



Academicth

INTERNATIONAL WORKSHOP ADVANCES IN CLEANER PRODUCTION

“CLEANER PRODUCTION TOWARDS A SUSTAINABLE TRANSITION”

University-Industry Interaction on Cleaner Production. The Case of the Cleaner Production Center at the University of Cienfuegos (Cuba)

CABELLO ERAS, J.J. ^A, SAGASTUME GUTIÉRREZ, A. ^A, GARCIA LORENZO, D. ^A, COGOLLOS MARTINEZ, J.B. ^A, HENS, L. ^{B*}, VANDECASTEELE, C. ^C

a. *Universidad de Cienfuegos, Cienfuegos, Cuba*

b. *Flemish Institute for Technological Research (VITO), Mol, Belgium*

c. *Department of Chemical Engineering, University of Leuven, Heverlee, Belgium*

(*) Corresponding author, luchens51@gmail.com

Abstract

Universities are key stakeholders in teaching, researching and supporting the implementation of cleaner production activities. This case study discusses the experience of establishing and operating the Cleaner Production Center at the University of Cienfuegos (Cuba).

Establishing, starting-up and running the center during its first four years of activity was supported by two projects targeted to inter-university cooperation. The collaboration allowed to establish a master program on cleaner production which acts as a bridge between the university, and the production industry and the services sector in the province of Cienfuegos. Currently 32 students from the first two promotions graduated and the program of two other promotions is ongoing. The master thesis research works are defined improving the environmental performance of the companies or organizations the student originate from. This results in a measurable improvement of the air and surface water quality in Cienfuegos city. An estimated yearly reduction of the emission of 60 000 ton of carbon dioxide equivalents and of 400 MWh at a cement plant have been realized.

Research activities currently target the pollution inventory of Cienfuegos, energy production from local biomass, and establishing indicators for sustainable development for Cienfuegos. The inter-university collaboration resulted in several publications in international peer reviewed journals.

The successful inter-university North-South collaboration between Cuba and Belgium, targeted at capacity building, transfer of experience and expertise, proved to be most crucial during these first years the center was active. It allowed generating the necessary funds which are often difficult to raise in developing countries. Therefore this is a unique case of building academic experience on Cleaner Production.

Keywords: *cleaner production center, inter-university cooperation, master training, research*