

WEG CELEBRATES ITS 50th ANNIVERSARY AS A GLOBAL MAJOR IN POWER SUPPLY, DISTRIBUTION, TRANSMISSION, CONTROL & AUTOMATION.

WEG celebrated its 50th birthday on 16th September 2011. In just five- decades the company has grown from modest beginnings, as a LV motor manufacturer in Jaragua do Sul, Brazil, to a global giant with earnings exceeding US \$3 billion. Along the way WEG has evolved from a proprietary supplier of electric motors to become a major global solutions provider of power supply, power distribution, power transmission and turnkey automation systems. This evolution continues apace, underpinned by state of the art manufacturing plants in Brazil, Argentina, China, India, Mexico and Portugal, and sales offices and distributors across 5 continents.

Today, WEG systems are controlling desalinisation plants in the Middle and Far East; they are providing the control of vast hydro- electric projects in the Andes and beyond; they are delivering the power to dig some of the longest tunnels in the world, and are providing control for alternative energy plants that use waste as a base fuel. WEG motors are also driving generators on offshore oil rigs in some of the most demanding environmental conditions in the world; and they are scaling the dizzy heights of the tallest building in the world, providing the drive for the first-stage air conditioning used in the 818 m (2,684 ft) high Burj Tower in Dubai.

WEG's global sales now exceed the US\$3-billion mark, representing increasing global success across a wide range of product groups, including the latest generation of transformers and generators, LV control gear, inverter drive systems, soft starters, LV and HV motors, ATEX- compliant explosion proof motors, smoke extraction motors and full turnkey systems. In addition, WEG has recently made a significant strategic expansion of its product portfolio, and achieved synergies for its automation and control products through the creation of a joint venture for the manufacture of wind turbines with Spanish company M Torres Olvega Industrial (MTOI) – a well established manufacturer in the wind energy sector.

WEG's global growth is underpinned by 16 modern manufacturing plants worldwide; in Europe, Asia and the Americas. Employing the resources of these manufacturing plants, plus the facilities of subsidiaries in 25 countries, agents in over 100 countries, and over 1100 service centres covering all 5 continents, WEG is able to service each market individually, by offering specific customer solutions.

WEG is a major contributor to sustainability by offering more efficient solutions to meet the needs of each market segment. The company helps industries to generate their own energy by reusing residues - sugar cane bagasse, rice chaff, wood scraps and even water. WEG's sustainable solutions supply sugar cane and alcohol mills, small hydro- electric power plants and wind power plants worldwide, supporting the Kyoto protocol by helping to reduce the effects of greenhouse gases on the environment.

WEG is active across the widest range of industries, addressing segments such as power generation, mining, food, HVAC, water and waste treatment, metallurgy, steel, petrochemical, oil and gas, shipbuilding, general engineering, testing – and many more - with over 400 different product lines, all offering the highest levels of technology, efficiency and protection.

In the low, medium and high voltage motor sectors, WEG offers highly efficient standard products and also develops special custom products for specific market segments requiring motors capable of supporting the most demanding applications.

As evidence of this ability, WEG has supplied a \$100m package of pump motors, plus control panels & brake systems for the world's largest irrigation project, the HNSS Project in Andhra Pradesh, India. In total, 160 large (MW) synchronous vertical motors, plus excitation panels and brake systems, have been supplied for use on large pumps in the prestigious project, which is being funded by the Indian Government in association with the World Bank. When complete, the project will irrigate an area of 2500 square kilometres - equivalent to 170,000 football fields - bringing direct benefits to more than 80-million people.

Like the machines supplied for the HNSS Project, all WEG electric motors are characterised by their high levels of energy efficiency, providing for fast return on investment (ROI); the equipment generally paying for itself in a little over a year in most continuous production environments. The use of energy efficient motors is a worldwide industry trend, due to the need to reduce energy costs, and, more importantly, the need to preserve the environment.

WEG is at the forefront of developments in energy saving, researching and developing technologies to ensure that the company is always one step ahead in manufacturing much more efficient energy saving motors. Epitomising WEG's environmental approach to motors is the new W22 range of high-efficiency three-phase induction machines. This range offers significantly lower energy consumption, lower noise and vibration, higher reliability, easier maintenance and lower cost of ownership.

Featuring many innovative developments, and supported by patent and registered design applications, the W22 range comprises three product types, each designed to exceed the requirements of the IE2, IE3 (Premium) efficiency and IE4 (Super Premium) efficiency classes.

The energy efficient performance of the W22 range reduces losses by between 10% and 40% compared with typical motors. A key part of this improvement in energy use is the W22's new aerodynamic frame, which increases airflow and reduces operational temperatures. The terminal box of the motor has also been repositioned to optimise airflow.

WEG is also at the forefront in the manufacture of hazardous area and smoke extraction motors. The company offers one of the largest ranges of ATEX- compliant Low Voltage (LV), Medium Voltage (MV) and High Voltage (HV) motors for use in Oil and Gas, Chemical, Petro-chemical and Mining operations.

These products also comply fully with the most demanding requirements at global level. For applications from the smallest induction machine through to the largest, a complete range is available from WEG.

Also managing hazards and providing greater safety, is WEG's range of smoke extraction motors. Designed to withstand temperatures of 400°C for 2 hours, in their ultimate F400 classification, these motors are used in ventilation systems all over the world: in tunnels, mines, buildings, shopping malls, enclosed car parks, warehouses, stairways and theatres.

Complementing and increasing the efficiency of WEG's extensive motor range is a comprehensive range of inverter drives, which are also wholly manufactured by WEG. These provide exceptional levels of functionality and energy saving at very competitive cost.

With its newly introduced CFW-11 drive WEG has set a new benchmark for variable frequency drive (VFD) operation. The CFW-11 has a patented Optimal Flux feature that minimises the losses of Totally Enclosed Fan-Cooled (TEFC) induction motors used with constant and variable torque loads, especially at low speeds where motor ventilation systems are inefficient. Optimal Flux overcomes the problem of reduced torque under these operating conditions, and the costs of traditional solutions such as motor over sizing and additional ventilation; providing instead an integrated, low cost solution for keeping motor temperature rise within the thermal limits of its insulation class.

At the same time as improving the environment with its motors and drives, WEG is helping to mitigate the consequences of Global Warming by installing more energy efficient transformers and generators in industries and energy generation, transmission and distribution systems. An excellent example of this in action is WEG's partnership with the largest alcohol plant in the world in a highly economical, environmentally friendly and extremely cost effective co-generation project.

The project is leading the way in providing electrical power from sugar cane waste. It enables the Santa Elisa power plant in Sao Paulo to provide 60MW of generation capacity. To achieve this, WEG is providing a complete electrical package including 2 x 15MW generators, 3 x 15MW transformers, panels, cabinets and the complete automation system for the generation and distribution of energy.

The same combination of generators, transformers, switchgear and turnkey automation is also making the difference in

hydro-electric power plants, desalination plants, irrigation schemes, mining operations, cement plants, ports – and many more around the world – providing sustainable solutions that do not deplete the environment.

In addition to highlighting WEG's environmental credentials, the Santa Elisa project demonstrates the depth of the company's systems expertise. WEG's specialised engineering teams plan and supply complete systems that optimise automation processes for whole industries, deploying intelligence and technology to provide sustainable solutions in any industry sector. These solutions mean more production in less time, and at a lower cost for the user.

In the case of the Santa Elisa project, the scope of WEG's supply extended to the upgrading of a substation (from 18.8KV to 138KV) including its power supply line, and the complete electrical installation, all in conjunction with local partners. In addition, WEG also provided remote supervision and control of the whole energy generation processes. As well as providing local supervision and control at the job site, the system allows quick, safe and simple monitoring and maintenance control via the Internet.

'WEG continues to develop and grow in concert with the needs of the industries it serves world-wide, constantly striving for more efficient products to offer the market. The next 50 years offer great challenges to maintain resources while continuing to increase productivity, WEG accepts the challenge.'

Marek Lukaszczyk, European Marketing Manager WEG.

Photo Captions:

Picture 1: The WEG Museum was built on the same site that WEG produced its first motors, in the town of Jaraguá do Sul, Brazil.

Picture 2: 50 years on the WEG Museum still fulfils its original design objective: to provide an inspiration and a source of attraction for children.