



Resource-Efficient Supply Chain for Metal
Products in Buildings Sector in South Asia



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Contribution to the SDGs



Project funded by

switchasia
GRANTS PROGRAMME



Implementation Approach



"This project is really an eye opener to me. We have been in the business for the last 40 years and it's amazing to note what simple things could do to make a big difference at a very minimal cost. Through METABUILD project, we were able to reduce the monthly electricity bill by a significant amount. We were able to streamline our production processes in an environmentally friendly manner. The extent of harmful wastes generated was reduced drastically. A healthier working environment was created within the factory and in return, the productivity levels of our work force improved."

Mr. Eric L. Samuel, Deputy General Manager, U.S.S. Engineering (Pvt.) Ltd., Sri Lanka

Case Studies

CO₂ emission reduction through fuel change

Location: Airmate Fan, Chittagong, Bangladesh | **Process:** Electric fan manufacturing



BEFORE

The company was operating a diesel generator (DG) set (of 1200 kVA) which consumed 360,000 litres of diesel annually. This fuel consumption led to 963 t CO₂ emission annually. The diesel costs around € 0.74/litre (€ 0.074/kWh of energy).



AFTER

The company has replaced the DG set with gas generator set (of 1000 kVA) that operates on natural gas. This fuel consumption now leads to 729 t CO₂ emission annually. The gas price is € 0.13/m³ (€ 0.013/kWh of energy).

COST: ≈ €180,600

ANNUAL SAVING: ≈ €204,000

PAYBACK PERIOD: 11 months

CO₂ REDUCTION: 234 t/year

Fuel saving by installing waste heat recovery system

Location: S R Steel Pvt. Ltd., Rupandehi, Nepal | **Process:** Billet heating



BEFORE

Heat from the exhaust/flue gas of furnace was directly released to the environment. The measured temperature of flue gas was 500°C, indicating significant energy being discarded.



AFTER

Recuperator is installed to utilise heat energy from the flue gas to pre-heat combustion air. Hot air ducts are suitably insulated. It helps in increasing the combustion air temperature from 30°C to 300°C thus saving fuel.

COST: ≈ €7,900

ANNUAL SAVING: ≈ €28,800

PAYBACK PERIOD: 4 months

COAL SAVINGS: 182 t/year

Waste reduction through welding scrap materials

Location: Lak Steel, Colombo, Sri Lanka | **Process:** Galvanised Iron (GI) pipe production



BEFORE

The galvanised iron sheet rolls were fed one by one. This generated a lot of waste because the end pieces having insufficient length was discarded as waste.



AFTER

End piece of the current roll is welded with the beginning of the next roll so that continuous feeding can be done. There is no waste due to discarded end pieces.

COST: ≈ €2,240

ANNUAL SAVING: ≈ €6,800

PAYBACK PERIOD: 4 months

METABUILD by Numbers

The information below are based on results until 31 December 2019



403

SMEs INVOLVED IN THE PROJECT



3,766

NUMBER OF RECP MEASURES IMPLEMENTED



33,953,817

ENERGY SAVED PER ANNUM (IN kWh)



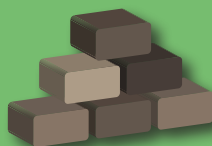
48,978,140

WATER SAVED PER ANNUM (IN LITRES)



700,436

WASTE MINIMISED PER ANNUM (IN KILOGRAMS)



4,434,782

MATERIAL SAVED PER ANNUM (IN KILOGRAMS)



2,943,875

MONETARY SAVINGS PER ANNUM (€)



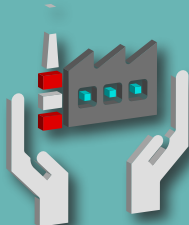
13,222

CO₂ EMISSIONS REDUCED PER ANNUM (IN TONNES)



3,049

INDUSTRY PERSONNEL SENSITISED ON RECP



133

SMEs SUPPORTED IN ACCESS TO FINANCE (A2F)



59







NUMBER OF LOCAL CONSULTANTS TRAINED



192

TECHNOLOGY SUPPLIERS ENGAGED

Country Achievements

	BANGLADESH	NEPAL	SRI LANKA
 SMEs involved in the project	240	82	81
 Kilowatt hours energy saved per annum	8,995,413	14,997,753	9,960,651
 Litres of water saved per annum	292,600	40,785,500	7,900,040
 Kilograms of waste minimised per annum	58,121	494,945	147,370
 Kilograms of material saved per annum	262,132	1,563,539	2,609,110
 Monetary savings in Euros per annum	938,514	1,556,267	449,094

The above mentioned savings are based on results until 31 December 2019



"METABUILD Project has been like a teacher to me for RECP as I had not known RECP before. We have changed our furnace; we have enhanced production and saved electricity from the repair of the compressor pipeline. We have saved energy by installing recuperator. We will continue to implement the suggestions provided by METABUILD and carry it sustainably."

Mr. Raju Timilsina, Production Manager, Saakha Steel Industries Pvt. Ltd., Nepal



"METABUILD project helped us to change our mindset. They helped us to improve our process efficiency with very low cost suggestions; in some cases without any cost. It will be highly appreciated if this kind of project takes place in the future."

Mr. Md. A Sattar Miah, Proprietor, Best One Metal, Bangladesh

About METABUILD

METABUILD is a 4-year project (2016-2020) supported by the European Union (EU) under the SWITCH-Asia Programme. This programme emphasises sustainable consumption and production in small and medium enterprises (SMEs). METABUILD is targeted specifically at the metal industry supplying to the building and construction sector in **Bangladesh, Nepal and Sri Lanka**.

The overall objectives of the project are

- (a) creating resource efficient and cleaner production processes for metal components in the building and construction sector,
- (b) contributing to improved environmental quality in the target locations, and
- (c) creating improved working and living conditions in the target countries.

Project Partners



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