

Energy efficiency measures at Energomashspetsstal (EMSS) steel plant, Ukraine

The EMSS machine building plant is implementing a JI Project to modernize production and improve the quality of the product.

The project includes four energy efficiency improvement subprojects. The subprojects include the reconstruction of thermal and heating furnaces, the installation of a new vacuum system, the installation of an arc ladle furnace, and the modernization of the press equipment.

EMSS will be able to reduce direct and indirect CO₂ emissions equivalent to approximately 1 million tonnes of CO₂e which can be sold as ERUs on the international emission reduction market.



AKB Fores co-generation gas power portfolio, Bulgaria

This JI project was implemented at three factories in Bulgaria owned by AKB Fores. The chemical factory, Polimeri JSC, the paper mill factory, Kostenets HHI JSC and the District Heating Company Kazanlak. At each factory AKB Fores installed a highly efficient cogeneration facility for combined heat and electricity production with 22 MW_e, achieving emissions reductions of approximately 1 million tonnes of CO₂. The emission reductions from the project were purchased by the Dutch Government, represented by SenterNovem.

Global Carbon developed all the documentation for this project and supported both the buyer and seller in the entire process of verifying and selling the emissions reductions.

The investment is estimated at around 20 million Euro and will be financed from a combination of bank loans, own funds, AKB Fores, and the carbon revenues.



Carbon Potential – You may have a direct source of income within your company that will not require any additional investment.

Global Carbon specialises in assisting companies to release carbon potential from energy efficiency projects, which either already exist or are in the implementation phase.

Global Carbon provides the following services:

- Consulting
- Carbon Audit
- Project Development and Management
- Brokerage

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Earning Profits from greenhouse gas reduction.

Energy efficiency measures as a direct source of income.

As a result of the Kyoto Protocol, agreed under the United Nations Framework Convention on Climate Change, it is possible to generate a healthy revenue stream by improving the efficiency of production and reducing your energy costs. Efficiency improvements can typically come from the following areas:

- Replacing or modernizing old and outdated equipment
- Converting to more cost effective fuel sources
- Using renewable energy sources

Projects targeted at reducing energy costs, typically, reduce carbon emissions that can be converted to Emission Reduction Units (ERU), which can then be sold on the international market.

For Ukraine, Russia, and Bulgaria Joint Implementation (JI) projects are not only an instrument to attract investment but also, a unique opportunity to realise the potential in already existing projects, providing a source of profit from the sale of emission reduction units.

Nearly all industrial sectors have the potential to take advantage of the Kyoto Protocol. Global Carbon has already had success in the following sectors:

- Power industry
- Metallurgical industry
- Oil industry
- Gas industry
- Chemical industry
- Mining industry
- Construction materials industry (cement)



The role of Global Carbon is to assist our clients in realizing the value of the ERUs by progressing through the following stages:

Carbon Potential Assessment

Global Carbon will quickly assess the potential of your organization to take advantage of the JI mechanism by estimating the potential ERUs that could result from your portfolio of improvement projects. Global Carbon has a proven track record of achieving a higher than industry average, amount of ERUs from JI Projects.

This initial assessment can be undertaken in a matter of days and is referred to as a **carbon audit**.

Preparation and Approval of the PDD

The Project Definition Document (PDD) is a key document required to gain United Nations approval. Global Carbon will develop the PDD, which provides the technical details of the project, and arrange for the required audit of the project by independent authorized company.

Realization of the ERUs

The final step of the process is to monitor and verify the emissions actually reduced and to export the resultant ERUs to an international market. Global Carbon provides support through the whole Carbon life cycle, assisting in the annual monitoring process and ensuring the independent audit of real Emission Reductions that have been generated. Global Carbon will then act as your broker trading the ERUs on an appropriate exchange to generate the revenue.

The fluctuation of the ERU price is in general connected with the price movement of secondary CER which is shown in figure 1.

Figure 1: Fluctuation of the secondary CER price in EUR (source Point Carbon)



over 30 projects in the pipeline and confidently expects all to be successfully registered, having had no rejections at any stage so far.

Utilization of Coal Mine Methane at the A.F. Zasyadko coal mine, Ukraine

Global Carbon's A.F. Zasyadko coal mine project is the largest JI project in Ukraine, and the largest Coal Mine Methane utilization project in Central and Eastern Europe. This is the first Joint Implementation project to have achieved final international verification of the produced ERUs. These ERUs have been exported and are to be sold to any foreign buyer.

Using 24 combined heat and power (CHP) generation modules and five gas filling stations, the mine is utilising methane generated at the mine, previously considered as a waste, to power two Thermal Power Plants (TPPs). The energy created is used primarily for operating the mine and any excess is sold to the region network.

The resultant heat produced is used by the mine, and any excess is forwarded to the city heating plant, replacing the mines old boilers. Even the motor transport pool of the enterprise has vehicles adapted to use mine methane instead of the normal Diesel fuel.

As well as the 650 thousand tonnes of CO₂e generated in 2008, Global Carbon also managed to claim 1.5 million tonnes for the period 2004 to 2007, contributing to an expected overall reduction of 7.5 million tonnes of CO₂e up to 2012. All credits up to 2008 have been monitored, verified, approved, and issued in form of ERUs by the UNFCCC. These carbon credits are the first units to be issued from a JI project. Monitoring and Verification Reports of the Zasyadko CMM JI project can be found on the JI UNFCCC website <http://unfccc.int> and on the Global Carbon website www.global-carbon.com.

