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Italy: EnerBLU srl case study

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About

Case study name:
The greening of industries in the EU

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Italy

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Automotive

EnerBLU produces electric vehicles for the transportation of people and goods. Because the company converts commercial petroleum-fuelled vehicles into electric ones, managers prefer to call the business transformation rather than production. Based in Modena, the second ranked Italian automotive district, the company has expanded its business to three other European countries. Conducted in January–February 2012, the case study illustrates how the electrification of the automotive industry brings about change in workers' profile, the work environment and career perspectives.

Introduction

EnerBLU is located in Modena, land of luxury and sport cars like Ferrari. Founded in 2004 as an engineering provider for e-mobility, EnerBLU gained production capacity in 2005 through a fusion with Veicoli, a producer of renewable energy technology and e-mobility systems. Started with five employees, today EnerBLU has 24 workers and more may soon be required as interest in e-vehicles is growing. By identifying its business as 'transformation', EnerBLU recognises only one direct competitor in Italy. The company's secondary activities are technical assistance and international licensing.

The Italian automotive industry employs about 170,000 people and contributes 8.5% of national gross domestic product (GDP). The sectorial crisis is reducing the number of jobs, while its electrification could re-launch the industry. The main Italian manufacturers are ignoring this opportunity and there are no guidelines on how this opportunity might be used from trade associations and other institutions. As a result, the electric automotive market is mainly made up of small to medium companies that work within a developing framework of regulations. Within the next few years, e-vehicle producers could make up 10% of the global automotive market, corresponding to 200,000 vehicles in Italy.

Because of its positive benefits in terms of the environment, market and working conditions (Table 1), automotive electrification in general and EnerBLU in particular are the focus of this case study.

Table 1: Conventional versus electric automotive industry

Area	Conventional automotive	Electric automotive
Environment	25% of global CO_2 emissions	Zero emissions at the wheel
Work	Reduction in number of jobs	Growth in number of jobs
Work	Low qualified workforce	Highly qualified workforce
Work	Work specialisation	Interdisciplinary work
Work	Repetitive tasks	Experimentation and new solutions

Market	Big corporations	Small market pioneers

Drivers and motivations

EnerBLU was founded as a result of the entrepreneurial spirit of local managers with the support of ATCM (*Azienda Trasporti Collettivi e Mobilità*), the public transport company of Modena. Growing demand for sustainable mobility and Modena's automotive background formed a positive framework within which to set up the business.

The issuing and application of environmental regulations could boost EnerBLU's market, as e-vehicles are usually exempt from traffic restrictions and access limitations. For example, they can generally access limited traffic zones (LTZs), a major trend in Italy aimed at blocking the routes open to motor vehicles and reducing their circulation.

The availability of advanced and reliable battery technology was fundamental to the setting up and growth of the company, although EnerBLU constantly looks for new technology applications that could further improve vehicle performance.

When the economic crisis affected the automotive sector, the concept of sustainable mobility became a common proposal as a basis to re-launch the industry. But the high purchase price of e-vehicles tends to discourage customers, especially during economic downturns. In 2009 EnerBLU faced a reduction in orders and cancelled a few commercial job positions (employee numbers fell from 13 in 2008 to 10 in 2007). But while the crisis in conventional automotive industry became systemic, this did not happen for the e-automotive industry. In 1–2 years, EnerBLU's orders returned to pre-crisis levels, the cancelled job positions were re-activated and the number of employees more than doubled between 2009 and 2011 from 10 to 24.

Green business practices

EnerBLU does not use, process and dispose of any of the fluids typical of conventional automotive factories such as fuel and motor oil. The main technical operation is substitution of the fuel engine with lithium-ion batteries. Lithium-ion batteries have a higher performance and lower environmental impact than earlier batteries based on lead, nickel and cadmium. Lithium-ion batteries contain valuable recyclable materials and, at the end of their life-cycle, are disposed of according to the environmental standards set by the EU directive on waste electrical and electronic equipment (WEEE).

As the prices of e-vehicles are 2–3 times higher than their conventional counterparts, EnerBLU's customers are mainly public institutions and companies rather than individuals. They have greater financial possibilities and usually plan the routes and timing of their fleet, which assures optimal management of the batteries. Commercial e-vehicles generate socioeconomic advantages as they can be charged in their garage at night, without the need for public infrastructure and when electricity is cheap.

Due to their size and load capacity, ordinary commercial vehicles contribute significantly to noise and air pollution. Electric vehicles are silent and do not produce emissions to the air.

The growing attention to quality of life is leading municipalities to examine and implement sustainable mobility policies. At the same time, the price of fuel constantly increases – the price in Italy is one of the highest in Europe. In this context, electric vehicles can meet the demand for more sustainable mobility with cheaper running costs.

The demand for e-vehicles does not yet allow mass production and the consequent economies of scale. EnerBLU tackles this situation by electrifying fuel vehicles produced by global corporations. This strategy and the engineering expertise used to identify the best technology for each vehicle allows the company to satisfy its customers' needs with tailor-made solutions.

Because the small market and the size of the company do not encourage large production, EnerBLU expanded its business through an international licensing strategy. Licensees in Turkey and Scotland receive technology and training to produce and sell e-vehicles in return for royalties. More recently, EnerBLU extended its international network to Denmark where it produced 11 e-buses for a dedicated urban circuit in Copenhagen city centre. Initially, each EnerBLU vehicle had to be approved in each country by the national office of vehicle registration, with long waiting times and bureaucratic difficulties for the international business. These difficulties were overcome by the acquisition of international homologation (named Type Approval) for all EnerBLU's vehicles.

Anticipation and management of the impact of green change on quantity and quality of jobs

Green jobs

The small size of the company allows senior managers to select the personnel directly without the need for a human resource manager. When it was founded, EnerBLU had two employees deputed to business management and three to technical activities. Today there are 24 employees, 75% of whom have attended university or technical high school, who combine a technical background with business management tasks and share work activities between the workshop and the office.

Young employees are considered to be more oriented to a greener future and thus to the e-vehicles produced by EnerBLU. The jobs generated by the company mainly involve young people, mostly between 18 and 25 years-old.

EnerBLU is an attractive work place for young graduates because it offers them the possibility of applying their technical education and creativity. As the production varies according to the specific client, engineers and technicians work with different vehicles and are encouraged to experiment with ad hoc solutions. This approach differs from the assembly line of the conventional automotive industry.

Cleanliness and silence may also be considered factors in the attractiveness of the workplace. The management is proud to offer employees a 'clean garage' where the absence of oils and fuels eliminate inhalation of, and contact with, the toxic compounds typical of conventional

automotive factories. EnerBLU's factory is also very silent due to the absence of fuel engines and the internal combustion engine process. Even when electric vehicles are turned on, their noise levels are almost zero.

Green skills

The qualifications and autonomy of workers distinguish EnerBLU's factory from conventional automotive factories (see Table 1). Employees are technicians and engineers who work with computers, software applications, wires and batteries instead of machines, engines, oils and fuels. They do not execute planned and standard actions, rather they determine and apply the best solutions for each vehicle on an individual basis. Therefore, the classic distinction between assembly workers and production management is not applicable.

In a developing market, the motivation to set new milestones goes together with interdisciplinary functions: 75% of personnel match technical tasks with managerial issues as they collaborate autonomously with suppliers, customers and licensees. For example, employees that identify new solutions approved by senior management will boost their promotion prospects.

Employees are exposed to international collaboration and can operate in English. As the international network is expanding, the management is planning to introduce more languages.

Careers are built on growing responsibilities and managerial tasks. In addition to the technical background, the EnerBLU furnishes company-specific knowledge (for example, wiring and battery standards, software applications). The effort and time invested in on-the-job training lead to longer relationships between the company and its employees. The former retains trained personnel while the latter develop skills useful for career advancement.

The main form of training is work shadowing. A new employee follows a more experienced one for a few months. While the newcomer gradually practises on the vehicles, the 'expert' takes the role of tutor. The training period is usually 2–3 months but may vary according to the employee's ability.

EnerBLU does not count on attracting an experienced workforce from the conventional automotive sector and prefers instead to shape its personnel via a learning-by-doing approach. The reasons for this are as follows:

- its sub-sector differs totally from conventional vehicle production;
- its technology solutions are company-specific;
- the e-vehicles market is new and under constant evolution, making it very difficult to find experienced and specialised workers.

Other job quality dimensions

Although workers' rights and working conditions are not particularly different to those in the conventional automotive industry, two distinctions arise.

- Employment security is perceived more solid because the market perspectives of electrification are positive while the conventional automotive industry is suffering.
- Employees have more possibilities to advance in their careers as they are encouraged to experiment with innovative solutions and to take responsibility.

Work intensity depends on the type of order and the number of vehicles requiring conversion. Generally the company follows standard office hours (that is, 8.30 to 17.30). Employees are free to shorten their lunch break and finish work earlier in the afternoon. The combination of production peaks and international projects (for example, updating licensees) can generate more intense workflows.

The organisation of work is based on small teams (generally two employees work on one vehicle). The work is considered interdisciplinary as it encompasses technical and managerial responsibilities shared between the workshop and the back office. All employees attend four general meetings each year to be informed about corporate guidelines and to share opinions.

Cultural change

The company takes pride in the socio-environmental advantages of e-vehicles. Because the management sees electrification as a natural automotive evolution, the company believes it is transforming traditional automotive jobs rather than creating additional ones.

Being aware of the negative trends and perspectives of the automotive industry, employees share this evolutionary vision. Moreover, they consider their jobs as part of the green change that will bring about general environmental benefits together with career opportunities as the automotive industry is becoming more electric. This stimulates employees to set new standards and to improve their technical performance. They have the chance to apply their ideas and experiment with new applications: 80% of the e-technology used for the transformation is considered standard while the remaining 20% varies according to the vehicle's specification and the worker's ability. This strong motivation becomes pride when new findings are demonstrated to be valid or presented at meetings and exhibitions.

Collaboration on the green change

The company's relationships with organisations and public institutions are generally proactive and positive.

Locally, the relationships with ATCM and educational institutes are strategically relevant.

- ATCM supported the launch of EnerBLU by providing strategic support and information about technology. Today ATCM still supports EnerBLU even if only as a marginal shareholder.
- The University of Modena and Reggio Emilia, particularly the faculty of engineering 'Enzo Ferrari', organises workshops attended by EnerBLU employees.
- EnerBLU maintains direct contact with the IPSIA Ferrari technical high school.

The university and IPSIA furnish most of the personnel at EnerBLU. The recurrent name of 'Ferrari', the founder of the famous Italian sports

car, is evidence of the deep automotive background of Modena and the surrounding area.

At national level, the relationships with municipalities cover northern and southern Italy.

- Municipalities have a twofold strategic relevance. Not only are they are major customers, but they also create new business opportunities by issuing traffic restrictions and environmental regulations that shift private companies to using e-vehicles. EnerBLU monitors local policies and keeps contact with municipalities through its commercial staff. However, municipalities often delay making payments to the company due to long bureaucratic chains, change of boards or lack of funds. This has negative effects on EnerBLU's cashflow and accounting.

At international level, the most relevant relationships are with the company licensees and the FAKT automotive test and engineering centre.

FAKT provided the international vehicle homologation (Type Approval). The collaboration was characterised by long bureaucratic procedures rather than smooth and quick results; Type Approval required a year of consistent resources and time that could have otherwise been invested in production and sales.

Licensees constitute a strategic partnership for internationalisation of the business. They could also lead to an increase in EnerBLU's overall production from the current 150 units per year to 1,000 units per year, generating around 30 new jobs. The new jobs would not affect EnerBLU's factory in Modena as the company aims to expand the production through its licensees and instead focus on the engineering and production of prototypes. The current total of 54 employees is made up of 24 at EnerBLU's site in Modena in Italy, 10 at the Scottish licensee and 20 at the Turkish licensee.

Difficulties

Bureaucracy is a common root of difficulties. The long history of the traditional automotive industry has led to the creation of high levels of expertise in managing and solving the related bureaucracy. The situation is completely different for e-vehicles as standards and regulations are relatively new or under development. Therefore, bureaucrats cannot count on previous cases when issuing certificates, registrations and authorisations when registering vehicles without Type Approval.

The public sector is a strategic target but it leads to two problems: delayed payments and an unclear regulatory framework. Regarding the latter, while traffic restrictions and environmental regulations can boost the market for e-vehicles, they often lack strict application. For example, when traffic is blocked because of too high pollution, too many motor vehicles are exempt.

Scepticism typically affects new technologies. To stimulate interest and to convince potential customers, EnerBLU considers vehicle demonstrations to be a more powerful tool than conventional marketing. But demonstrations have high costs and large specialised events are generally rare.

Anticipation and management of green change

- Young people are the most relevant leverage of the green change as they are more oriented to a greener future.
- Workers' autonomy enables to better control emerging market trends. EnerBLU's workers are invited to apply their creativity, to set technical advances and to identify their applicability (for example, by interacting with colleagues and suppliers).
- Environmental regulations are issued by single municipalities. EnerBLU's internationalisation aims to anticipate the rise of new opportunities by enlarging contacts abroad.
- Gaining Type Approval has been a major achievement, enabling the company to avoid long approval periods and facilitating its international strategy.

Conclusions and recommendations

EnerBLU represents the initial step of a greener automotive industry.

Compared with the conventional automotive industry, EnerBLU positively affects working conditions in that:

- the number of jobs has increased;
- employees have better career prospects;
- cleaner and safer work environment;
- technical and interdisciplinary work substituted for mechanical and standardised actions.

Various company decisions have sought to manage market uncertainties and risks, including:

- exploration of new technology applications;
- expansion of network of municipalities;
- international and licensing strategy.

The small size of EnerBLU limits business opportunities in Italy and does not allow direct international production. However, it does enable the company to select personnel directly and to offer flexible and interdisciplinary work, and to have absorbed the effects of the crisis within two years.

Municipalities issue environmental and traffic regulations, but EnerBLU claims that:

- when issuing exemptions, the misleading grouping of zero-emission vehicles (electric) and low-emission vehicles – liquid petroleum gas (LPG), gas and new diesel – should be redefined;
- their application is often weak and discontinuous;

- eco-pass systems could assign incomes to incentivise the purchase of e-vehicles.

Financially, EnerBLU is autonomous and does not claim any support. However, the company maintains that national and international institutions should create more funds for the purchase of e-vehicles as their socio-environmental benefits are enormous. This would indirectly increase production and high quality jobs at EnerBLU.

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