

# Flash Analysis

Power, Renewables and Water



## Service for wind turbines

### Attractive and highly competitive – the O&M market in transition

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The maintenance and repair of wind turbines is a business worth billions. Turbine builders and independent suppliers are increasingly competing for market share.

The operation and maintenance (O&M) of wind turbines has become a dynamic market. In addition to established manufacturers (e.g. Siemens/Gamesa, GE, Vestas; known as OEMs), independent service providers (ISPs) have also been actively providing services for about 10 years.<sup>1</sup> With their entry to the market, the independent suppliers signalled the start of increased competition — a positive development for the wind farm operators who benefit from more transparent and lower prices as well as a greater selection. An average of around 40 per cent of wind turbines on the market are now maintained by ISPs, and the trend is rising.

The services offered range from basic to full maintenance contracts, the latter of which are popular because they generally guarantee technical availability of 97 per cent. The replacement of large components such as the gearbox, transformer, generator and main bearing is also included in the all-inclusive package, depending on the contract terms.

The value of the global onshore O&M market is currently estimated at USD 14 billion. As a result of the continuous expansion of wind capacity (from currently just under 500 GW worldwide to an estimated 700 GW in 2020) and the increasing age of the fleet, sector experts expect annual market growth of around 10 per cent over the next few years. In addition to above-average growth rates, provision of these services is an attractive business due to stable, predictable cash flows and attractive margins — in contrast to the pure sale of wind turbines. Here, sales volumes remain volatile and less lucrative (see table) in the existing market environment (high competitive pressure). It is therefore hardly surprising that OEMs have to defend their market shares from the increased competition of the past decade.

While a wind farm operator has the option of extending the contract at the end of the 5- to 20-year service contract, ISPs attract customers with favourable conditions, customised solutions and short communication channels. However, even during the term of the contract — at least after expiry of the two-year manufacturer's guarantee — switching providers may be advisable from the operator's point of view.<sup>2</sup> However, this presupposes that the contract allows variable termination options, which is not always the case: OEMs secure exclusivity through sophisticated contract packages (with terms of up to 25 years) and without the possibility of termination.

In addition to these very restrictive contracts, OEMs have recently also embarked on other ways of expanding their service business: the number of M&A activities has reached a considerable level in recent years. By acquiring the broadly positioned ISPs, individual OEMs were also

### Market overview: OEMs vs ISPs

### From basic to full maintenance

### Dynamic growth, high margins and stable cash flows ...

Company	EBIT margin FY 2016	
	Turbine Sales	O&M
Vestas	13.1%	
Nordex	4.2	14.1%
Senvion	5.1%	12.3%

Source: 2016 annual financial statements of the companies mentioned; own data

### ... spark the battle for market share.

### Acquisition of ISPs: higher market share, broader market coverage

1 OEM = Original Equipment Manufacturer; ISP = Independent Service Provider; O&M = operations and maintenance.

2 Of the almost 500 GW of wind capacity installed worldwide, an estimated 300 GW are out of warranty. According to analysts, the out-of-warranty market will reach around 500 GW by 2022.

able to secure broad market coverage. For example, after the acquisition of Availon and UpWind, Vestas is in fact able to maintain more than 50 per cent of the wind turbines installed worldwide (excluding China).

Target	Buyer	Date
Availon (DE) UpWind (US)	Vestas (DN)	Mar 2016 Dec 2015
NEM Solutions (ES) B9 Energy O&M (UK)	Gamesa (ES; 50% stake)	May 2016 Jul 2015
Connected Wind Services (DN)	EnBW (DE)	Oct 2016
Kenergia Sviluppo (IT)	BayWa AG (DE)	Jun 2016
Bazefield (NO)	Envision (CN)	May 2016
LotusWorks (IE)	Optinergy (IE)	Jul 2016

Source: The Wind Energy O&M Report 2017; own research

**Advantages and disadvantages of OEMs and ISPs**

While ISPs offer faster response times and lower prices for standard services thanks to their regional orientation and smaller overheads, the supply of spare parts for (large) components tends to be more expensive. In this aspect, OEMs achieve cost advantages due to higher order volumes. However, the supply of spare parts through ISPs is usually unproblematic, as most wind turbines have low vertical integration — another fact: OEMs also purchase between 50 and 85 per cent of the components from suppliers (exception: Enercon with vertical integration of around 90 per cent). ISPs thus have access to the same market as OEMs.

**Challenge: creation of documentation**

ISPs need about 1-2 years to create the necessary documentation for a wind turbine – OEMs are often accused of withholding technical data. As the technological complexity increases with each new generation of wind turbines, the head start of the OEMs continues to grow. It is therefore likely that ISPs will focus more on old systems in the future in order to reduce downtime and thus maintenance costs through optimisation.

**And what do customers say?**

Even though OEMs fell significantly behind the ISPs in the first few years, current figures say the opposite is true: according to an annual survey conducted by the German Wind Energy Association (Bundesverband Windenergie e.V.), OEMs achieved ratings of between 2.2 (Enercon) and 3.2 (Vestas), ISPs are between 1.5 (PSM) and 2.5 (Availon).<sup>3</sup>

**Third alternative: in-house O&M**

In addition to support from OEMs or ISPs, some operators (e.g. energy suppliers) are increasingly turning to in-house solutions. This approach is particularly widespread in the USA where around 80 per cent of the major operators resort to internal solutions. According to Duke Energy, cost savings of 25 to 35 per cent can be achieved after expiry of the manufacturer's warranty period. But the transition requires substantial investment. Many operators therefore opt for a hybrid solution: basic maintenance is carried out in-house, major interventions are outsourced.

**Conclusion**

The O&M market is profitable and offers growth potential for OEMs, ISPs and operators. The high margins ensure sufficient competition. Nonetheless, the tender-based remuneration for electricity from renewable energy sources with increasingly declining prices leads to rising cost pressure. It can be assumed that this will also affect the O&M business with declining margins and possible consolidations. At the same time, however, external requirements are also increasing, e.g. with regard to grid stability. The companies that keep pace with these developments will also be able to operate successfully in the O&M market in the medium to long term.

<sup>3</sup> The rating scale is based on the German school grading system from 1 to 6, where 1 is the best possible grade. Enercon, GE, Nordex, Senvion, Siemens and Vestas were covered on the OEM side, Availon, Deutsche Windtechnik, Enertrag, PSM and Wind Max on the ISP side.