

**Summary of the Operation Performance Evaluation Review**  
**Review evaluation of bottle production plants**  
**January 2009**

## **The project**

This report covers two investment streams in cooperation with a global glass production group. More specifically, the project involved bottle production plants. Since 2001 the European Bank for Reconstruction and Development (EBRD) has been making extensive direct and indirect investments in two bottle production plants (brownfield and greenfield) that are situated in a country of operations. These investments take the form of both loan and equity.

## **Project rationale**

The Bank had a compelling project rationale with regard to Plant A. Through its Regional Venture Fund (RVF) programme, the EBRD had already been involved with Plant A. However, this involvement was not successful. After this initial disappointment, the Bank was keen to turn this former state-owned plant around in cooperation with the strategic investor. Concerning Plant B, the rationale was driven by the EBRD's aspiration to develop sound business relations with the global glass production group. To do so, the Bank has aligned several operations with the group's geographical strategy for this region. Therefore, the Plant B project strengthened the business ties between the EBRD and the group.

In the group's overall country strategy, Plant B represented the most ambitious strategy. It sought to establish a strong and unrivalled position in the country's market. The glass production group expected the market in that country to be the largest revenue source for its glass-packaging segment. This has already been achieved.

## **Achievement of objectives**

The major objective for Plant A was to turn around what was once a bankrupt venture and transform it into the major bottle producer in the region. In contrast, the objective for Plant B was to build the largest bottle production facility across the regions thereby taking full advantage of the economies of scale. The OPER team has rated the overall achievement of the objectives as *Good*.

## **Overall assessment**

The projects are rated *Successful*. Under the group's ownership and management, Plant A has successfully achieved a turnaround from the bankruptcy and is fully operational. It also added a new furnace that was financed from the EBRD loans. The construction of Plant B experienced some difficulties due to harsh climate. Despite this, they began production as scheduled with three furnaces that were installed with the help of EBRD financing.

The achievement of objectives is considered *Good*. The production volume has picked up and has shown strong signs of growth. However, the financial performance of the plants is yet to be closely monitored. Therefore, the project financial performance is rated *Satisfactory*, while the glass producer's financial performance is rated *Good*. Both plants produce lightweight bottles that are progressively becoming the market standards in the country. Plant B had a significant impact on the glass container market in terms of production outputs, which fostered local supplier markets in the region.

Both plants positively influenced the conventional glass production industry by introducing better quality standards and production norms. Overall transition impact is considered *Good* despite certain commercial-related risks which are still considered *High*.

There are certain concerns pertaining to the environmental dimension. The extent of changes is considered *Outstanding*. However, the actual environmental impact is hard to assess due to neither the Bank nor the local authorities engaging in appropriate monitoring. Bottle recycling and significant energy inefficiencies from furnaces are major issues to be tackled. The environmental performance is assessed as *Satisfactory* tending toward *Marginal* though.

The projects had a just rationale and the Bank's additionality is *Verified in all Respects*. This rating is underscored by the fact that the Bank used a long-term limited recourse financing scheme for post-completion. However, neither plant has declared the project completion to date and remain under the glass production group's completion guarantee. Bank handling is considered *Satisfactory* but several remarks have been made for future consideration. The return to the Bank's loans appears to be *Satisfactory* resulted from a series of loans with declining margins determined according to the market conditions.

### **Transition impact and the Bank's additionality**

The OPER team has rated the transition impact at the corporate level as *Good*. This rating particularly reflects the turnaround of Plant A. Two positive factors are identified for good transition impact:

- the glass producer's regular and systematic corporate training programme, which enabled employees to catch up with good business practices and new working standards
- a localisation strategy that provided local staff with a large degree of operational responsibility.

Transition impact at industry/country level is shown in three ways:

- introducing greater competition through best technology to produce lightweight bottles
- contributing to market expansion by strengthening forward and backward linkages
- demonstration effects of new standards and new products of better quality.

The OPER team has assessed this transition impact as *Excellent*. Plant A effectively competes with the conventional market leader in the region, sharing the market of lightweight and premium quality containers at 31 per cent to 62 per cent. The region has recorded an increase of glass container output by 143 per cent in 2006. Plant B has generated an outstanding greenfield achievement in its region. In addition, the two furnaces financed from the loans pushed Plant B's region into the top three regions (out of some 30 regions) in terms of glass production in 2006.

### ***Transition risks***

The OPER team considers that the risks are still *High*. There are two risk elements:

- The dependence on a monopoly supplier of materials and the challenging logistics of Plant B could pose significant commercial risks.
- Sustainability and environmental costs are significant as the plants are highly energy inefficient and produce a large number of non-returnable bottles. Cullet collection through a returnable bottle scheme could significantly reduce the consumption of raw materials and

energy. The lack of initial policy dialogue must have generated significant opportunity costs for the industry.

- Additional investments, expansion and overcapacity combined with uncertainties in the beverage container markets could pose another set of considerable risks. Glass bottles compete with plastic containers and cans. The latter is expected to grow rapidly. Excessive expansion to achieve economies of scale might create an overcapacity situation in the future. The competitive situation can also be influenced by future regulations regarding solid waste disposal.

The Bank's additionality is regarded as *Verified in all Respects*, particularly in financial terms.

### ***Environment***

The overall rating for environmental impact is *Satisfactory* although some issues and concerns still remain. The changes that the two investment streams have brought to the project sites are assessed as *Outstanding*. This rating derives from

- very positive environmental and socio-economic changes compared with the period of the RVF's involvement
- negative environmental changes of the largest greenfield glass production plant including risks for future operations such as non-returnable bottles and high energy inefficiency.

The OPER team considers that the major issues at present for the two plants are to improve energy efficiency and to tackle future recycling.

There currently is no general energy efficiency plan with measurable objectives. The two plants do not have any energy-saving goals, and only historical data are available. Specific energy consumption data for the furnaces and the annealing Lehr (the long, flat oven that heats the bottles and then gradually cools them) are not available. The low priority given to issues around energy efficiency in production is exacerbated by local environmental regulations and practices which only recognise the nominal figures provided by the equipment manufacturers.

These issues pose a challenge as well as an opportunity given that growing production is in fact supported by the prevailing practice of not returning bottles. Although the demand for glass containers is still increasing, a step to initiate a local recycling scheme would not only guide the market toward sustainability but also improve the energy efficiency of the plants. The social and environmental responsibility of the largest glass bottle manufacturer is significant, as are the expected benefits.

### **Bank handling**

The investment is characterised as a repeat, retroactive financing that has no lender's supervision during pre-completion. With respect to these issues, a few lessons learned have nevertheless been articulated for consideration in future transactions. Overall, Bank handling is considered *Satisfactory*.

### **Main OPER issues and lessons learned**

**A successful production performance is required in order to turn around an old-fashioned plant.** A large capital investment itself does not necessarily promise transition of a brownfield plant. Although the rationale for additional financing was weak, a series of additional investments in an ill-managed plant was made. This only increased the economic unfeasibility of

the plant in this project. Once various key factors, such as a long-term corporate vision and professional capacity to handle new technology, were effectively combined to bring about change, the production could pick up and transition at corporate level follows.

**The production of cycle analysis and sustainability assessment could minimise environmental issues and their detrimental effects on the economy.** A large-scale project involves a significant social responsibility. In this project the Bank financed a very large production plant that sought to maximise turnover and capacity. The plant was highly energy inefficient and generated huge quantities of solid waste in the region. Once production had started, it was impossible to redress these issues.

The Bank could have encouraged sustainability if it had imposed stricter covenants on the technical performance of the plant and the machinery. In order to fully comprehend the negative impact of, for example, increasing waste and emissions, as well as the positive effect of consumer preferences, a complete cycle analysis of all phases (inputs and outputs) should be included in the appraisal of large industry projects. Such an analysis would, among other things, look at recycling and losses to the environment.

**The parent company's environmental standards need to be carefully assessed while undertaking a project that has a large environmental impact.** A subsidiary in a country of operations is less likely to demonstrate good environmental performance than its parent or sponsor company. Hence, the parent company's environmental policy and standards can limit the expected environmental performance of the project. The EBRD can mitigate this by urging the parent company to raise their environmental standards.

**A small deviation in the estimated unit costs in large industrial plant production can easily result in significant cost overruns.** The scale of the problem is proportional to the size of the planned facilities. Large facilities would require large additional costs and more time to resolve any problems. Consulting local experts for designing the facilities could prevent unnecessary problems, increase the accuracy of cost estimates and mitigate local regulatory risks.

**Capital costs estimates are important in project finance structure.** Technical issues should be assessed in relation to their medium-term implications on the project performance as well as the company's competitive position. Therefore, the pertinent technical specifications, market value and estimated lifetime of the major production machinery need to be made available to the lenders.

In case of in-house design or intra-group equipment supply, the machinery performance and residual value in comparison with alternative solutions (such as new equipment) are important factors for the procurement as they affect production as well as the project life and returns. An independent technical review would be worthwhile in order to ensure the integrity of the project.