

## Work Package description

|                         |                     |                  |                    |
|-------------------------|---------------------|------------------|--------------------|
| Work Package number     | WP3                 | Type of activity | Analysis & Studies |
| Work Package title      | Supporting Analysis | Start month      | September 2010     |
| Lead beneficiary number | P19                 | End month        | May 2013           |

### Aim/Object

Work package 3: Analysis, with promotional actions to be taken in WP2 and WP6 and for the strategy, which will be developed in WP6.

In particular calculate the emissions from ships in the partner ports (task 3.1), assess the need for environmental infrastructure in the partner ports (task 3.2), and investigate the development of energy product markets (task 3.3)

The aim is to provide shipping companies and ports with a basis for decisions, study the availability of external energy sources in ports (task 3.4), collect information on existing port dues systems (task 3.5), analyse sustainable shipping and port trends (task 3.6) and collect information on funding mechanisms (task 3.7).

### Description of work package activities and role of partners

Task 3.1 "Air emissions by ships in the partner ports". A baseline study will be made regarding the state of air emissions by ships. Calculations on the emissions resulting from ships lying in the ports and from sailing in and out from each country. These calculations will be done for the years 2005, 2010, 2015 and 2020. (P19)

Task 3.2 "Demand study port infrastructure". In this task the needs for new environmentally related infrastructure such as shore side electricity will be investigated, as well as LNG supply, reception of waste water and waste in ports. This task will investigate how many investments will be realised in the coming years and how much invested money would have to raise from the ERDF main stream programmes and other financing sourced. (P17)

Task 3.3 "Study on European oil and gas, bunker, LNG and electricity markets". (P17)

Task 3.4 "Study on availability of energy logistics and structure in ports". This study will be undertaken in close connection with Task 3.2 and the deliverable will be a study report. (P17)

Task 3.5 "Analysis of existing port dues models and inter-port agreements". There are different models of "economic instruments" around and others are being developed. Furthermore there is a need to identify environmental port-to-port agreements. The information is needed to have a complete as possible picture. (P3)

Task 3.6 "Sustainable shipping and port trends". The deliverable, a study report, will not only exhibit on shore side electricity but on LNG likewise. Moreover it will show development in other segments such as hydrogen and fuel cells, kite sails, pellets for ships fuels etc. The study will have the New Hansa study as a starting point and will show developments since then. (P20)

Task 3.7 "Funding mechanisms". This handbook will be a guide to those responsible in ports and in shipping for organising financing models for environmentally related investments. Deliverable of this task will be a study report to be publically shown on the project's website. (P17)

| Partners           |   |
|--------------------|---|
| Participant number | Participant name                            |
| 19                 | University of Klaipeda                      |
| 1                  | Port of Trelleborg                          |
| 3                  | Port of Stockholm                           |
| 4                  | Port of Helsinki                            |
| 5                  | Port of Turku                               |
| 7                  | Port of Tallinn                             |
| 8                  | Port of Kalundborg                          |
| 11                 | Port of Rostock                             |
| 13                 | Stadtwerke Lübeck                           |
| 15                 | Skaane County Central Administration        |
| 17                 | Environmental Development Association (EDA) |
| 18                 | Port of Klaipeda                            |
| 19                 | University of Klaipeda                      |
| 20                 | Klaipeda Science and Technology Park        |
| 23                 | Port of Oslo                                |

| List of deliverables |  |                     |                    |
|----------------------|--|---------------------|--------------------|
| Task no              | Title  | Lead beneficiary no | Delivery date (MS) |
| Task 3.1             | Air emissions by ships in the partner ports                        | 19                  | 4                  |
| Task 3.2             | Demand study port infrastructure                                   | 17                  | 4                  |
| Task 3.3             | Study on European oil and gas, bunker, LNG and electricity markets | 17                  | 4                  |
| Task 3.4             | Study on availability of energy logistics and structure in ports   | 17                  | 4                  |
| Task 3.5             | Analysis of existing port dues models and inter-port agreements    | 3                   | 5                  |
| Task 3.6             | Sustainable shipping and port trends                               | 20                  | 4                  |
| Task 3.7             | Funding mechanisms   | 17                  | 5                  |

| Description of deliverables   |
|---|
| <p>All analyses of work package 3 will start in month 4 of milestone 1. This milestone is dedicated to do the first desktop and internet research.</p> <p>The analyses are</p> <ul style="list-style-type: none"> <li>3.1 Calculation of air emissions by ships in partner ports</li> <li>3.2 Demand study port infrastructure</li> <li>3.3 Study on European oil and gas, bunker, LNG and electricity markets</li> <li>3.4 Study on availability of electricity, gas and LNG in partner ports</li> <li>3.5 Analysis of existing economic instruments (differentiated harbour dues)</li> <li>3.6 Analysis of sustainable shipping and port trends</li> <li>3.7 Investigations on funding mechanisms (ERDF, Cohesion Fund, EIB)</li> </ul> |

| Schedule of relevant WG Meetings |                                |                     |               |          |
|----------------------------------|--------------------------------|---------------------|---------------|----------|
|                                  | Name                           | Lead beneficiary no | Delivery date | Comments |
|                                  | WG meeting, Malmö              | 1                   | 2011-02-21    |          |
|                                  | WG meeting , Oslo              | 1                   | 2011-03-11    |          |
|                                  | WG meeting , Klaipeda          | 1                   | 2011-06-16    |          |
|                                  | WG meeting , Trelleborg        | 1                   | 2012-03-06    |          |
|                                  | WG meeting, Stockholm/Helsinki | 1                   | 2011-08-30/31 |          |
|                                  | WG meeting, Helsinki           | 1                   | 2011-12-13    |          |
|                                  | WG meeting , Helsinki          | 1                   | 2012-03-26/27 |          |
|                                  | WG meeting , Stockholm         | 1                   | 2012-11-21/22 |          |

| Coordination / information exchange                       |
|---|
| Task 3.5 WG1 in WP5 LP Port of Stockholm                  |
| Task 3.1 and 3.6 Exchange of relevant datas with InnoShip |