (%)            | -               | 24.9        | 18.9        | 5                 | 5           | 5           | 5           | 5           | 0           |
| Operating margin (%)        | 12.8            | 12.7        | 16.9        | 12                | 12          | 12          | 12          | 12          | 9           |
| EBIT                        | 16              | 20          | 33          | 24                | 25          | 27          | 28          | 29          | 22          |
| Taxes                       | 4               | 6           | 9           | 6.8               | 7.2         | 7.5         | 7.9         | 8.4         | 2.1         |
| Tax rate (%)                | 30.0            | 30.0        | 30.0        | 30                | 30          | 30          | 30          | 30          | 30          |
| <b>NOPAT</b>                | <b>12.1</b>     | <b>14.9</b> | <b>23.4</b> | <b>17.4</b>       | <b>18.2</b> | <b>19.1</b> | <b>20.0</b> | <b>21.0</b> | <b>19.9</b> |
| Depreciation & Amortisation | 12              | 12          | 12          | 12.1              | 12.7        | 13.3        | 14.0        | 14.7        | 14.7        |
| Effect of changes in NWC    | -15             | -15         | -15         | -20               | -20         | -20         | -20         | -5          | -5          |
| <b>Operating cash flow</b>  | <b>9.1</b>      | <b>11.9</b> | <b>20.4</b> | <b>9.5</b>        | <b>10.9</b> | <b>12.4</b> | <b>14.0</b> | <b>30.7</b> | <b>29.6</b> |
| Capital expenditure         | 3               | 3           | 4           | 4                 | 4           | 4           | 5           | 5           | 4.9         |
| <b>Free cash flow</b>       | <b>6.1</b>      | <b>8.9</b>  | <b>16.4</b> | <b>5.4</b>        | <b>6.7</b>  | <b>8.0</b>  | <b>9.4</b>  | <b>25.8</b> | <b>24.7</b> |
| Discounted free cash flow   | 5.8             | 7.8         | 13.1        | 4.0               | 4.6         | 5.1         | 5.5         | 14.0        |             |

|                                     |             |
|-------------------------------------|-------------|
| Sum of DCF                          | 60          |
| Terminal value                      | 151         |
| <b>Enterprise value</b>             |             |
| Net Debt (incl. pension provisions) | 32          |
| Minorities                          | 0           |
| <b>Equity value</b>                 | <b>178</b>  |
| Number of shares (m)                | 7.6         |
| <b>Value per share</b>              | <b>23.3</b> |

Source: Metzler Research

| Our assumptions               |     |
|-------------------------------|-----|
| Sales growth (%), TV year     | 0   |
| Operating margin (%), TV year | 9   |
| Tax rate (%), years 3-7       | 30  |
| Beta                          | 1.8 |
| LT debt interest rate (%)     | 4   |
| Risk Free Rate (%)            | 1   |
| Market Risk Premium (%)       | 6   |

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The DCF model is very sensitive to changes in the variables used, especially the terminal growth rate and long-term EBIT margin.

## Sensitivity analysis of estimated fair value to terminal sales growth and long-term EBIT margin

in EUR

|             |      | Terminal sales growth rate (in %) |      |      |      |      |      |      |
|-------------|------|-----------------------------------|------|------|------|------|------|------|
|             |      | -1.5                              | -1   | -0.5 | 0    | 0.5  | 1    | 1.5  |
| Long-term   | 7.5  | 18.1                              | 19.0 | 20.1 | 21.3 | 22.6 | 24.1 | 25.9 |
| EBIT margin | 8.0  | 18.6                              | 19.6 | 20.7 | 21.9 | 23.3 | 24.9 | 26.7 |
| (in %)      | 8.5  | 19.2                              | 20.2 | 21.4 | 22.6 | 24.1 | 25.7 | 27.6 |
|             | 9.0  | 19.8                              | 20.8 | 22.0 | 23.3 | 24.8 | 26.5 | 28.5 |
|             | 9.5  | 20.3                              | 21.4 | 22.6 | 24.0 | 25.5 | 27.3 | 29.3 |
|             | 10.0 | 20.9                              | 22.0 | 23.3 | 24.7 | 26.3 | 28.1 | 30.2 |
|             | 10.5 | 21.4                              | 22.6 | 23.9 | 25.4 | 27.0 | 28.9 | 31.0 |
|             | 11.0 | 22.0                              | 23.2 | 24.5 | 26.0 | 27.7 | 29.7 | 31.9 |

Source: Metzler Research

For our relative valuation, we compare ABO Wind's core business to its peer group on the basis of enterprise value (EV/EBITDA 2021e). The direct renewables developer PNE or the real estate developer Instone trade at 5.3x EV/EBITDA 2021e on average. Based on the average multiple, we calculate a fair value of EUR 24.2 for the ABO Wind share.

## ABO Wind - peer group valuation

| in local currencies | Bloomberg Ric | Share price in local currency (06. September 2019) | Metzler Recommendation | EV/EBITDA 2021e |
|---------------------|---------------|--|------------------------|-----------------|
| PNE *               | PNE3 GY       | 3.1  | .                      | 5.6             |
| Instone             | INS GY        | 18.3   | .                      | 4.9             |
| <b>Average</b>      |               |  |                        | <b>5.3</b>      |
| <b>ABO Wind</b>     | AB9 GR        | 15.5   | BUY                    | 3.3             |

\* Average price in the week before PNE confirmed conversations with MSIP regarding business combination (26.8.2019)

Source: Bloomberg, Metzler Research



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## Balance sheet

| (in EUR m)                                  | 2016       | %           | 2017       | %           | 2018       | %           | 2019e      | %            | 2020e      | %           | 2021e      | %           |
|---|------------|-------------|------------|-------------|------------|-------------|------------|--------------|------------|-------------|------------|-------------|
| <b>Assets</b>                               | <b>147</b> | <b>n.a.</b> | <b>174</b> | <b>18.7</b> | <b>194</b> | <b>11.6</b> | <b>189</b> | <b>-2.7</b>  | <b>204</b> | <b>7.9</b>  | <b>227</b> | <b>11.4</b> |
| <b>Fixed assets</b>                         | <b>10</b>  | <b>n.a.</b> | <b>11</b>  | <b>2.9</b>  | <b>10</b>  | <b>-7.7</b> | <b>11</b>  | <b>8.0</b>   | <b>11</b>  | <b>0.2</b>  | <b>11</b>  | <b>1.2</b>  |
| Intangible fixed assets                     | 0          | n.a.        | 0          | 7.3         | 1          | 205.5       | 1          | 11.7         | 1          | 0.0         | 1          | 0.0         |
| Goodwill                                    | 0          | n.a.        | 0          | n.a.        | 0          | n.a.        | 0          | n.a.         | 0          | n.a.        | 0          | n.a.        |
| Other intangible assets                     | 0          | n.a.        | 0          | 7.3         | 1          | 205.5       | 1          | 11.7         | 1          | 0.0         | 1          | 0.0         |
| Tangible assets                             | 5          | n.a.        | 5          | 2.9         | 5          | -7.5        | 5          | 7.6          | 5          | 0.0         | 5          | 2.0         |
| Technical plant and equipment               | 0          | n.a.        | 0          | n.a.        | 0          | 25.8        | 0          | 0.0          | 0          | 0.0         | 0          | 0.0         |
| Financial assets                            | 5          | n.a.        | 6          | 2.6         | 5          | -19.1       | 5          | 7.7          | 5          | 0.5         | 5          | 0.5         |
| Other financial assets                      | 5          | n.a.        | 5          | -0.4        | 4          | -21.5       | 4          | 8.2          | 4          | 0.0         | 4          | 0.0         |
| <b>Current assets</b>                       | <b>134</b> | <b>n.a.</b> | <b>161</b> | <b>20.1</b> | <b>183</b> | <b>13.2</b> | <b>168</b> | <b>-8.0</b>  | <b>183</b> | <b>8.9</b>  | <b>206</b> | <b>12.7</b> |
| Inventories                                 | 70         | n.a.        | 88         | 25.5        | 82         | -7.4        | 97         | 18.3         | 112        | 15.5        | 127        | 13.4        |
| Receivables and other assets                | 55         | n.a.        | 29         | -46.7       | 92         | 211.5       | 56         | -38.6        | 51         | -9.1        | 59         | 16.0        |
| Cash and cash items                         | 4          | n.a.        | 32         | 751.6       | 5          | -86.0       | 10         | 121.4        | 15         | 50.0        | 15         | 0.0         |
| Deferred taxes                              | 2          | n.a.        | 2          | 3.5         | 1          | -17.5       | 10         | 605.7        | 10         | 0.0         | 10         | 0.0         |
| <b>Shareholders' equity and liabilities</b> | <b>147</b> | <b>n.a.</b> | <b>174</b> | <b>18.7</b> | <b>194</b> | <b>11.5</b> | <b>189</b> | <b>-2.6</b>  | <b>204</b> | <b>7.9</b>  | <b>227</b> | <b>11.4</b> |
| <b>Shareholders' equity</b>                 | <b>67</b>  | <b>n.a.</b> | <b>80</b>  | <b>18.7</b> | <b>89</b>  | <b>11.8</b> | <b>96</b>  | <b>7.8</b>   | <b>106</b> | <b>10.3</b> | <b>124</b> | <b>17.3</b> |
| Subscribed capital                          | 8          | n.a.        | 8          | 0.0         | 8          | 0.0         | 8          | 0.0          | 8          | 0.0         | 8          | 0.0         |
| Reserves                                    | 59         | n.a.        | 72         | 21.0        | 81         | 13.1        | 88         | 8.5          | 98         | 11.2        | 116        | 18.7        |
| Minority interests                          | 0          | n.a.        | 0          | n.a.        | 0          | -7.1        | 0          | 2.6          | 0          | 0.0         | 0          | 0.0         |
| <b>Outside capital</b>                      | <b>65</b>  | <b>n.a.</b> | <b>80</b>  | <b>23.1</b> | <b>91</b>  | <b>13.3</b> | <b>79</b>  | <b>-13.3</b> | <b>84</b>  | <b>6.4</b>  | <b>89</b>  | <b>6.0</b>  |
| <b>Liabilities</b>                          | <b>49</b>  | <b>n.a.</b> | <b>56</b>  | <b>14.9</b> | <b>70</b>  | <b>24.1</b> | <b>57</b>  | <b>-18.8</b> | <b>61</b>  | <b>7.1</b>  | <b>64</b>  | <b>5.0</b>  |
| Financial debt                              | 34         | n.a.        | 39         | 15.3        | 49         | 24.8        | 36         | -27.7        | 38         | 5.6         | 40         | 5.3         |
| Accounts payable, trade                     | 7          | n.a.        | 10         | 51.0        | 11         | 10.8        | 11         | 0.2          | 12         | 9.1         | 12         | 0.0         |
| Other liabilities                           | 8          | n.a.        | 7          | -15.8       | 9          | 38.9        | 10         | 5.9          | 11         | 10.0        | 12         | 9.1         |
| Deferred taxes liabilities                  | 0          | n.a.        | 0          | n.a.        | 0          | n.a.        | 0          | n.a.         | 0          | n.a.        | 0          | n.a.        |
| <b>Balance sheet total</b>                  | <b>147</b> | <b>n.a.</b> | <b>174</b> | <b>18.7</b> | <b>194</b> | <b>11.5</b> | <b>189</b> | <b>-2.6</b>  | <b>204</b> | <b>7.9</b>  | <b>227</b> | <b>11.4</b> |

Sources: Refinitiv, Metzler Research

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## Profit & loss account

| (in EUR m)  | 2016       | %           | 2017       | %           | 2018       | %            | 2019e      | %            | 2020e      | %           | 2021e      | %           |
|---|------------|-------------|------------|-------------|------------|--------------|------------|--------------|------------|-------------|------------|-------------|
| Sales   | 122        | n.a.        | 147        | 20.0        | 150        | 2.4          | 129        | -14.0        | 161        | 24.9        | 192        | 18.9        |
| Change in finished goods and work in progress             | 22         | n.a.        | 29         | 32.0        | -1         | -102.1       | 12         | n.m.         | 10         | -16.7       | 20         | 100.0       |
| Own work capitalised                                      | 0          | n.a.        | 0          | n.a.        | 0          | n.a.         | 0          | n.a.         | 0          | n.a.        | 0          | n.a.        |
| <b>Total output</b>                                       | <b>145</b> | <b>n.a.</b> | <b>176</b> | <b>21.9</b> | <b>150</b> | <b>-15.1</b> | <b>141</b> | <b>-5.6</b>  | <b>171</b> | <b>21.4</b> | <b>212</b> | <b>23.6</b> |
| Other operating income                                    | 2          | n.a.        | 4          | 50.3        | 3          | -20.7        | 2          | -32.7        | 2          | 0.0         | 2          | 0.0         |
| Operating expenses  | 123        | n.a.        | 155        | 25.8        | 131        | -15.7        | 127        | -3.0         | 153        | 20.7        | 181        | 18.6        |
| Cost of materials   | 76         | n.a.        | 99         | 30.3        | 71         | -28.8        | 61         | -14.1        | 84         | 38.2        | 109        | 30.3        |
| Personnel expenses  | 27         | n.a.        | 32         | 18.2        | 36         | 13.3         | 40         | 10.2         | 43         | 7.5         | 45         | 4.7         |
| Depreciation and amortization                             | 11         | n.a.        | 13         | 21.3        | 10         | -20.2        | 12         | 17.6         | 12         | 0.0         | 12         | 0.0         |
| Write-downs on intang. fixed as-<br>sets and tang. assets | 0          | n.a.        | 0          | n.a.        | 0          | n.a.         | 0          | n.a.         | 0          | n.a.        | 0          | n.a.        |
| Other operating expenses                                  | 9          | n.a.        | 11         | 16.3        | 13         | 23.2         | 14         | 4.0          | 14         | 0.0         | 15         | 7.1         |
| <b>EBIT</b>   | <b>24</b>  | <b>n.a.</b> | <b>25</b>  | <b>4.5</b>  | <b>22</b>  | <b>-12.0</b> | <b>16</b>  | <b>-25.0</b> | <b>20</b>  | <b>24.2</b> | <b>33</b>  | <b>58.9</b> |
| Financial result  | -2         | n.a.        | -1         | 1.6         | -1         | 38.7         | -2         | -118.1       | -2         | 0.0         | -2         | 0.0         |
| Income from investments                                   | 0          | n.a.        | 0          | -100.0      | 1          | n.a.         | 0          | -100.0       | 0          | n.a.        | 0          | n.a.        |
| Interest income (net)                                     | -2         | n.a.        | -2         | 8.3         | -2         | -6.3         | -2         | -11.0        | -2         | 0.0         | -2         | 0.0         |
| <b>Result of ordinary activities</b>                      | <b>22</b>  | <b>n.a.</b> | <b>23</b>  | <b>4.9</b>  | <b>21</b>  | <b>-10.3</b> | <b>14</b>  | <b>-31.2</b> | <b>18</b>  | <b>27.5</b> | <b>31</b>  | <b>65.3</b> |
| EBT   | 22         | n.a.        | 23         | 4.9         | 21         | -10.3        | 14         | -31.2        | 18         | 27.5        | 31         | 65.3        |
| Taxes on income   | 6          | n.a.        | 6          | 9.4         | 9          | 32.3         | 4          | -49.1        | 6          | 27.5        | 9          | 65.3        |
| Tax rate (%)  | 26.4       | n.a.        | 27.5       | 4.3         | 40.6       | 47.4         | 30.0       | -26.0        | 30.0       | 0.0         | 30.0       | 0.0         |
| <b>Net income</b>   | <b>16</b>  | <b>n.a.</b> | <b>17</b>  | <b>3.3</b>  | <b>13</b>  | <b>-24.9</b> | <b>10</b>  | <b>-20.7</b> | <b>13</b>  | <b>27.5</b> | <b>21</b>  | <b>65.3</b> |
| Minority interests  | 0          | n.a.        | 0          | -55.0       | 0          | 88.9         | 0          | -100.0       | 0          | n.a.        | 0          | n.a.        |
| Minority rate (%)   | 0.1        | n.a.        | 0.1        | -56.4       | 0.1        | 151.6        | 0.0        | -100.0       | 0.0        | n.a.        | 0.0        | n.a.        |
| <b>Net Income after minorities</b>                        | <b>16</b>  | <b>n.a.</b> | <b>17</b>  | <b>3.4</b>  | <b>13</b>  | <b>-25.0</b> | <b>10</b>  | <b>-20.5</b> | <b>13</b>  | <b>27.5</b> | <b>21</b>  | <b>65.3</b> |
| Unappropriated consolidated net<br>income                 | 0          | n.a.        | 0          | n.a.        | 0          | n.a.         | 0          | n.a.         | 0          | n.a.        | 0          | n.a.        |
| <b>Adjustment calculation</b>                             |            |             |            |             |            |              |            |              |            |             |            |             |
| Net Income after minorities                               | 16         | n.a.        | 17         | 3.4         | 13         | -25.0        | 10         | -20.5        | 13         | 27.5        | 21         | 65.3        |
| Adjustments of net income                                 | 0          | n.a.        | 0          | n.a.        | 0          | n.a.         | 0          | n.a.         | 0          | n.a.        | 0          | n.a.        |
| Adjustment rate (%)                                       | 0.0        | n.a.        | 0.0        | n.a.        | 0.0        | n.a.         | 0.0        | n.a.         | 0.0        | n.a.        | 0.0        | n.a.        |
| <b>Adj. net income after minorities</b>                   | <b>16</b>  | <b>n.a.</b> | <b>17</b>  | <b>3.4</b>  | <b>13</b>  | <b>-25.0</b> | <b>10</b>  | <b>-20.5</b> | <b>13</b>  | <b>27.5</b> | <b>21</b>  | <b>65.3</b> |
| Number of shares outstanding                              | 8          | 0.0         | 8          | 0.0         | 8          | 0.0          | 8          | 0.0          | 8          | 0.0         | 8          | 0.0         |
| EPS (EUR)   | 2.15       | n.a.        | 2.22       | 3.4         | 1.67       | -25.0        | 1.33       | -20.5        | 1.69       | 27.5        | 2.79       | 65.3        |
| EPS adj. (EUR)  | 2.15       | n.a.        | 2.22       | 3.4         | 1.67       | -25.0        | 1.33       | -20.5        | 1.69       | 27.5        | 2.79       | 65.3        |

Sources: Refinitiv, Metzler Research

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## Cash flow/ratios/valuation

|   | 2016   | %    | 2017   | %     | 2018   | %      | 2019e  | %     | 2020e  | %     | 2021e  | %     |
|---|--------|------|--------|-------|--------|--------|--------|-------|--------|-------|--------|-------|
| <b>Cash Flow/ Net Debt (in EUR m)</b>             |        |      |        |       |        |        |        |       |        |       |        |       |
| Gross Cash Flow                                   | 27     | n.a. | 30     | 10.9  | 22     | -25.4  | 22     | 0.2   | 25     | 12.6  | 33     | 33.9  |
| Increase in working capital                       | -27    | n.a. | 3      | 110.3 | -39    | n.m.   | -15    | 61.6  | -15    | 0.0   | -15    | 0.0   |
| Capital expenditures                              | 2      | n.a. | 1      | n.a.  | 3      | n.a.   | 3      | n.a.  | 3      | n.a.  | 4      | n.a.  |
| D+A/Capex (%)                                     | 428.1  | n.a. | 982.8  | n.a.  | 314.8  | n.a.   | 400.0  | n.a.  | 400.0  | n.a.  | 300.0  | n.a.  |
| Free cash flow (Metzler definition)               | -3     | n.a. | 25     | 889.5 | -20    | -179.2 | 4      | 120.5 | 7      | 67.4  | 14     | 107.5 |
| Free cash flow yield (%)                          | -5.7   | n.a. | 27.9   | n.a.  | -19.1  | n.a.   | 3.6    | n.a.  | 6.0    | n.a.  | 12.5   | n.a.  |
| Dividend paid                                     | 2      | n.a. | 4      | 100.0 | 3      | -20.0  | 3      | 5.0   | 3      | -4.8  | 3      | 0.0   |
| Free cash flow (post dividend)                    | -5     | n.a. | 22     | 521.4 | -23    | -207.4 | 1      | 104.0 | 4      | 318.8 | 11     | 192.6 |
| Net Debt incl. Provisions                         | 25     | n.a. | 1      | -95.3 | 48     | n.m.   | 48     | -1.9  | 44     | -8.1  | 32     | -25.9 |
| Gearing (%)                                       | 36.6   | n.a. | 1.5    | n.a.  | 54.4   | n.a.   | 49.5   | n.a.  | 41.3   | n.a.  | 26.1   | n.a.  |
| Net debt/EBITDA                                   | 0.7    | n.a. | 0.0    | n.a.  | 1.5    | n.a.   | 1.7    | n.a.  | 1.3    | n.a.  | 0.7    | n.a.  |
| <b>Ratios (in %)</b>                              |        |      |        |       |        |        |        |       |        |       |        |       |
| <b>Liquidity</b>                                  |        |      |        |       |        |        |        |       |        |       |        |       |
| Quick ratio                                       | 974.1  | n.a. | 735.7  | n.a.  | 917.2  | n.a.   | 647.3  | n.a.  | 592.5  | n.a.  | 660.8  | n.a.  |
| Current ratio                                     | 2048.1 | n.a. | 1628.2 | n.a.  | 1663.2 | n.a.   | 1528.6 | n.a.  | 1525.3 | n.a.  | 1718.7 | n.a.  |
| Pay-out ratio                                     | 23.2   | n.a. | 18.0   | n.a.  | 25.2   | n.a.   | 30.2   | n.a.  | 23.7   | n.a.  | 17.9   | n.a.  |
| <b>Balance sheet structure</b>                    |        |      |        |       |        |        |        |       |        |       |        |       |
| Equity/total assets                               | 45.7   | n.a. | 45.7   | n.a.  | 45.9   | n.a.   | 50.8   | n.a.  | 51.9   | n.a.  | 54.6   | n.a.  |
| Equity to fixed assets                            | 639.8  | n.a. | 737.5  | n.a.  | 893.6  | n.a.   | 891.7  | n.a.  | 981.2  | n.a.  | 1137.8 | n.a.  |
| Long-term capital to total assets                 | 69.1   | n.a. | 68.4   | n.a.  | 71.2   | n.a.   | 69.6   | n.a.  | 70.4   | n.a.  | 72.1   | n.a.  |
| Long-term capital to fixed assets and inventories | 125.1  | n.a. | 119.9  | n.a.  | 150.4  | n.a.   | 122.1  | n.a.  | 116.8  | n.a.  | 118.7  | n.a.  |
| Liabilities to equity (leverage)                  | 72.9   | n.a. | 70.6   | n.a.  | 78.3   | n.a.   | 59.0   | n.a.  | 57.3   | n.a.  | 51.3   | n.a.  |
| <b>Profitability/efficiency</b>                   |        |      |        |       |        |        |        |       |        |       |        |       |
| Working capital to sales                          | 66.4   | n.a. | 70.1   | n.a.  | 60.7   | n.a.   | 82.8   | n.a.  | 75.6   | n.a.  | 71.4   | n.a.  |
| EBIT margin                                       | 19.5   | n.a. | 17.0   | n.a.  | 14.6   | n.a.   | 12.8   | n.a.  | 12.7   | n.a.  | 16.9   | n.a.  |
| EBITDA margin                                     | 28.1   | n.a. | 25.7   | n.a.  | 21.4   | n.a.   | 22.0   | n.a.  | 20.1   | n.a.  | 23.2   | n.a.  |
| Net ROS   | 13.5   | n.a. | 11.6   | n.a.  | 8.5    | n.a.   | 7.8    | n.a.  | 8.0    | n.a.  | 11.1   | n.a.  |
| Cash flow margin                                  | 21.8   | n.a. | 20.2   | n.a.  | 14.7   | n.a.   | 17.1   | n.a.  | 15.4   | n.a.  | 17.4   | n.a.  |
| ROE (after Tax/Min.)                              | 49.1   | n.a. | 23.2   | n.a.  | 15.1   | n.a.   | 11.0   | n.a.  | 12.8   | n.a.  | 18.6   | n.a.  |
| <b>Productivity</b>                               |        |      |        |       |        |        |        |       |        |       |        |       |
| Average number of employees ('000)                | 406.0  | n.a. | 495.0  | 21.9  | 542.0  | 9.5    | 572.0  | 5.5   | 590.0  | 3.1   | 600.0  | 1.7   |
| Sales per employee (EUR '000)                     | 0.3    | n.a. | 0.3    | -1.6  | 0.3    | -6.5   | 0.2    | -18.5 | 0.3    | 21.1  | 0.3    | 16.9  |
| EBIT per employee (EUR '000)                      | 0.1    | n.a. | 0.1    | -14.3 | 0.0    | -19.6  | 0.0    | -28.9 | 0.0    | 20.4  | 0.1    | 56.3  |
| <b>Valuation</b>                                  |        |      |        |       |        |        |        |       |        |       |        |       |
| PER   | 3.4    | n.a. | 5.4    | n.a.  | 8.3    | n.a.   | 11.3   | n.a.  | 8.9    | n.a.  | 5.4    | n.a.  |
| PBV   | 0.8    | n.a. | 1.1    | n.a.  | 1.2    | n.a.   | 1.2    | n.a.  | 1.1    | n.a.  | 0.9    | n.a.  |
| EV/EBITDA   | 2.4    | n.a. | 2.5    | n.a.  | 4.8    | n.a.   | 5.7    | n.a.  | 4.9    | n.a.  | 3.3    | n.a.  |
| EV/EBIT   | 3.4    | n.a. | 3.7    | n.a.  | 7.0    | n.a.   | 9.8    | n.a.  | 7.7    | n.a.  | 4.5    | n.a.  |
| Dividend yield (%)                                | 6.8    | n.a. | 3.3    | n.a.  | 3.0    | n.a.   | 2.7    | n.a.  | 2.7    | n.a.  | 3.3    | n.a.  |

Sources: Refinitiv, Metzler Research

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|      |  |
|------|--|
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|      |  |
|------|--|
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