EDISON

Windar Photonics

First day of dealings

Innovative and disruptive low-cost LIDAR

Alternative energy

Windar Photonics' admission to AIM provides investors with the opportunity to participate in the anticipated strong growth phase of this industrial technology company. Windar was created to commercialise an innovative low-cost, tower-mounted light detection and ranging (LIDAR) wind measurement system designed to increase wind turbine efficiency and reduce operational wear. With initial results showing that wind turbine energy efficiency can be increased by c 1-3%, payback of system installation can be as low as six months for a large 6MW system and around three years for the most frequently installed 1.5-2MW variants. Success will be determined by the rate at which new contracts can be won.

Year end	Revenue (€m)	PBT* (€m)	EPS* (€)	DPS (€)	P/E (x)	Yield (%)
12/13	0.1	(1.5)	(0.15)	0.00	N/A	N/A
12/14e	1.0	(2.1)	(0.10)	0.00	N/A	N/A
12/15e	5.7	(0.9)	(0.02)	0.00	N/A	N/A
12/16e	29.7	12.7	0.26	0.13	5.8	9.6

Note: *PBT and EPS are normalised, excluding intangible amortisation, exceptional items and share-based payments.

Increasing energy efficiency via turbine alignment

WIndar's LIDAR system, which is incorporated into the turbine's control system, works by measuring the approaching wind direction and speed through laser beams reflected by particles in the air utilising the Doppler effect. Energy efficiency can be improved by reducing yaw misalignment, thereby harvesting more power from the wind. Live tests utilising Windar's system on turbines have shown that a 3% increase in efficiency is achievable, with payback times typically ranging between six months and two years for the most common turbine types depending on electricity prices received. These payback times do not take into account any reduced maintenance costs due to associated load reductions.

Forecast based on modest system uptake

With initial sales achieved in 2014 and numerous systems undergoing trials, we present forecasts based on conservative penetration rates, initially in the retrofit market and increasingly through new-build OEM sales. Windar will use the £6m raised from a previous private and institutional funding round to invest in business development, manufacturing capacity and working capital to drive near-term growth targets.

Valuation range highlights the potential

Our valuation analysis is based on a DCF reflecting a series of potential outcomes related to market penetration and consequent volume benefits. We use a discount rate of 40% to reflect the early-stage nature of the business plan. This yields a range of fair values between £33m and £97m (83-242p/share). Any sales that increase confidence should act as a catalyst towards our mid-case fair value of £54m (135p/share).

30 March 2015

Price	**100p**
Market cap	**£38m**
Estimated net cash (€m) at end Dec 2014	5.6
Shares in issue	38.2m
Free float	16.35%
Code	WPHO
Primary exchange	AIM
Secondary exchange	N/A

Business description

Windar Photonics is a UK-registered, Copenhagen-based developer and manufacturer of an innovative low-cost light detection and ranging (LIDAR) system. Approaching wind direction and speed is measured ahead of a wind turbine, allowing appropriate yaw alignment, increasing efficiency.

Next events

FY14 results	Q2 2015

Analyst

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Edison profile page

Investment summary: Innovative and disruptive LIDAR

Company description: Innovative low-cost LIDAR

Windar Photonics was created from technology developed by founder Jørgen Korsgaard Jensen, through OPDI Technologies and the Danish Technical University (DTU) to develop and commercialise a low-cost light detection and ranging (LIDAR) system called WindEye. This sits on top of a wind turbine to provide forward-looking wind direction measurement to allow efficient yaw control of operational turbines, providing increased power output and reduced load. The competitive advantage of the system is its low cost, some 70% below existing systems, which provides payback times that are attractive to drive commercial uptake of the system.

Valuation: Dependent on growth assumptions

Given the early-stage nature of Windar, we have considered a range of possible scenarios on which to base a DCF fair value, using a discount rate of 40% and terminal growth of 2%:

- **Low scenario.** In our low case, we forecast conservative sales from 2014 based on small market share gains, to reach c 2,000 systems in 2017. This yields a fair value of £33m.
- **Base case scenario.** Our base case forecast scenario envisages a ramp-up in sales to c 4,000 systems pa by 2017. This yields a fair value of £54m.
- **High scenario.** Given the potentially disruptive nature of WindEye, we have also modelled an accelerated scenario of c 8,500 systems by 2017. This yields a fair value of £97m.

Catalysts for an uplift in our assumptions would be the announcement of firm orders, progress on OEM relationships or product development activities.

Financials: Transformed with fund-raising

Windar successfully concluded an EIS and institutional investment round of £6m in December 2014 and was introduced to AIM on 30 March 2015. Proceeds will be used to fund an increase in business development personnel, the opening of a new leased office and production facility in Copenhagen and for general working capital purposes. As at 30 September 2014, the group generated nine-month revenues of DKK5.9m (€793k) from delivery of WindEye sensors for installation to both wind park operators and original equipment manufacturers (OEMs).

Sensitivities: Related to commercial success

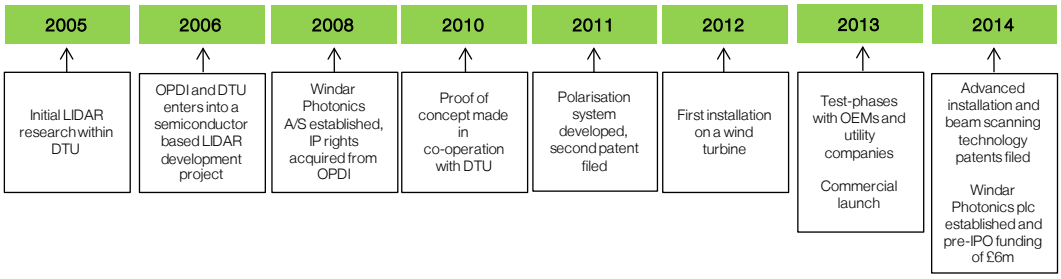
To fully commercialise the technology and achieve substantial scale and value Windar needs to manage a number of sensitivities:

- **Regulatory/policy impact on wind industry.** Wind turbine production and wind farm economics is in many instances driven by regulation and subsidy policies.
- **Production and supplier base.** Windar outsources production of the majority of components with final assembly and integration testing undertaken by Windar. The existing facility could handle c 400 systems pa with just two production employees. Windar is certified to quality standards, including ISO 9001:2008, ISO 14001 and DS/OHSAS 18001:2008.
- **Competing systems and technology.** Any further development by competitors and/or a new competing technology could affect WindEye's commercial success rate.
- **Shareholder post-IPO lock-ins – potential stock overhang.** Shareholders representing approximately 83.63% of issued share capital have undertaken, save in limited circumstances or with the prior consent of the company and the Nomad, not to dispose of shares for a period of one year and for a further six months to sell through the Nomad.

Company description: Development to deployment

Windar Photonics was created from technology co-developed by founder Jørgen Korsgaard Jensen and the DTU to develop and commercialise a low-cost light detection and ranging (LIDAR) system called WindEye. This is designed to sit on top of a wind turbine to provide forward-looking wind direction measurement to allow efficient yaw control of operational turbines, providing increased power output and reduced load. The differentiator of the system is its use of a low-cost, all-semiconductor light source and simple, robust design, allowing a significantly lower cost of production and a price in the market >70% cheaper than larger, more complex systems currently available. Exhibit 1 below shows the timeline of the company's development:

Exhibit 1: Windar Photonics development timeline



Source: Edison Investment Research

Windar undertook an Enterprise Investment Scheme (EIS) funding round and subsequent institutional financing round between August and December 2014, raising £6m at 100p/share and was admitted to AIM on 30 March 2015. The proceeds from the prior raise are being used to support the corporate development of the company as it scales up its commercial effort, increasing headcount, strengthening the balance sheet and the lease of a new, larger facility in Copenhagen.

LIDAR allows accurate measurement of approaching wind

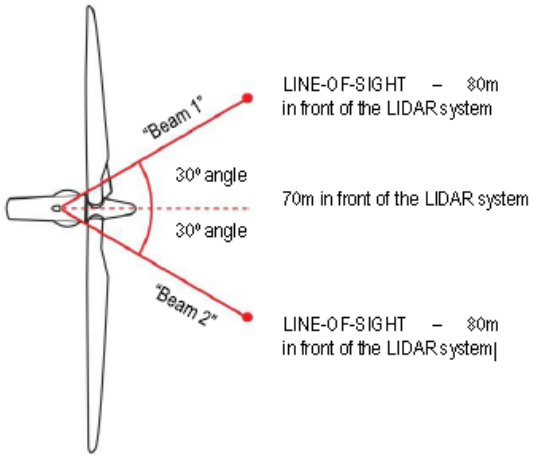
LIDAR has been around since the 1970s and operates by measuring reflections caused by particles in the air from a low-power laser beam fired out of an optical box mounted on the turbine. As these particles move, the LIDAR system uses algorithms to calculate the speed and direction of the wind using the Doppler effect. Exhibit 2 shows the constituents of Windar's LIDAR systems, WindEye.

Exhibit 2: Windar Photonics' WindEye LIDAR System

Source: Windar Photonics

Exhibits 3 and 4 below show the principle of how the WindEye system operates when mounted on a turbine, which includes a WindSwitch electronics box that easily integrates into the turbine's existing control software in retrofit markets.

Exhibit 3:Two-beam measurement at 80m



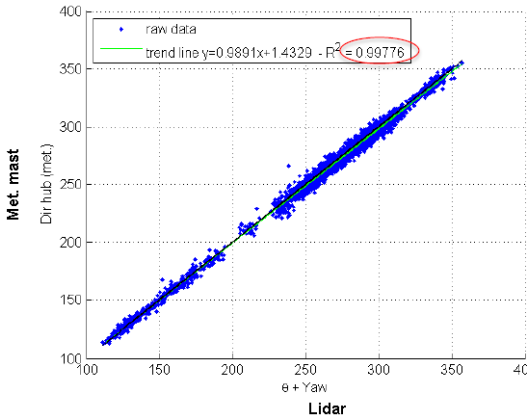
Source: Windar Photonics

Exhibit 4: Example installation on Vestas 2MW Turbine

Source: Windar Photonics

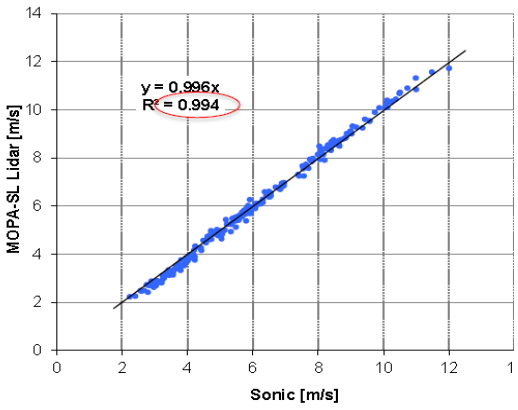
Tests have shown that Windar's WindEye system provides highly correlated results compared to other traditional wind sensors as shown in Exhibits 5 and 6 below.

Exhibit 5: Lidar direction data vs met mast



Source: Windar Photonics

Exhibit 6: Lidar windspeed vs sonic sensor



Source: Windar Photonics

WindEye operates to supplement and augment existing wind sensors that are already installed, improving intelligence about the incoming wind.

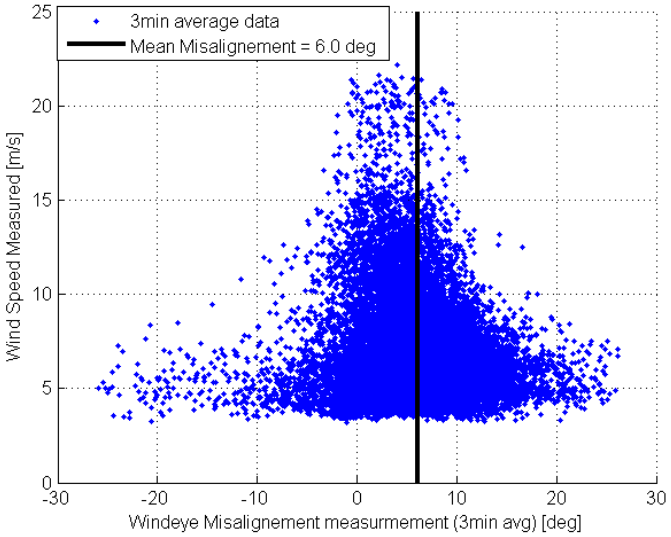
Enables reduced yaw misalignment and increased efficiency

Windar's WindEye system provides turbine operators with forward-looking wind direction and wind speed data in real time. This allows the turbine to be reorientated using the tower's control system to ensure it is head on to the incoming wind, increasing efficiency and enabling greater power to be produced and reduced load, lowering maintenance expenditure. This compares to existing technology where wind measurements are taken behind the turbine in an area of unsettled flow that makes accurate readings difficult and subject to numerous assumption errors in the control system.

Windar's system was tested on a wide range of wind turbine types and power ratings to identify the potential efficiency improvements that could be achieved by using WindEye measurements rather

than just the existing behind turbine measurements. Exhibit 7 below shows actual scatter graph data of yaw misalignment measurements for a 3.6MW wind turbine over a two-month period.

Exhibit 7: Scatter chart of wind measurement using SCADA versus WindEye



Source: Windar Photonics test results on a 3.6MW turbine over a two-month timeframe

In the case above, the use of Windar's LIDAR and control mechanism could considerably reduce misalignment, improving energy efficiency and allowing an enhanced power output. Exhibit 8 below highlights real test result data recorded for a 3.6MW turbine.

Exhibit 8: Comparison of turbine efficiency using actual test data over six months

	Energy (MWh)
Energy produced using SCADA data	1,468.8
Energy produced if perfectly aligned	1,520.5
Energy produced using yaw algorithm	1,502.5
Energy gain using yaw algorithm	35.0
% energy gain if using Lidar instead of SCADA	2.38%
Maximum % energy gain if perfectly aligned	3.52%

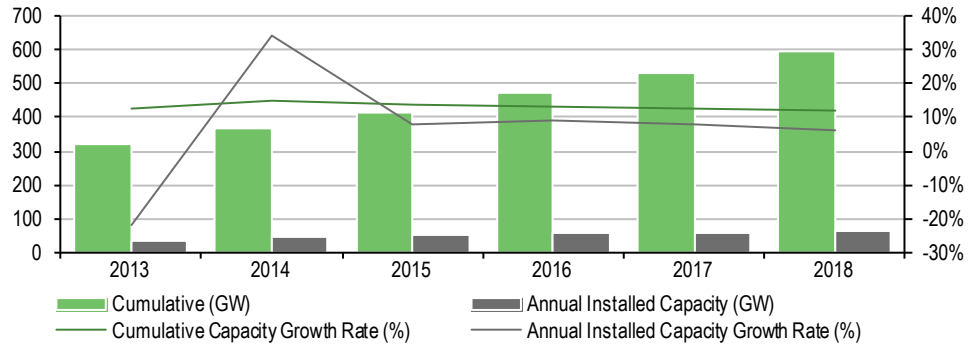
Source: Windar Photonics test data

In addition to the immediate efficiency increase potential due to an improved yaw alignment of the wind turbine, forward-looking pitch control can also reduce excessive loads on the blades, thereby reducing associated wear, increasing the potential life of the turbine components and lowering maintenance costs. Third-party testing has shown that forward-looking LIDAR sensors can reduce strain on vital components by up to 14%. This benefit is currently not factored into any payback scenarios presented. Windar is planning to enhance the system to improve data collection, analysis and more active control.

Market opportunity in both installed and new-build turbines

The core underlying market for Windar's system is the wind turbine market, which is forecast to continue to grow as energy policies across the globe demand increased contributions from renewables and where wind power is an established and proven technology. According to the Global Wind Energy Council (GWEC), there was 318GW of globally installed wind capacity in 2013 and this is forecast to grow at c 13% pa as shown in Exhibit 9 below.

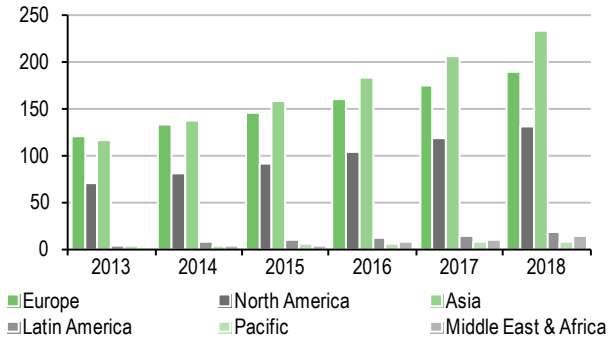
Exhibit 9: Global wind energy market forecast 2014-18 (left-hand side GW, right-hand %)



Source: Global Wind Energy Council

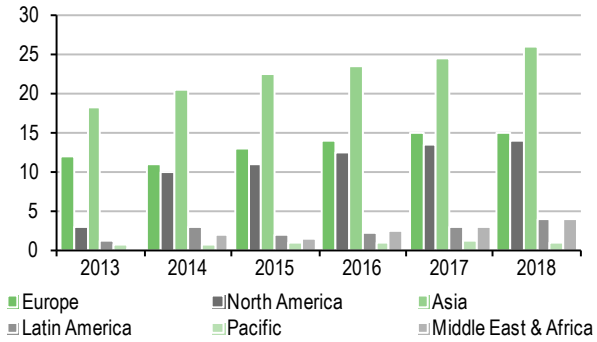
Assuming that the current average turbine rating is 2.5MW, this equates to an installed number of turbines in the region of 130,000, with approximately 19,000 new turbines delivered pa. While the global installed capacity is forecast to grow by c 13% pa, the regional split of current and forecast capacity varies considerably as shown in Exhibits 10 and 11 below.

Exhibit 10: Cumulative installed capacity by region



Source: GWEC

Exhibit 11: Annual installed capacity by region



Source: GWEC

As can be seen, in 2013 Europe had the largest installed turbine capacity, but with Asia forecast to add c 50% more capacity pa than Europe over the next five years, this has become the largest wind energy market in 2014. Increased installation in the Chinese market is the major contributor to Asian market growth. After a lull in 2013 driven by previous uncertainty surrounding production tax credits, the North American market is forecast to recommence growth, highlighting the potential impact of regulatory and fiscal policies on new-build rates.

Market opportunities and partnerships

Windar has identified two sources of market opportunity for the company:

- installed base where customers will typically be asset owners/operators; and
- OEM relationships to get LIDAR in-designed to control systems.

Windar currently has systems in operation on a wide variety of turbine types, for different customers and in different regions of the world. For each turbine type and rating, management has identified the total potential market of each system. Using a combination of this and a proprietary database of currently installed systems, a business development priority list has been created to ensure that the most appropriate opportunities are being pursued during the initial build-up phase in the most efficient manner. To address these opportunities, Windar has established relationships with a number of key partners to drive sales growth in various geographic regions:

- **China/Asia.** Windar has access to the Chinese market via an exclusive distribution agreement with LSAP Holdings AG (known as TRES Wind), based in Switzerland. TRES Wind has in turn a strong collaboration with Shanghai Taisheng Wind Power Equipment Co (TSP). TSP is a leading wind turbine tower manufacturer in China with production facilities in country. The distributor agreement also extends to India, New Zealand and Australia. China is the global leader in the wind park sphere and consequently Windar has identified the retrofit market in China as a key opportunity.
- **Europe/US.** Future maintenance and support services in Europe and North America will be carried out by Availon United Wind Service, an established independent service provider (ISP) based in Germany with a presence also in Italy, Spain and the US through offices in Des Moines and Houston. Current installation has been handled thus far by Windar engineers.

Windar has also created direct sales relationships with the OEMs where the sales and technology threshold is anticipated to be higher to achieve a position on new-build equipment. Likewise, the group works with a wide range of design offices that provide testing, certification and advisory services. Part of the proceeds from the fund-raising will go to building its sales reps in the US, Canada, Europe and China.

Success already achieved

To date, Windar has achieved success in selling systems for initial trials, data verification and subsequent installation and control integration across all targeted regions to both wind park operators and OEMs. For example, Windar has supplied two of the top 23 wind park operators in the Americas by market share, three of the top 17 in Europe, and four of the top 23 operators in Asia. In addition, it has also supplied systems to four of the top 10 turbine manufacturers across the globe. Windar is forecast to have reached its targeted revenue of slightly above €1m in 2014.

Competitive environment of extremes

The competitive environment in which Windar operates can be characterised by two extremes: one where the operator relies on measurements from traditional, simple wind direction and speed devices mounted behind the turbine with the associated difficulties that presents; and another where a LIDAR system is already used to provide such measurement. Current LIDAR systems tend to have been designed using expensive laser light sources and typically have many rotating and moving parts to achieve a high-fidelity measurement. Exhibit 12 below highlights the main competitors operating within the LIDAR space.

Exhibit 12: LIDAR competitive environment

	Galion	ZephIR	LeoSphere	Avent	Pentalum	Windar Photonics
Product name	Galion	Zephir	Windcube	Windiris	Spidar	WindEye
Nationality	UK	UK	France	France	Israel	Denmark
Ownership	SGURR, UK	Natural Power, UK	Leosphere, France	Leosphere, France NRG, US	Cedar, Evergreen, Drager, Jurvetson, Bright Capital, GE, ABB	Various Partners, AIM-listed
Estimated price range	c €180k	c €140k	c €150k	c €100k	c €70k	<€25k
Measurement distance	4,000m	300m	300m	250m	200m	80m
Laser type	Pulsed Wave	Continuous Wave	Pulsed Wave	Pulsed Wave	Pulsed Wave	Continuous Wave
Size (mm)	840x660x660	800x400x400	543x552x540	810x540x330	964x1,139x1,183	400x300x200
Weight	85kg	55kg	45kg	67kg	60kg	24kg
Temp range	-15 to +35ºC	-40 to +50ºC	-45 to +50ºC	-30 to +60ºC	-30 to +50ºC	-40 to +55ºC

Source: Windar Photonics, Edison Investment Research

As can be seen, Windar's WindEye system sits at a substantial price discount to peers and this provides a strong competitive advantage as multiple systems can be purchased to cover a greater

proportion of turbines in a wind park for an equivalent price to a single competitor system, which could be a single ground-based LIDAR covering a section of turbines on an aggregated basis.

Windar has been able to achieve the relative low pricing point by designing its LIDAR to be turbine mounted using low-cost but rugged components from initial concept, whereas many other systems have been developed from ground-based, expensive high-fidelity technology. The low cost is largely achieved by using an all-semiconductor laser instead of relatively expensive fibre amplified lasers. In addition, the system has no rotating parts, reducing maintenance to a minimum enabling replacement of the laser once every two years in line with servicing other nacelle-based equipment.

Windar has a series of patents for the use of a semiconductor laser in a LIDAR wind sensor in Russia (2013), the US (2014) and Europe (2015) with applications filed and pending in India, China and Japan. The use of the all-semiconductor laser in the WindEye sensor was developed in partnership between OPDI Technologies and the DTU in Roskilde, Denmark. The DTU further holds a patent registered in the US relating to the combination of LIDAR sensors and wind turbine control, which Windar Photonics A/S is licenced to use under a freedom-to-operate agreement with DTU, allowing the product to be integrated into a wind turbine in the US.

The group has a strategy to file patent applications on new inventions that will typically cover the EU, US, Russia, India, China and Japan. Further applications have been filed covering circulator-based LIDAR wind sensors (2012), advanced installation technology for precise installation of sensors on wind turbines (2014), and beam-scanning technology for LIDAR wind sensors (2014).

Payback for operators based on energy efficiency gains

Windar targets wind turbines across the power spectrum from <1mW to the largest 6mW turbines designed for offshore use. The payback period for an operator of a turbine will depend on a wide range of parameters based on power rating, average yaw misalignment, price of electricity and any subsidy regimes. For a case under a typical European feed-in tariff regime, the payback time varies by turbine size, as shown in Exhibit 13 below depending on the achieved efficiency increase.

Exhibit 13: Payback times at rates of energy efficiency increase, 25% load factor and FIT of €75/MWh (years)

	750kW	1.0MW	1.5MW	2.0MW	3.0MW	3.6MW	5.0MW	6.0MW
1.5%	11.4	8.5	5.7	4.3	2.8	2.4	1.7	1.4
2.0%	8.5	6.4	4.3	3.2	2.1	1.8	1.3	1.1
3.0%	5.7	4.3	2.8	2.1	1.4	1.2	0.9	0.7
4.0%	4.3	3.2	2.1	1.6	1.1	0.9	0.6	0.5

Source: Windar Photonics

As can be seen, the larger the turbine, the quicker the payback period, although the payback period is within attractive ranges for most scenarios involving 2.0MW turbines upwards. 1.5MW and 2.0MW turbines account for the greatest proportion of the current globally installed turbine fleet, providing a substantial retrofit opportunity. We believe that the assumptions used in this comparison are conservative in nature with load factors and FITs often, for example in the UK where onshore load factors can be 30% and offshore up to 40%. In all cases above, no account has been taken of the potential for reduced maintenance costs of lower loading of the turbines due to reduced misalignment and stresses on the blades, gearbox and associated components.

Management board further strengthened on listing

The management board consists of founder and COO Jørgen Korsgaard Jensen, CEO Martin Rambusch, as well as NEDs Johan Blach Petersen and Niels Vejrup Carlsen. The existing board was augmented by the appointment of chairman John Weston, the former CEO of BAE Systems (1998-2002), who has subsequently held the position of chairman at a series of early-stage development and commercialisation technology businesses. Simon Barrell was also appointed as

senior NED, a chartered accountant who brings substantial financial experience, previously as FD of Napier Brown Foods, as well as a NED and chairman of a number of public companies.

Sensitivities related to commercial uptake

Windar needs to manage a number of sensitivities to achieve its plans to fully commercialise the technology and achieve substantial scale and value:

- **Regulatory/policy impact on wind industry.** Wind turbine production and wind farm economics are in many instances driven by regulation and subsidy policies. Recognising this fact, Windar has created a target database of all operating turbines by operator, type, rating and location, which enables a targeted sales approach where payback times are best.
- **Production capability and capacity.** Having visited the production facility in Copenhagen and witnessed final assembly and test of the WindEye system, we can confirm that part of the beauty is the simplicity of the system and the extensive use of widely available components and materials. In terms of capacity, the existing facility could handle somewhere in the region of c 400 systems pa with just two production employees.
- **Supplier base.** Windar outsources production of the majority of components with final assembly and integration testing being undertaken at its operations in Denmark. The cost of these components varies considerably with increased volumes and as such Windar expects to benefit from reduced unit costs as revenues increase. No single supplier accounts for more than 25% of the group's input cost.
- **Competing systems and technology.** Just as Windar has provided a potentially disruptive technology into the market, any further development by competitors and/or a new competing technology could affect the rate of commercial success of Windeye.
- **Shareholder post-IPO lock-ins – potential stock overhang.** Shareholders representing approximately 83.63% of issued share capital have undertaken, save in limited circumstances or with the prior consent of the Company and the Nomad, not to dispose of shares for a period of one year and for a further six months to sell through the Nomad.
- **Warranties/system failure.** Quality is critical to the group and Windar is certified to quality standards including DS/EN ISO 9001:2008, ISO 14001 and DS/OHSAS 18001:2008. A two-year warranty is provided and there have been no claims made thus far.

Valuation dependent on growth assumptions

Given the early-stage nature of Windar, we believe that relative peer rating valuation techniques are unsuitable and have therefore derived a DCF valuation out to 2023 based on a range of possible scenarios. We consider three scenarios dependent on the rate of market penetration:

- **Low scenario.** In our low case, we assume that Windar achieves a conservative level of sales from 2014 onwards based on small market share gains, reaching c 2,000 systems by 2017. Employees increase to 35 by 2017, rising steadily thereafter. Net change in working capital increases steadily to €0.8m at this stage, while spend on capex and technology investment rises to €0.5m, reflecting additional test equipment.
- **Base scenario.** Our base case forecast scenario envisages a quicker yet still modest ramp-up in sales to c 4,000 systems by 2017 based on improved market share gains. Employees increase to 63 by 2017. Net change in working capital increases to €2.7m in 2017, while spend on capex and technology investment rises to €1.0m reflecting additional test equipment.
- **High scenario.** Given the potentially disruptive nature of the WindEye system, we have modelled an accelerated scenario in which market share gains allow Windar to achieve c 8,500

systems pa by 2017 and expand to a larger end-market penetration rate. Employees increase to 90 by 2017. Net change in working capital increases to €3.4m in 2017, while spend on capex and technology investment rises to €2.0m reflecting additional test equipment.

Exhibit 14 shows our assumed market win rates in each scenario using GWEC market forecast data. In our base and high cases, peak penetration rates are achieved by 2019 with growth thereafter at market growth rates:

Exhibit 14: Forecast market share win rates in Edison DCF scenarios

		2014e	2015e	2016e	2017e	2018e	2019e	2020e	2021e	2022e	2023e
Retrofit	Low	0.0%	0.1%	0.3%	0.5%	0.8%	1.0%	1.1%	1.2%	1.3%	1.4%
	Mid	0.1%	0.2%	0.6%	1.0%	1.6%	2.0%	2.0%	2.0%	2.0%	2.0%
	High	0.1%	0.5%	1.0%	3.0%	4.0%	5.0%	5.0%	5.0%	5.0%	5.0%
OEM	Low	0.0%	0.3%	1.5%	4.0%	7.5%	10.0%	10.0%	10.0%	10.0%	10.0%
	Mid	0.0%	0.5%	3.0%	8.0%	12.0%	15.0%	15.0%	15.0%	15.0%	15.0%
	High	0.1%	0.8%	5.0%	10.0%	20.0%	25.0%	25.0%	25.0%	25.0%	25.0%

Source: Edison Investment Research

Running our financial model assuming a selling price <€25k for each of these scenarios, a tax rate of 23% and a discount rate of 40% due to the early-stage nature and a terminal growth rate of 2% yields a fair value between £33m and £97m (83-242p/share) as shown in Exhibit 15, with our forecast base case scenario suggesting a current fair value of £54m (135p/share) under these assumptions. This also shows sensitivities to assumed discount and terminal growth rates.

Exhibit 15: Edison DCF valuation using a range of forecast scenarios

		Low case				Base case				High case		
		Discount rate				Discount rate				Discount rate		
		30.0%	40.0%	50.0%		30.0%	40.0%	50.0%		30.0%	40.0%	50.0%
Terminal growth	0.0%	57.1	33.0	21.4	0.0%	89.8	53.6	35.5	0.0%	170.5	96.2	60.4
	1.0%	57.7	33.2	21.5	1.0%	90.6	53.8	35.5	1.0%	172.0	96.6	60.6
	2.0%	58.4	33.4	21.6	2.0%	91.5	54.1	35.6	2.0%	173.6	97.0	60.7
	3.0%	59.1	33.6	21.6	3.0%	92.5	54.4	35.7	3.0%	175.4	97.4	60.8
	4.0%	59.9	33.8	21.7	4.0%	93.6	54.6	35.8	4.0%	177.2	97.9	61.0

Source: Edison Investment Research

The introduction price of 100p/share (market cap £38m), implies a valuation largely supported by our base case scenario, constructed using conservative assumptions, at a discount rate closer to 50% to reflect the early-stage nature of the business plan. We feel that catalysts for an uplift in our assumptions would be the announcement of further firm orders, progress on OEM relationships or new product development activities.

Financials supported by recent funding rounds

Given the market opportunity and stage of growth of the business, Windar decided to undergo a funding round and list on AIM to provide growth capital in anticipation of an increase in order flow. This was successfully concluded through a combination of an EIS investment round of £3.9m and an institutional round of £2m to raise a total of £6m between August and December 2014 to fund an increase in business development personnel, the opening of a new office and production facility in Copenhagen, to strengthen the balance sheet and for general working capital purposes. The admission to AIM is designed to raise the group's profile, provide flexibility for further growth both through acquisition and potential access to capital and recruitment of key employees.

Earnings visibility still at early stage

Earnings visibility is still at a very early stage, with results largely dependent on Windar's ability to secure new sales and deliver against forecast market share gains. We forecast small incremental wins in 2015, followed by our base case scenario based on a combination of market share gains

driven by increased sales activity and a ramp-up in distributor relationships, in particular in the Chinese retrofit market in the near term. We forecast that costs will increase as more personnel are hired, while unit costs will improve as volume increases over time. Any slippage in deliveries or win rates is likely to affect the rate of profit and earnings growth. The group's stated dividend policy is that after the year ended 31 December 2015, it expects to pay at least 50% of annual net distributable profits (to the extent there are any) by way of a final dividend.

Exhibit 16: Financial summary

€'000	2012	2013	2014e	2015e	2016e	2017e	2018e
Year-end 31 December	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
PROFIT & LOSS							
Revenue	0	74	1,035	5,679	29,686	57,669	97,116
Cost of Sales	0	(44)	(711)	(2,897)	(11,430)	(18,637)	(28,252)
Gross Profit	0	30	324	2,782	18,256	39,031	68,864
EBITDA	(422)	(1,044)	(1,656)	(418)	13,231	31,176	57,452
Operating Profit (before amort. and except.)	(427)	(1,358)	(1,986)	(838)	12,691	30,516	56,672
Intangible Amortisation	0	0	0	0	0	0	0
Exceptionals	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
Operating Profit	(427)	(1,358)	(1,986)	(838)	12,691	30,516	56,672
Net Interest	(40)	(94)	(120)	(67)	15	38	76
Profit Before Tax (norm)	(467)	(1,451)	(2,106)	(905)	12,706	30,554	56,748
Profit Before Tax (FRS 3)	(467)	(1,451)	(2,106)	(905)	12,706	30,554	56,748
Tax	95	118	464	200	(2,800)	(6,750)	(12,500)
Profit After Tax (norm)	(373)	(1,333)	(1,642)	(705)	9,906	23,804	44,248
Profit After Tax (FRS 3)	(373)	(1,333)	(1,642)	(705)	9,906	23,804	44,248
Average Number of Shares Outstanding (m)	8.2	8.9	16.4	38.2	38.2	38.2	38.2
EPS - normalised (€)	(0.0)	(0.15)	(0.10)	(0.02)	0.26	0.62	1.16
EPS - normalised fully diluted (€)	(0.0)	(0.15)	(0.10)	(0.02)	0.26	0.62	1.16
EPS - (IFRS) (€)	(0.0)	(0.15)	(0.10)	(0.02)	0.26	0.62	1.16
Dividend per share (€)	0.0	0.0	0.0	0.0	0.1	0.3	0.6
Gross Margin (%)	NA	40.3	31.3	49.0	61.5	67.7	70.9
EBITDA Margin (%)	NA	-1409.2	-160.0	-7.4	44.6	54.1	59.2
Operating Margin (before GW and except.) (%)	NA	-1831.8	-191.9	-14.8	42.7	52.9	58.4
BALANCE SHEET							
Fixed Assets	1,536	1,285	1,140	1,120	1,320	1,670	2,070
Intangible Assets	1,510	1,257	1,097	877	777	727	627
Tangible Assets	15	17	32	232	532	932	1,432
Investments	11	11	11	11	11	11	11
Current Assets	825	640	6,545	5,660	15,066	33,167	64,563
Stocks	52	147	727	927	1,977	3,827	6,327
Debtors	252	239	239	439	789	1,239	1,989
Cash	508	249	5,574	4,289	12,295	28,097	56,242
Other	12	5	5	5	5	5	5
Current Liabilities	(287)	(320)	(320)	(120)	180	580	1,130
Creditors	(287)	(320)	(320)	(120)	180	580	1,130
Short-term borrowings	0	0	0	0	0	0	0
Long-Term Liabilities	(571)	(1,436)	0	0	0	0	0
Long-term borrowings	0	0	0	0	0	0	0
Other long-term liabilities	(571)	(1,436)	0	0	0	0	0
Net Assets	1,503	170	7,366	6,661	16,566	35,418	67,764
CASH FLOW							
Operating Cash Flow	(375)	(1,095)	(2,266)	(1,018)	11,591	28,666	53,972
Net Interest	(40)	(1)	(120)	(67)	15	38	76
Tax	0	95	464	200	(2,800)	(6,750)	(12,500)
Capex	(32)	(8)	(15)	(200)	(300)	(400)	(500)
Acquisitions/disposals	(282)	(55)	(140)	(200)	(500)	(800)	(1,000)
Financing	536	0	8,040	0	0	0	0
Dividends	0	0	0	0	0	(4,953)	(11,902)
Net Cash Flow	(192)	(1,064)	5,963	(1,285)	8,006	15,802	28,146
Opening net debt/(cash)	(130)	(508)	(249)	(5,574)	(4,289)	(12,295)	(28,097)
HP finance leases initiated	0	0	0	0	0	0	0
Other	571	805	(638)	(0)	0	0	(0)
Closing net debt/(cash)	(508)	(249)	(5,574)	(4,289)	(12,295)	(28,097)	(56,242)

Source: Company accounts, Edison Investment Research

Contact details	Revenue by geography
3 More London Riverside London SE1 2AQ UK +45 2055 5599 www.investor.windarphotonics.com	N/A

CAGR metrics		Profitability metrics		Balance sheet metrics		Sensitivities evaluation	
EPS 13-17e	N/A	ROCE 13	N/A	Gearing 13	N/A	Litigation/regulatory	◖
EPS 15-17e	N/A	Avg ROCE YY-YYe	N/A	Interest cover 13	N/A	Pensions	◖
EBITDA 13-17e	N/A	ROE 13	N/A	CA/CL 13	N/A	Currency	◖
EBITDA 15-17e	N/A	Gross margin 13	N/A	Stock days 13	N/A	Stock overhang	●
Sales 13-17e	428%	Operating margin 13	N/A	Debtor days 13	N/A	Interest rates	○
Sales 15-17e	219%	Gr mgn / Op mgn 13	N/A	Creditor days 13	N/A	Oil/commodity prices	◖

Management team

CEO: Martin Rambusch

Martin Rambusch has worked in the wind turbine industry for more than 17 years. He was the former CEO of Svendborg Brakes, which he was successful in selling to the UK private equity firm Doughty Hanson for €460m. Before this he was the CEO of Dansk Synergi. Martin has been involved in several acquisitions and turnarounds of smaller Danish companies.

CTO and founder: Jørgen Korsgaard Jensen

Jørgen is an expert in optical technology solutions and has been involved in R&D projects in collaboration with Risø DTU for 12 years. He previously held leading positions in international companies across strategy, finance, purchasing and logistics. He is also CEO and founder of OPDI Technologies, which develops and markets intelligent photonic sensors for IT and 'smart' energy solutions. Before this he was the CEO and founder of Karnitech International, CFO of Gram, CFO of Glasuld (Saint Gobain) and CFO of Farre Food.

Chairman: John Weston

John Weston worked in the aerospace and defence industry for 32 years, predominantly with BAE Systems where he ultimately became chief executive, leading a group with $20bn in sales, employing 120,000 people. John's previous chairmanships include Acra Controls, AWS Electronics, Insensys, Inbis, iSOFT and Spirent and he currently acts as chairman of Fibercore, Accesso Technology Group and MB Aerospace Holdings, as well as being appointed a non-executive director of Torotrack. He is a VP of the Royal United Services Institute. He has previously served on the council of the Royal Academy of Engineering, and the Prime Minister's council for science and technology. In addition to his CBE, he is also a Commander of the Order of the Pole Star (Sweden) and a freeman of the City of London.

Principal shareholders (as at 23 March 2015)	(%)
SEED Capital Denmark II K/S	18.51
Sinika Limited	18.14
DTU Symbion Innovation A/S	10.94
M.M. 26 Holding A/S	10.57
Danmarks Tekniske Universitet	6.17
Milton Holding Horsens A/S	5.55
Artemis Investment Management LLP	5.24
J Blach Petersen BD A/S	5.10
Investeringsselskabet af 11 august 2005	4.35

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