

## Adaptation to Climate Change in Industry: Demonstration Projects for Water Saving Through Eco-Efficiency Approach



Data of Your Paper



### Topic

- Resilience
- Lifestyle
- Building
- Resources
- Tourism
- Energy

### Title of the Paper

Adaptation to Climate Change in Industry: Demonstration Projects for Water Saving Through Eco-Efficiency Approach

### Form of Presentation

- Poster
- Presentation

### Short Description (maximum 2500 characters)

In order to establish the necessary strategies and enhance institutional capacity for Turkey to combat and manage the effects of climate change, a United Nations Joint Programme titled "Enhancing the Capacity of Turkey to Adapt to Climate Change" was carried out between 2008-2011. Within the scope of the Joint Programme, risks that Climate Change poses to industrial enterprises were very much emphasized and UNIDO Eco-efficiency (Cleaner Production) Programme was implemented as the industry component of the Joint Programme.

In the context of UNIDO Eco-efficiency (Cleaner Production) Programme which was carried out by United Nations Industrial Development Organization (UNIDO) and Technology Development Foundation of Turkey (TTGV) with the consultancy of Prof. Dr. Göksel N. Demirer (Middle East Technical University) cleaner production demonstration projects are implemented in the Seyhan River Basin Area (Adana, Kayseri and Niğde) in addition to national capacity development activities.

As the demonstration projects, eco-efficiency (cleaner production) applications which improves environmental and economical performance were implemented in 6 industrial facilities analyzing production processes, water consumption and wastewater generation. As a result of applications, 784,550 m<sup>3</sup> of water was saved annually besides 4,947,000 kWh savings achieved in energy consumption. Thanks to energy saving, 978 tons/year of CO<sub>2</sub> emission was avoided. Not only water and energy but also raw materials, chemical and manpower were saved as a result of project activities which decreased associated costs.

Throughout the applications below analyses/approaches were followed:

- Environmental Benchmarking (using Environmental Performance Indicators)
- Raw Material Cost Analysis
- Material Flow Analysis

- Water Balance

**Short Description** (maximum 2500 characters)

In order to establish the necessary strategies and enhance institutional capacity for Turkey to combat and manage the effects of climate change, a United Nations Joint Programme titled “Enhancing the Capacity of Turkey to Adapt to Climate Change” was carried out between 2008-2011. Within the scope of the Joint Programme, risks that Climate Change poses to industrial enterprises were very much emphasized and UNIDO Eco-efficiency (Cleaner Production) Programme was implemented as the industry component of the Joint Programme.

In the context of UNIDO Eco-efficiency (Cleaner Production) Programme which was carried out by United Nations Industrial Development Organization (UNIDO) and Technology Development Foundation of Turkey (TTGV) with the consultancy of Prof. Dr. Göksel N. Demirer (Middle East Technical University) cleaner production demonstration projects are implemented in the Seyhan River Basin Area (Adana, Kayseri and Niğde) in addition to national capacity development activities.

As the demonstration projects, eco-efficiency (cleaner production) applications which improves environmental and economical performance were implemented in 6 industrial facilities analyzing production processes, water consumption and wastewater generation. As a result of applications, 784,550 m<sup>3</sup> of water was saved annually besides 4,947,000 kWh savings achieved in energy consumption. Thanks to energy saving, 978 tons/year of CO<sub>2</sub> emission was avoided. Not only water and energy but also raw materials, chemical and manpower were saved as a result of project activities which decreased associated costs.

Throughout the applications below analyses/approaches were followed:

- Environmental Benchmarking (using Environmental Performance Indicators)
- Raw Material Cost Analysis
- Material Flow Analysis

- Water Balance