

Business Overview

ESTABLISHED: 2013

(City Windmills Ltd: 2010)

City Windmills Ltd, a 100% subsidiary, was listed on the First Quotation Board of Xetra (Frankfurt Stock Exchange) in 2011. The First Quotation Board was closed in December 2012

LOCATION: London, UK

LISTING: Unlisted. In process of applying for ISDX Growth market segment listing, previously listed on GXG Markets, which closed in August 2015

NUMBER OF EMPLOYEES: 1-10

BUSINESS AREA:

Renewable Energy: Manufacturer and installer of vertical axis micro wind-turbines

COMPANY WEBSITE:

www.citywindmills.com

BUSINESS OVERVIEW

City Windmills Holdings plc (“City Windmills”) has developed the connectional design of a micro wind turbine, which runs on a vertical axis. The company is in the process of commencing the commercial roll out of various sized prototype generators meant for residential, commercial and industrial use in urban and off-grid environments as well as for lighting.

City Windmills is intending to sell the turbine outright or install it under electricity purchase agreements where the customer agrees to purchase electricity over a period of time at a set price. The company has operations in the US, UK and Switzerland.

City Windmills currently offers four main variants of its small-scale wind power generation system:

The CW 500 is designed for residential rooftop applications, offering energy security and reduced electricity costs for households;

The CW 1000 is designed for medium scale deployment on commercial building rooftops;

The CW 2000 is the largest capacity generator produced by City Windmills and is designed for large-scale industrial electricity generation on rooftops or ground installations;

CW Lighting is a stand alone self-sustaining LED lighting solution designed to provide low cost lighting in off-grid locations. City Windmills offers an alternative to solid or liquid fuel, or solar, based off-grid lighting solutions.

City Windmills is currently trialling a wind powered lighting solution in collaboration with Baylor University in the USA.

BUSINESS HIGHLIGHTS

City Windmills’ objective is to become a world leader in small wind turbines for commercial buildings and households. City Windmills believes that home and business owners will embrace small wind turbine technology if the economics work for them. The company believes that its technology is capable of being deployed discreetly and cost effectively in urban environments or in remote locations beyond the reach of national electricity grids. The company has secured design protection in its core markets (US, EU and Switzerland) and is seeking protection in Asia / Japan.

City Windmills’ USP is the modularity and scalability of its technology as well as its intention to offer flexibility in installation and financing arrangements together with partner organisations to address needs of its customers. The company recently won a contract to supply power for 25 years at 5 cents per kWh from 5 turbines via its industrial wind generators to Bimbo Bakeries, one of the largest bakery companies in the US. City Windmills aims to deliver electricity to household scale customers at an average cost of £0.06 (US\$0.10) per kWh.

Social Impact

SOCIAL MISSION

City Windmills' core social and environmental contributions derive directly from the environmental performance of its products. The company's mission is to "provide a renewable, scalable, and genuinely sustainable energy source as an independent, economic and competitive alternative to fossil fuels - thus ensuring energy security for the consumer and safeguarding the environment for future generations".

The City Windmills system aims to enable more effective deployment of wind generators. Its turbine uses an innovative vertical axis chimney height design that can be mounted on rooftops. The design is supposed to take advantage of accelerated wind over the roof of a building ('roof-top' effect) which can lead to increased electricity generation and potentially provide electricity at lower costs than rooftop photovoltaic systems.

City Windmills' generators are silent, can be deployed un-obtrusively on rooftops, and promise to significantly reduce the risk to wildlife posed by conventional horizontal rotor wind power systems.

Small-scale wind turbines offer advantages over diesel generators or co-generators in urban environments where air pollution remains a major challenge and is the subject of increasing regulation. Deployed in rural and remote areas small-scale wind turbines can provide a source of electricity that supports economic development in these regions, also offering a solution to temporary interruption of electricity networks due to natural disasters or electricity network problems.

Lighting solutions based on renewable energy technology can displace the use of solid and liquid fuelled lighting in developing countries, along with its associated environmental and health problems. An estimated 1.4 billion people worldwide rely on fuel (predominantly kerosene) based lighting, with a range of negative effects including increased exposure to toxic particulate matter air pollution, accidental burns and the release of black carbon, a potent short lived greenhouse gas¹ (CCAC, 2014). Furthermore, fuel based lighting typically offers insufficient illumination to enable the provision of education for children (ibid).

WHO BENEFITS?

The primary beneficiary is the natural environment, through reduction of CO₂ in the atmosphere by replacing fossil fuel generation with renewable energy. Each kWh of fossil fuel generated electricity that is displaced by clean and renewable wind power, contributes to reducing the far-reaching effects of climate change on ecosystems. City Windmills estimates that its products can reduce greenhouse gas emissions compared to grid electricity by an average of 86% in the UK.

Additionally, homeowners and business owners, who are the end user of the products, might benefit through lower prices. In the case of homeowners, the company estimates that the price saving could be 57% per kWh of electricity delivered in the UK. Likewise consumers in developing countries may benefit through improved health and life expectancy, by displacing kerosene lamps that are commonly used for illumination. In addition to risk of burns, poisoning and explosions, the use of kerosene lanterns may also be associated with reduced lung function and increased risk of asthma, infectious diseases (such as tuberculosis) and cancer.

IMPACT MEASUREMENT

City Windmills published its first Social Impact Report as of August 2015. City Windmills is in the start-up phase of operations but as committed to measuring and regularly disclosing information on its social and environmental performance through an annual impact report and direct engagement with its partners, stakeholders and customers. In the future the company intends to invest in more targeted, rigorous and verifiable impact monitoring and reporting strategies.

ACCREDITATIONS, STANDARDS & AWARDS

None reported

¹Scientific Advisory Panel Briefing: Kerosene Lamps & SLPS, Climate and Clean Air Coalition, November 2014

Impact Assessment Matrix

As City Windmills is a newly established company the monitoring and reporting systems are still in development.

ECONOMIC IMPACT

	MEASUREMENT	REPORTED DATA
Energy Security	Reduced electricity outages	To be Reported
	Reduction in dependence on centralised grid energy generation	To be Reported
Financial Inclusion	Reduced electricity prices	To be Reported

SOCIAL IMPACT

	MEASUREMENT	REPORTED DATA
Health	Amount of solid and liquid fuel lighting displaced in developing countries	To be Reported

ENVIRONMENTAL IMPACT

	MEASUREMENT	REPORTED DATA
Reduction of GHG emissions	GHG emissions saved by customers / consumption	To be Reported

GOVERNANCE

	MEASUREMENT	REPORTED DATA
Governance	Independent Director	1 Independent Director on the Board

Commercial and Financial Summary

FINANCIAL INFORMATION

The company has raised £1.5 million to date from private and small institutional investors in the UK, Europe and the US. Shares have been placed at €1.50 in 2010, €2 in 2013, and €5 in 2014. The company continues offering equity at €5 valuing the company at around €8.5m; however no funds were raised at that price in 2015. In partial lieu of management compensation for Q2 2015, the directors and management received shares priced at €3 per share. Also in 2015 the company undertook a capital raising of up to £1m for execution of the next phase of the strategy by issuing debentures paying a coupon of 6% with a 5-year maturity. The company reports that it has closed a first tranche of the debentures, raising US\$ 200,000.

CORPORATE STRUCTURE

A holding company structure based in the UK & Vaud, Switzerland with 100% subsidiaries registered, in the UK – City Windmills Ltd., USA - City Windmills, Inc., Switzerland – City Windmills (Suisse) SA.

WHAT THE MANAGEMENT TEAM SAYS...

The world is entering an exciting phase, where Denmark, Scotland are nearing self-sufficiency from wind-power alone, and even the mid-West USA is producing over 25% of its energy from wind farms (Iowa, South Dakota)... Coupled with advancement in battery technology, and increased weather disruption of grids resulting in power outages, the need for building self-generation grows. We see a future where every building generates electricity, where every rooftop replaces chimneys with small wind turbines, where every fluttering flag now becomes a national symbol adorning a small wind turbine.

David Mapley, CEO

FINANCIAL PERFORMANCE

Year end	Dec-2013 (unaudited)	Dec-2014	6months to Jun-2015 (unaudited)
Group turnover (£)	-	20,707	2,067
Operating Profit / (Loss) before Tax (£)	(510,607)	(1,711,437)	(239,077)
Tangible Fixed Assets (£)	51,332	117,175	43,579
Shareholder's Funds (£)	3,764,222	2,262,350	2,304,139
Cash Balances (£)	3,664	89,006	79

Case Studies



City Windmills has recently signed a contract to deliver its CW 2000 wind turbines to Bimbo Bakeries in the USA – because of concerns over leakages into the food mix, large roof areas cannot be used to house solar or wind turbines. City Windmills is therefore installing large, pole-mounted wind turbines on the roof's edge, to catch accelerated wind for power generation, while not compromising the integrity of the roof.

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