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Slovenia: Danfoss Trata case study

22 January 2013 | Observatory: [EMCC](#)

About

Case study name:

[The greening of industries in the EU](#)

Country:

Slovenia

Organisation Size:

100-499

Sectors:

Energy

Danfoss Trata, a part of Danfoss District Energy, is engaged in NACE subsector 33.20, Repair and installation of industrial machinery and equipment. It manufactures district heating products and solutions, i.e. products 'that help to protect the global environment'. This case study looks at the setting up of a heat exchangers competence centre in Slovenia. Highly efficient heat exchangers contribute to more efficient district heating and reduction of energy use. The competence centre resulted in the introduction of a new green business activity of considerable size and in the creation of new green jobs.

Introduction

Danfoss Trata is engaged in the installation of industrial machinery and equipment (NACE 33.20). In 2010, NACE 33.20 was responsible for less than 0.2% of Slovenian GDP; more precisely for 0.18% of the total sales of the Slovenian non-financial corporate sector (calculated from SORS data). The subsector does not face any specific pressures related to national industrial standards in connection with climate change.

Danfoss Trata was established in 1937 in Ljubljana. In the pre-transition era, Danfoss Trata was part of the IMP (Industrijsko montažno podjetje) holding under the name IMP Avtomatika. The name later changed to Trata d.d. (a joint-stock company). Since 1995 it has been part of the Danish multinational Danfoss's District Energy Division. In 2010, the company's sales amounted to €54 million and it had 243 employees. Today the company employs 313 people. It produces electromechanical controls for district heating, HVAC (heating, ventilation, and air conditioning) equipment, balancing valves and heat exchangers.

Danfoss Trata was selected for case study because its entire activity is green motivated and related. This makes it different from most other companies. All the global trends in the direction of climate-friendly and energy-saving solutions, and stricter and broader pro-green regulation, represent a business opportunity for Danfoss Trata. This case study looks at the setting up of a heat exchangers competence centre in Slovenia as a new GBP.

Drivers and motivations

Climate change issues are of crucial importance for Danfoss Trata as the whole essence of the company's activities is coming up with products and processes which help reduce greenhouse gas emissions and use of energy. The higher the awareness of climate problems and the stricter the related regulations, the greater the business opportunities for Danfoss Trata.

In 2010/2011, a competence centre for heat exchangers was set up at Danfoss Trata in Slovenia. Strengthening the production of heat exchanger production as a distinctive green business practice (GBP) is a part of the parent company's 'Core&Clear' strategy, which is focused on the production of environment-friendly products and solutions, and a concentration on core activities. The parent company expects that in view of the rising importance of environment-friendly products this will be an increasingly lucrative activity in the future. Improving image and reputation is also important, because Danfoss wants to be recognised as a firm predominantly dealing with environment-friendly products and solutions. In this framework, the main reason for setting up heat exchanger production in Slovenia was the parent company's objective to consolidate production units within the District Energy division. Climate change policies and regulations which stimulate the use of energy-efficient heat exchangers are also important, as they increase demand for this kind of product.

The recent economic and financial crises and related governmental stimulus packages had no impact on the establishment of heat exchanger production in Slovenia.

The decision to relocate heat exchanger production from Finland was based on the Danfoss strategy to reduce the complexity of its operations, thus reducing the number of production plants. The aim of the relocation was also to create a strong leading company in the field of heat exchanger development and technology and to become the best in the world in this particular segment. Danfoss Trata was selected because of its longstanding success within Danfoss, the potential to exploiting the synergies with existing successful operations, and due to lower labour costs.

Green business practices

In 2010/2011, a development and production competence centre for heat exchangers was set up in at Danfoss Trata, following the decision to discontinue production in at Danfoss LPM Finland. Heat exchangers are elements in technological processes which enable heat transfer from the primary to the secondary side of the given application – for instance, from central heating plants to apartment buildings. Heat is transmitted from a higher temperature system to a lower temperature system, thus adjusting the secondary side temperature according to application needs and at the same time hydraulically separating both sides. Heat exchangers are used in heating and cooling systems, as well as refrigeration processes – for instance in heat pumps and in various industrial processes.

The competence centre is engaged in global development, logistics and production of heat exchangers used in district heating and cooling systems. The project was initiated in May 2010 and completed in the first half of 2011. A very modern factory for production and development of heat exchangers was established in Kamnik, near Ljubljana. The first phase of relocation has been a simple transfer of production with the improvement of quality and supply conditions, while the second phase envisages modernisation of all the types of heat exchangers with the latest acquired patents.

Development and production of heat exchangers in at Danfoss Trata represents a green business practice from at least three aspects. First, efficient heat exchangers improve heat transfer from network to individual building, thus also reducing the losses of heat (energy) in its transmission from heating plants to consumers. Second, Danfoss Trata has made improvements in the manufacturing of exchangers that make them more efficient and to reduce material inputs in their production. Most notably, thinner metal sheets have been introduced in the production of heat exchangers. Third, Danfoss Trata improved the manufacturing process with a closed cooling system that reduces natural resource consumption.

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

Impact on quantity of jobs

The new competence centre for the development and production of heat exchangers created about 45 new jobs, representing 12.3% of the total 365 Danfoss Trata workforce. In the next five years it is expected that another 40 jobs will be created in the centre. The establishment of the competence centre has not resulted in any transformation, substitution or elimination of jobs, as the centre was a brand new activity for Danfoss Trata. The employment impact was anticipated in the business plan for the new competence centre. As far as the employees in the Finnish location are concerned, various soft methods of employment reduction have been used, such as outplacement and generous redundancy packages. Setting up the competence centre in Slovenia has also had a positive impact on employment within suppliers, as approximately 90% of inputs are provided locally. The assessment of this impact for suppliers is not available.

Impact on quality of jobs

Quality of jobs at the heat exchanger competence centre is slightly higher than in Danfoss Trata in general. At the end of 2010, the share of white-collar workers in the Danfoss Trata location in Ljubljana represented 33.3% of all employees. Of 45 newly employed workers in the new competence centre in Kamnik 18 (40%) are white-collar workers, of whom 5 are in the development department. Thus, the skill level of employees in the competence centre is slightly higher than in the other parts of Danfoss Trata. This is mainly due to the fact that the competence centre includes a research centre for heat exchangers, plus the engagement of top people with the knowledge of district heating, welding and pressing. In fact, Danfoss Trata has very specific demands as far as employment is concerned; for top technical positions it strictly employs only mechanical engineering graduates, with specialisation in power power-related studies. Establishing the competence centre in Kamnik also involved the transfer of some executive positions to Slovenia. Apart from managing the local unit in Slovenia, these people also manage the heat exchanger-related activities of other District Energy production units around the globe. The knowledge required for these tasks is very specific and could be acquired within Danfoss Trata only through a learning-by-doing process.

Anticipation and management of skills development

The needs of the new competence centre for white-collar workers have been carefully anticipated and assessed by the business plan for the establishment of the centre. The company's main approach in attracting employees for white-collar positions has been to search for already experienced engineers on the labour market. With attractive offers, Danfoss Trata succeeded in attracting engineers of the required profile and quality in a period of just three months. In the next three months they acquired the necessary specific skills through a learning-by-doing process on the spot, so that within six months all these people were fully operational in the new competence centre.

Anticipation of employment quantity and quality needs in Danfoss Trata is also made in the context of a product development process which analyses trends with regard to climate change, related policies and other drivers and makes suggestions on how the company should react, on what products and processes it should focus in the future. An important tool within the Danfoss' corporate Product Development Programme is the so-called Front-End Process, which is essentially systematic idea generation based on specific target product and geographical areas. When a target area, both product-wise and geographically, is defined, a systematic process of ideas generation begins within the company and at customer workshops. Typically this process yields hundreds of ideas which are clustered, prioritised, and combined until a manageable number are left. Around 10–20 ideas are selected. They are further elaborated on in terms of commercial and technical aspects until only 5–10 ideas are ready for business case creation. Those ideas are then evaluated both commercially and also from the strategic and feasibility point of view. This then ends up in portfolio selection session whose result is a project roadmap.

Apart from searching for the highly skilled employees for the competence centre on the labour market, the main method of managing the quality of labour force issues within the new centre has been internal training. The knowledge in Danfoss Trata in general and specifically in the new competence centre is of a rather specific nature and exists only in Danfoss Trata. Therefore, learning-by-doing has been the prevalent and by far the most efficient type of training. Internal training goes on not only in Danfoss Trata but also in other parts of the Danfoss corporation. Thus, in the six months before the new competence centre was opened, 45 employees of Danfoss Trata regularly visited Finland for specific training related to the production of heat exchangers. In addition to this specific training, all the new employees in the competence centre underwent regular introductory training for all the new employees in the company. In 2010, a series of 22 introductory training sessions in various areas was prepared, which the new employees completed in the first few weeks, upon agreement with their immediate leader. Employees of the new competence centre also participate in all other regular training activities in Danfoss Trata. In 2010, on average, each employee received 27 hours of training, of which 46% consisted of internal training. Danfoss Trata has three types

of training for its employees: (i) individual training (seminars, courses, training for new employees) related to a particular job, (ii) group training (team learning and discussions, resolution of particular and / or conflict situations), (iii) periodical training of all employees (general issues, such as safety at work, labour relations, etc.).

Collaboration approaches

One of the important factors that led to the decision to establish the competence centre in Slovenia is the long-lasting cooperation of Danfoss Trata with local research and development institutes and universities. This cooperation mostly takes the form of joint work by employees of Danfoss Trata and these institutions on particular projects and, thus, has a positive impact on the quality of the employees in the competence centre. In the case of the heat exchanger competence centre, the company established cooperation with the Faculty of Mechanical Engineering of the University of Ljubljana (Laboratory for Forming, Laboratory for Measurement in Process Engineering), but also has an Indian partner, HCL India, and is establishing cooperation with the University of Lund in Sweden.

Management claims that the main success factor and risk for the successful relocation of heat exchanger production to Slovenia was related to sufficiently fast setting up of the competence centre in the new location in a reasonably short period, i.e. predominantly the risk of getting enough high quality employees in six months. This has been successfully managed by a combination of head hunting for highly skilled people on the job market and internal training.

Public authorities contributed to the project development of the competence centre through the subsidy of the Public Agency of the Republic of Slovenia for Entrepreneurship and Foreign Investments within the 'FDI Co-financing Grant Scheme' in the range of less than 10% of total investment. Costs/expenses eligible for co-financing by the subsidy include costs of tangible and intangible investments, and of creating new jobs arising directly from the investment project. The interviewees did not want to disclose in more detail for what purposes the subsidy was used.

For Danfoss Trata establishment of the competence centre for heat exchangers has been a very important business opportunity in a very promising area. It was not an 'involuntary' accommodation to some new rules and regulations. The new activity has brought new high quality jobs. The costs related to the project are typical costs of establishing a new line of business, i.e. investment in new facilities, recruitment and training of employees, etc. In this regard, the project has no specific unusual costs.

Conclusions and recommendations

The case study suggests the following conclusions and recommendations:

- For Danfoss Trata, green business practices are not a reaction to some external rules, but are the core of its operations; they represent the company's main competitive advantage and business opportunity. This is probably how companies should look at green business practices.
- Danfoss's Product Development Management department systematically analyses trends with regard to climate change, related policies and other drivers and makes suggestions on how the company should react, on what products and processes it should engage in in future.
- Employment quantity and quality needs are anticipated within individual projects. Thus, the employment impact of establishing the new competence centre was anticipated in the business plan for centre.
- The experience of Danfoss Trata shows that companies that belong to large multinationals to a large extent tend to resolve their skills and training needs within the parent company network.
- The company needs to have a permanent internal training process, with green business practices being one of the topics. Ad hoc training is linked to the specific needs of specific projects, be they green or not. In Danfoss Trata, such ad hoc training was done within the foreign parent company network.
- The experience of Danfoss Trata shows that companies need to establish permanent cooperation with research and training institutions which are of specific importance for their line of business.

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