

Report on Baseline Emission Inventory in Operation Terminal 3 of Tanjung Priok Port



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PREFACE

This report will present the result of emission inventory of Tanjung Priok Port as performed by the Center for Transportation and Logistics Studies, Universitas Gadjah Mada (PUSTRAL-UGM) in collaboration with Operation Terminal 3 of Tanjung Priok Port and supported by funding from Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC) through the United Nations Environment Programme (UNEP).

The emission inventory is aimed to measure air pollution level and as reference to take mitigation action on the impact of air pollution from port activities.

The researchers contributing in this study include Restiti Sekartini, Tory Damantoro, and Yusa Cahya Permana. In this occasion, we shall give our greatest appreciation and gratitude to the management of Operation Terminal 3 of Tanjung Priok Port for their cooperation and dedication to support our researchers in collecting the field data, in discussing research assumptions and in formulating several scenarios that are used in this study. We do realize that without their support, this study will not produce the expected result. In addition, we shall express our gratitude to the Sustainable Port Development Project of GIZ which has facilitated close cooperation between PUSTRAL and Operation Terminal 3 as well as to CCAC and UNEP which had provided comprehensive support to the study.

We do hope that this study would be useful for environmental preservation, particularly that of in Operation Terminal 3 of Tanjung Priok Port and other Indonesia ports in general.

Sincerely,

Research Team

The Center for Transportation and Logistics Studies, Universitas Gadjah Mada

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EXECUTIVE SUMMARY

The Managing Directors of Tanjung Priok Port expressed their strong commitment in implementing sustainable port development and operation. Therefore, they do welcome the technical support from UNEP which has assigned to PUSTRAL to study Baseline Emission Inventory of air pollution from port activities. The Emission Inventory (EI) is necessary in the development planning and operation of ports in which EI could provide important information on air quality and could facilitate the role of the port in maintaining air quality in DKI Jakarta Province.

After conducting a series of discussions with Tanjung Priok managing directors, internal workshop with Tanjung Priok staffs (on 13 June 2014) and workshops with related stakeholders (on 15 and 16 July 2014), the following agreements regarding the implementation of the study had been concluded:

- The area of the study is limited to Operation Terminal 3 (OT 3) which has become the pilot area for service improvement for HSE (Health, Safety and Environment) aspects;
- The statistical data used in this study are those collected from January to March 2014 which is used as the initial analysis on the current data availability and management as compared with the expected available data for EI analysis.
- Based on the business process of OT 3, the sources of emission may include vessel (ocean going vessel and domestic), harbor craft, cargo handling equipment (CHE) and truck operating in OT 3 area.
- The pollutants being measured include NO_x, CO, PM¹⁰, PM^{2.5}, SO₂, Black Carbon and CO₂.
- Methodology used in this study is based on the one that is developed by United States-Environmental Protection Agency, US-EPA – ICF International in 2009, “Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories,” using “streamlined bottom-up” approach (taking into account energy consumption and activity of the emission sources); therefore, in the case of data are not available, the study will use data from relevant literatures.
- More accurate data regarding vessel could be acquired from Port Authority/Harbor Master of Tanjung Priok Port. It is agreed that the data shall be used for the next study.

The emission inventory performed successfully in Tanjung Priok Port. However, to achieve more accurate result and to simplify the implementation of regular emission inventory as well as to estimate emission in the future, it is necessary for TO 3 to redesign their data management to be

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