Lithuania: Utenos trikotažas

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About

Case study name:
The greening of industries in the EU

Country:
Lithuania

Organisation Size:
500+

Sectors:
Textiles and leather

Utenos trikotažas is a large textile producer in Lithuania with 780 employees. For more than decade the company has been engaged in green business practices to improve its energy and resource efficiency. This case study illustrates how different types of green business practices in production facilities have different effects on employees. A thorough analysis focuses on the effects on employment of the automation of fabric dyeing processes and highlights the associated improvements in employee health and safety conditions, among other issues.

Introduction

Notably, major environmental issues in textile production concern the use of chemicals and toxic substances, which, however, are not related to climate change and fall outside the scope of this research. Nevertheless, the textile industry has a carbon footprint through its energy and resource use. Therefore, production efficiency measures do help mitigate climate change.

Utenos trikotažas (UT) is one of the largest Lithuanian producers of circular jersey textile products, exporting over 90% of its production abroad. It was established in 1967 in the Soviet Union, and privatised in 1993. Currently it employs about 780 employees. In 1998 it produced its first ecological products for the Swiss market, and it currently holds most of the internationally available environmental certificates for textile products. These include:

- the EU Ecolabel flower, which helps consumers identify products and services that have a reduced environmental impact throughout their life cycle;
- Oeko-Tex 100, a globally uniform testing and certification system for textiles at all stages of production;
- certification from the Textile Exchange, formerly the Organic Exchange, a non-profit business organisation, aimed at encouraging the growth of a global organic cotton industry;
- meeting the Global Organic Textile Standard.

The company has been engaged in green business practices since 1998 in order to increase its energy and resource efficiency, in line with the already adopted Social Accountability Management System (according to SA 8000-2008 standard) and the System of Production Efficiency which is currently being implemented.

This case study will describe projects undertaken by UT to improve its resource and energy efficiency. The green business practices with the highest impact on employees are those relating to modernisation of the dyeing process, which will be analysed more thoroughly.

Drivers and motivations

All UT green business practices relate to improvements in energy and resource efficiency. They allow the company to reduce production costs and thus improve its competitiveness. Some measures were implemented to reduce energy use; to counteract company expectations that fossil fuel prices will keep increasing. Other projects brought improvements of the 'first-time-right' production percentage, which translates into resource use efficiency (see next section).

Another major impetus for green business practices is UT customer awareness of environmental issues, including climate change. The

company targets customers within Western Europe and Scandinavia, markets which typically are sensitive about environmental issues and prefer to purchase ecologically certified products from responsible suppliers. UT has therefore obtained many certificates for ecological production in order to improve its reputation, as well as to gain new business opportunities.

Other, less important, motivators for implementing these practices include:

- improving working conditions, which also contributed to employees' job satisfaction and retention rates;
- getting financial support from an environmental investment fund to implement some measures, which may have influenced the timing of investment.

Green business practices

In 1997 a hot waste-water reuse system was installed, in which outgoing waste water heats new water for production; this brought energy savings of 30%. A modern natural gas boiler-room was built in 1999 to generate steam for production. It has halved the company's energy bill and reduced its environmental impact.

In 2006 a new production water softening system was installed, which meant an annual reduction in salt purchasing of 100 tonnes; thus reducing the company's carbon footprint in production.

There are also two measures linked to fabric dyeing processes, which affect employees through their daily routines and improve resource efficiency.

The first, the automation of the dyeing house processes, was carried out in 1998–2000 by installing an automated chemical station for fabric dye preparation and supply into the dyeing machines. Most importantly, this measure eliminated a lot of manual work at the dyeing house, since previously the staff had to prepare dye mixtures by hand. Furthermore, the new automated process had to be managed by an IT system, which led to workers obtaining computer skills.

This measure contributed to resource efficiency in three ways:

- it eliminated the human factor in dye mixture preparation, which increases the 'first-time right' percentage;
- there are savings in energy consumption because the automated process has better timing for dyes mixture heating and supply on the fabric;
- the IT system records the implementation parameters of a dyeing session, thus enabling the department to avoid dyeing errors in the future.

For this practice, UT has used the financial support of Nordic Environment Finance Corporation (NEFCO), obtained through collaboration with the Lithuanian Institute of Environmental Engineering (APINI). In the 1990s the institute was already advocating environmental awareness and clean production practices among Lithuanian manufacturers, and assisting them to find ways of making cost-efficient environmentally friendly improvements to their processes.

In 2007 small-scale dyeing equipment, which can mix a given recipe and produce a sample of coloured fabric, was installed at the UT production laboratory, which tests new colour recipes and produces fabric samples. This practice has reduced the amount of manual work for laboratory workers along with improving resource efficiency through more accurate recipes. The device is significantly more accurate with chemical doses, compared to manually conducted tests: it is able to deliver more reliable colour tests, avoiding human errors in measurement, and allows an exact recreation of the recipe in mass-production.

As a result of the two green measures in the dyeing processes, UT has increased its 'first-time right' share from 73% in 1998 to 93% in 2011. It brought tangible cost-savings for the company in addition to favourable effects on quality of employment. These two measures will be the focus of the remainder of the analysis of the effects on employment.

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

Impact on quantity of jobs

Automation of the dyeing house function affected 13% of UT staff. Dyeing house workers, comprising 85 employees, were mostly affected since they had to shift from manual procedures to the operation of the automated chemical station and other dyeing machinery. In addition, 15 dyeing process specialists, including shift managers, engineers, and colour technologists, also had to adapt to the process change. Last but not least, five IT specialists were in charge of the configuration and integration of the automated IT-based dyeing system, and consulting all the parties. As a result, 105 green jobs were transformed. No new green jobs were created, and one job related to preparation of chemicals was eliminated, due to a decrease in workload.

The adoption of the automated recipe mixer affected a small team of employees working with colour recipe development and sample production. The team includes two laboratory workers and two colour technologists, which in total equate to 0.5% of the company's employees. They learned how to operate the new equipment without any changes of employment levels.

UT is expecting to implement more cost-saving and efficiency measures, which often coincide with reductions of environmental impact. However, evidence suggests that such green measures are not expected to affect employment levels significantly.

Impact on quality of jobs

Skills development

The automation of the dyeing house meant that all the employees there needed computer skills in order to use the IT system. The company was also installing IT systems for other functions so training was provided to all employees who needed it. However, the major challenge was

to train dyeing house staff how to work with the specialised programme for the dyeing process. This was done by the machinery suppliers training the company's IT and dyeing specialists who then trained the dyeing house staff.

Another new skill in the automated dyeing process was the ability to analyse the process, which had to be mastered by colour technologists. Before, there was no opportunity to review the dyeing process and analyse any mistakes. However, the automated system allows the process to be tracked and analyses its effects on the final output. These skills were developed on the job.

Overall, the core knowledge of the specialists about the dyeing process stayed unchanged, other than the process information now being handled in digital form. The employees, most of whom were then between 30 and 40 years old, were eager to learn the new technology. It was more challenging for older employees who had not used computers before. When the green changes were introduced, those affected were given the choice of learning new skills or to moving to a different role in the company. Most employees chose to stay and learn.

The new skills needed to use the automated recipe mixer in the laboratory, were simply familiarisation with the specialised computer programme. The machine suppliers taught the laboratory team, whose technological and chemical knowledge have stayed the same.

Overall, dyeing specialists continuously have to adapt their skills for new technical solutions, since the fashion industry loves novelties. The specialists are constantly experimenting and learning as they try to keep up with the market. For this reason a willingness to learn is an important recruitment criterion at UT.

Other dimensions of job quality

The green measures, although different in scale, both have similar effects on other aspects of job quality.

Improvements in health and safety conditions are the most important outcome of the green measures. Both in the dyeing house and in the laboratory, the new processes provide a safer and cleaner working environment:

- chemicals are now handled in closed systems, thus vastly reducing physical contact with them;
- the risks of accidents with hot dye mixtures have been eliminated;
- work processes have become simpler, and less physically intensive.

There has also been a reduction in psychological stress as there is less likelihood of measurement errors when mixing recipes, and because the computer monitoring of processes means that there are warnings of malfunctions – which workers were previously expected to spot.

The new measures have also increased employees' abilities to work with automated production systems, thus, arguably improving their career opportunities and job security, since the skills are transferable across different industry sectors and processes. However, UT employees' career prospects are limited due to regional labour market fragmentation. Thus young and mobile people may benefit more from the changes.

Employee income was not directly affected by the green measures. However, according to company policy, employee income is reviewed annually, taking into account the economy and business situation, as well as the employee's personal development. Dyeing house workers who work with computer-based processes earn more than staff engaged in physical tasks only.

The measures also contributed to employee job satisfaction, since their work processes were improved, and they had learned new things. Such developments contribute to the company's reputation and its desirability as an employer. Moreover, it increases employees' pride and in the company and their loyalty to it, as can be seen by the fact that the average length of time an employee stays with UT is 18 years.

Social dialogue

There has been a trade union presence at the company since UT was founded in 1967. About half of UT's employees, mostly blue-collar workers are members. It has become a very active and independent organisation with one of the most exemplary collective working agreements in Lithuania. The social dialogue is organised in accordance with global social accountability standard SA 8000.There are regular workers' conferences and surveys organised, and the collective labour agreement is reviewed annually. Trade union representatives participate in all employee-related business matters, including:

- employee training development;
- reviews of remuneration systems;
- business process changes related to health and safety.

The union was involved in the automation of dyeing house processes through the work safety and health committee. However, there were no major issues over it, since its impact on employees was by and large positive. The adoption of the automated recipe mixer has not been on social dialogue agenda, mostly because again it has positive effects and concerns a small number of white-collar employees.

However, the trade union representative interviewed said that UT could be more communicative, especially concerning business developments and investments. She said:

Social dialogue can be very useful to the employer since a trade union can provide useful inputs when making business decisions. In addition, we can help to explain the changes to employees and accommodate their initial doubts and questions.

Collaboration on the green change

All the green changes came about because the company management anticipated trends in the international markets and wanted to satisfy the needs of the company's customers. Most of the technological solutions were obtained through participation in international exhibitions. Management of green change is implemented through internal sources and with assistance from the machinery suppliers.

Overall, UT representatives claim that it is hard to find any partner to share ideas or best practices since these are mostly industry specific and most textile manufacturing in Western Europe and Scandinavia has moved to Eastern Europe and Asia, where businesses are far less collaborative. Public or social partners have limited knowledge on the issues concerned.

Conclusions and recommendations

The UT case study suggests several conclusions and recommendations which could be considered by manufacturers in different sectors

which want to modernise their practices.

Green business practices in production sectors are predominantly motivated by cost reduction benefits, stemming from energy and resource efficiency. They are closely related to the overall modernisation of business, which can be positioned within the environmental responsibility agenda.

External market oriented businesses in the new EU member states are driven to implement environmental standards and green business practices, in order to attract foreign customers.

Many significant efforts by textile producers to contribute to climate change mitigation are implemented through technology-based solutions targeted at energy efficiency, which seldom pose any effects on employment. Meanwhile, process-related changes, like the automation of fabric dyeing processes, do affect employees, though these are more related to resource efficiency.

Improvements in resource efficiency mostly rely on transforming existing jobs into green ones. In the case of UT, no new green jobs were created, while 13% of the employees adapted to the new green business practices.

The effects of automation on employees are generally good, with improvements in health and safety conditions, reduction of work-related risks, and the creation of a better working environment.

Lastly, in this case, modernisation and the green business approach led to increased job satisfaction, pride and loyalty for employees.

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