CONTROL OF SHIP-SOURCED EMISSIONS IN TURKEY

1. Basic information

1.1	CRIS Number:	TR2010/0314.02
1.2	Title:	**Control of Ship-Sourced Emissions in Turkey**
1.3	ELARG Statistical code:	14 Transport
1.4	Location:	Ankara, Turkey

Implementing arrangements:

1.5	Implementing Agency:	Central Finance and Contracts Unit, Turkey
1.6	Beneficiary (including details of SPO):	Undersecretariat for Maritime Affairs Ministry of Environment and Forestry (co-beneficiary) Özkan POYRAZ General Director for Maritime Transport (312)232 12 07 ozpoyraz@denizcilik.gov.tr

Financing:

1.7	Overall cost (VAT excluded)[1]:	1,650,000
1.8	EU contribution:	1,519,500
1.9	Final date for contracting:	2 years after the signature of the Financing Agreement
1.10	Final date for execution of contracts:	2 years following the end date for contracting
1.11	Final date for disbursements:	1 year after the end date for the execution of contracts

2. Overall Objective and Project Purpose

2.1 Overall Objective:

The overall objective of this project is to contribute to the efforts to combat climate change by identifying and taking measures against ship sourced emissions.

2.2 Project purpose:

[1] The total cost of the project should be net of VAT and/or other taxes. Should this not be the case, the amount of VAT and the reasons why it should be considered eligible should be clearly indicated (see Section 7.6)

Strengthen the administrative capacity to ensure high level control of ship sourced emissions

2.3 Link with AP/NPAA / EP/ SAA

Accession Partnership Documents

It is indicated in Council Decision of 18 February 2008 on the principles, priorities and conditions contained in the Accession Partnership with the Republic of Turkey and repealing Decision 2006/35/EC (2008/157/EC) that alignment with, and implementation in, the maritime sector paying special attention to the effective implementation of pollution prevention should continue.

The general and important comments and recommendations of EU indicated in the accession partnership documents are;

- Alignment with EU acquis on maritime safety and effective implementation,
- Strengthening of the capacity to implement EU acquis.

In addition it is indicated in the Chapter 14: Transport Policy that "Continue alignment with, and implementation in, the maritime sector paying special attention to the effective implementation of pollution prevention. Further strengthen maritime administration, including the improvement of the safety record of the Turkish fleet and the implementation of the maritime security acquis."

National Programme for the Adoption of EU Acquis

The 2008 National Programme has been entered into force for the purposes of alignment with EU acquis and strengthening of administrative and technical capacity in order to effective implement of aligned national legislation.

Table 14.2.2/4 of the Transport Policy Chapter of the 2008 National Programme reads as follows:

"Analyzing the ships based air pollution on the basis of region, ship type, maritime traffic, types of emissions, environmental impact, and future trends; measuring regional emission levels, measuring ship-based pollution in ports, implementation of relevant international conventions, IMO rules and recommendations and EU acquis, carrying out a regulatory impact analysis regarding the sustainability of air quality on the basis of good environmental status in Turkish seas."

Progress Reports on Turkey's Move toward Accession

Turkey 2009 Progress Report:

“Progress in the maritime sector has been limited; the move of Turkey to the white list of the Paris MoU confirms Turkey's good performance as a flag state. The institutional capacity for prevention of pollution and emergency response should be improved. In both the air and maritime sectors, no progress has been made towards becoming a party to international conventions.”

National Action Plan 2004-2008

The targets of the National Action Plan 2004-2008 have been achieved large majority. The one of targets which have not yet been executed is that approval of Annexes of the MARPOL 73/78 Convention by Turkey.

2.4 Link with MIPD

Multi-annual Indicative Planning Document (MIPD) 2009-2011:

“Transport

Transport legislation aims at improving the functioning of market by promoting safe, efficient, environment sound and user friendly transport services, focusing in particular on achieving proximity with EU neighbours. Given the existing unbalance between road transport and rail in Turkey and the needs for environmental friendly projects as well as efficiency”

2.5 Link with National Development Plan (where applicable)

N/A

2.6 Link with national/ sectoral investment plans(where applicable)

N/A

3. Description of project

3.1 Background and justification:

The shipping industry transports 90% of the world's trade. Seaborne trade has been increasing since 1970’s. With this trend, the global maritime trade is expected to continue to increase in the future. Due to rising seaborne trade activity, demand for shipping services correspondingly increased. To meet the shipping requirements of increasing seaborne trade, shipping companies likewise expanded their fleet.

This growth has been accompanied by a commensurate increase in the sector’s contribution to local and global air pollution. Ocean-going vessels contribute significantly to global emissions of nitrogen oxides (NOx), sulfur oxides (SOx), and particulate matter (PM) due to the combustion of marine fuels with high sulphur content.

Indeed it is estimated that by 2020, ship emissions contributions to the World NOx and SOx inventories will surpass total emissions generated by all land-based mobile, stationary and other sources in the World. Air quality impacts from ocean-going vessels are especially significant in port cities and nations with extensive coastlines adjacent to shipping corridors. Studies making use of geographic marine activity data have estimated that about 70–80 percent of all ship emissions occur within 400 km (248 miles) of land. Pollutants such as NOx, SOx, and PM have been linked to a variety of adverse public health outcomes, including increased risk of premature death from heart and pulmonary diseases and worsened respiratory disease. Marine emission sources are therefore responsible for a growing share of the public health impacts of exposure to air pollution in many regions.

Although ocean-going vessels are among the most efficient modes of freight transport, they also generate substantial quantities of greenhouse gas emissions. Shipping is estimated to have emitted 1,046 million tones of CO2 in 2007, which corresponds to 3.3% of the global emission during 2007. International shipping is estimated to have emitted 870 million tones, or about 2,7% of the global emissions of CO2 in 2007[2]. Since the Article 2.2 of the Kyoto Protocol does not cover the marine bunkers ocean-going vessels are mainly subject to oversight by the International Maritime Organization (IMO), under the purview of the United Nations.

In this framework Regulations for the Prevention of Air Pollution from Ships were adopted in the 1997 Protocol to MARPOL 73/78. MARPOL Annex VI sets limits on sulphur oxide and nitrogen oxide emissions from ship exhausts and prohibits deliberate emissions of ozone depleting substances. The annex includes a global cap of 4.5% m/m on the sulphur content of fuel oil and calls on IMO to monitor the worldwide average sulphur content of fuel. s. The Baltic Sea Area Annex VI to MARPOL makes provision for certain areas to be designated as Sulphur Oxide Emission Control Areas (hereinafter SOx Emission Control Areas). It already designates the Baltic Sea as such an area. In these areas, the sulphur content of fuel oil used onboard ships must not exceed 1.5% m/m. Alternatively, ships must fit an exhaust gas cleaning system or use any other technological method to limit SOx emission

Merchant shipping is regarded a vital activity for Turkey as 90% of external trade relies on maritime transport. Turkey has 889 vessels and is regarded the 20th largest fleet in the world. Over the past 5 years, Turkish shipping industry has witnessed rapid growth both in number and deadweight tonnage. Between 2004 and 2008, fleet grew from 576 to 1026 in number which represents 51% increase and from 8.681.000 DWT to 13.159.000 DWT which represent 34% increase. Moreover, Turkey is located in an international route for shipping and over 50.000 ships are passing through Turkish straits yearly. In the light of these facts it can be said that Turkish seas and coastal areas are under the risk of emission pollution caused by international and domestic shipping.

Undersecretariat for Maritime Affairs (UMA) has considered the environmental risks caused by ship emissions and determined the control of ship emissions as a strategic priority within the “Maritime Sector Strategy Report” which was prepared under a SEI Project in 2010. According to the report, UMA planned to realize some activities to be carried out in order to strengthen the technical and administrative capacity for

[2] Second IMO GHG Study 2009, International Maritime Organisation (IMO), London, UK, April 2009

implementation of MARPOL Annex-VI; and EU legislation on reduction of emissions. The strategy document indicates following activities to be carried out between 2010 and 2013;

- Analyzing the ships based air pollution on the basis of region, ship type, maritime traffic, types of emissions, environmental impact, and future trends,
- Measuring regional emission levels, measuring ship-based pollution in ports,
- Implementation of relevant international conventions, IMO rules and recommendations and EU acquis,
- Carrying out a regulatory impact analysis regarding the sustainability of air quality on the basis of good environmental status in Turkish seas,
- Achieving adequate capacity at ports on waste reception from ships on the bases of implementation of MARPOL Annex-VI.
- Determination and implementation of other measures in order to reduce ship sources air pollution especially greenhouse gases.

The Ministry of Environment and Forestry (MoEF) also took action to combat with pollution caused by emissions. In 2006 MoEF published the EU Integrated Environmental Approximation Strategy (UÇES) which covers the period between 2007 and 2023 and includes sector based (air, water, waste, industry, noise, chemical) environmental strategies. Under the "Air Polution" section strategies and measures regarding reduction of emissions are listed. However, the report does not have a specific section for reduction of ship source emissions. Moreover, the IPA projects conducted by the MoEF till today and the IPA Project regarding control of air pollution in Marmara region, which will start in 2010, does not cover the ship source emissions.

In view of the above mentioned situation, there is a need for a comprehensive study which shall be conducted with the participation of stakeholders in the field of environmental protection. A project aiming at preparation of a ship sourced emissions dispersion model and identifying measures to reduce ship source emissions will contribute to the national environmental policy including the policies formulated towards EU accession

In order to take effective policy and legislative measures to control ship sourced emissions, the current situation of Turkish seas and coastal areas in respect of CO_2 NOx and SO_2 emissions should be analyzed and a dispersion model shall be developed. This model will guide the maritime administration during the preparation of the draft legislation on emission control and improving the institutional capacity which will serve to the effective implementation of the prepared legislation. Doing so, the maritime administration will consider international regulations and the EU legislation on the control of ship sourced emission. Therefore alignment of the Turkish legislation with the EU acquis will be based on a scientific study.

Climate change is happening and its impacts are already being felt, in particular in the more vulnerable countries. Unchecked, climatic changes can reach tipping points resulting in disastrous and irreversible consequences for humanity. Thus, urgent, concerted and considered action is required at all levels to ensure effective control of

GHG emissions and establish the requisite adaptive capacity, especially in developing countries[3].

3.2 Assessment of project impact, catalytic effect, sustainability and cross border impact (where applicable)

The long term catalytic effect would be a better quality of life for citizens living in the coastal areas of Turkey. The measures identified within the Strategy Document and the legal improvement will provide sustainability for the project outputs. Consistent realization of the EU's legislation and standards in the field of environment protection will result in rising awareness of the citizens of Turkey regarding the importance protecting the environment.

3.3 Results and measurable indicators:

Results	Indicators
• Online and instant emission information is provided to aid policy making by UMA	Emission dispersion software is operational by the end of the project
• Measures and targets (Administrative measures, Policy measures, Technological and operational measures) to decrease ship sourced emissions and related risks identified.	A report on related measures prepared by the end of the 5th month of the Twinning (11th month of the project) and submitted to ECD
• The Turkish national legislation on control of ship-sourced emissions is improved and aligned with the international rules and regulations including EU Acquis.	Draft legislation including the identified measures submitted to the parliament after revision by stakeholders.
• Inspection capacity of UMA regarding ship-sourced pollution in local and central level is improved.	• 100 ship inspectors from local and central level trained on enforcement pollution prevention measures and certificated by the 8th month of Twinning (14th month of the Project) • Faster and more efficient delivery of inspection services provided by the trained staff, reduced time for processing administrative documents 2 years after the completion of the project.

[3] United Nations Conference on Trade And Development, Multi-Year Expert Meeting on Transport and Trade Facilitation: Maritime Transport and the Climate Change Challenge 16–18 February 2009, Geneva

3.4 Activities:

Activity 1: Development of emission dispersion model

Under this activity, a service contract shall be carried out for developing an atmospheric dispersion model software for ship sourced emissions.

Atmospheric dispersion modeling is the mathematical simulation of how air pollutants disperse in the ambient atmosphere. It is performed with computer programs that solve the mathematical equations and algorithms which simulate the pollutant dispersion. The dispersion models are used to estimate or to predict the downwind concentration of air pollutants or toxins emitted from sources such as industrial plants, vehicular traffic or accidental chemical releases.

Dispersion modeling is used to measure and estimate effects of one or multiple pollution sources to the environment, and they are used in policy making regarding emissions control. Since such models allow estimating the effects of certain administrative regulations and policies, they are the main tools for regulatory impact analysis regarding control of air pollution.

Dispersion models utilize two types of data. One is the data from the sources of pollution (for the purpose of this project, the sources of pollution are ships sailing in Turkish waters), and the other type of data is geographical, such as air, weather and sea conditions. Both types of data are already available to the Administration instantly, from the following sources:

- YAKAMOS decision support system established by UMA. YAKAMOS is a multi-tier geographical information system (GIS) which analyzes the various environmental, economical, demographical, and supplemental data, and uses critical mathematical models to produce the optimum crisis management information by displaying the results on the maps. Turkish State Meteorological Services is also providing instant meteorological data for the system

- The retrospective data collected from the Turkish Automatic Identification System (AIS) system regarding the movement of the vessels within Turkish seas and ports can be classified and used in the process.

- The Ministry of Environment and Forestry has established air quality measurement stations at 81 provinces between the years 2005 and 2007 for accurate measurements of air pollutants, preparation of air pollution policies and improvement of overall air quality. The National Air Quality Monitoring Network consists of a total of 114 stationary and 3 mobile stations. All these stations are capable of measuring SO_2 and PM parameters and certain stations can also measure NOx, CO and 0_3 concentrations. All measurements are done by full-automated systems.

So, the software needs to be capable of collecting this data from various databases of the Administration and processing the data to establish an emission dispersion model, which updates itself continuously on the basis of new data. There is no need for

onboard emission measurement from ships, as these data are already available from the Administration.

The model shall include the Straits of Turkey as the pilot areas.

The emission dispersion model shall include greenhouse gases (CO_2,CH_4,N_2O, HFCs, PFCs, SF6) considered under the United Nations Framework Convention on Climate Change (UNFCCC) process and other relevant substances (NO_X,CO, SO_2, PM,). In this context, the study will include;

- emissions from main engines, auxiliary engines and boilers of the ships,
- refrigerant gas emissions.

This activity will include utilization of proper internationally recognized emission estimation methodologies and air pollutant transport models for the estimation of emissions sourced from vessels at certain selected pilot locations. A number of existing models should be selected and an evaluation to select best model shall be carried out.

Outputs of the study will be transposed into the YAKAMOS decision support system of UMA after completion of the activity. The Marine Environment department and the Information Technology Department of UMA will carry out the necessary work.

Activity 2: Preparation of an action plan for the administration regarding Decreasing ship source emissions

An action plan shall be prepared with measures to decrease the targeted emissions.

Some of the internationally recognized measures which will be the base of the study are indicated at the table below:

Scope of Intervention	Measure
Technology and Energy	• Efficient and Lower-emitting propulsion systems • Clean fuels and alternative energy sources • Ship design • Emission control technologies
Operational	• Speed reduction • Route selection • Monitoring of weather and sailing conditions • Collaboration among the ports
Market Based	• Environmentally differentiated rates/dues • Taxation • Industry-led voluntary schemes

(Source: United Nations Conference on Trade and Development, Multi-Year Expert Meeting on Transport and Trade Facilitation: Maritime Transport and the Climate Change Challenge 16–18 February 2009, Geneva)

The action plan will include;

- Scenarios for future emission estimations caused from ships in Turkish seas, ports and coastal areas.
- Determination of the following measures to be taken regarding reduction of ship sourced emissions;

    - Administrative measures,
    - Policy measures
    - Technological measures
    - Operational measures.
    - Market based measures

The stakeholders will actively involve in the activity and the opinions of the relevant sectors will be collected in order to develop realistic and functional targets and measures.

Activity 3: Preparation of draft legal texts to harmonize with the EU acquis and international conventions

Turkish national legislation, EU acquis and International Rules and Regulations (MARPOL Annex VI, Kyoto Protocol) on control of ship sourced emissions will be examined thoroughly. The relevant legislation listed under the Annex IV of the project fiche will be the basic background for this study.

The gaps between the Turkish national legislation and the requirements of the MARPOL 73/78 Convention Annex VI and relevant regulations will be identified. The gap between the Turkish legislation and the EU acquis shall be identified. Then, the overall administrative system (both at the central and regional levels) shall be designed to meet the requirements of the acquis and international conventions (most of which are overlapping). Doing so, the responsibilities regarding control of ship-sourced emissions in Turkey will be distributed among the competent authorities by considering their establishment law, organizational capacity and personnel capacity.

Lastly, the necessary legal texts shall be drafted to align with the acquis and to provide the legal foundation of the designed administrative system.

Activity 4: Training of an adequate number of ship inspectors on enforcement of pollution prevention measures

Training on investigation of ship emissions and enforcement of measures and policies regarding the control of ship sourced emission in and outside the ports will be given to the Port and flag state officers (ship inspectors).

100 PSC and FSI officers (approximately one third of the total number of inspection officers working in the UMA) shall be trained working both in central and local level. The trainees will be selected according to the vessel traffic density of their working region and relevancy of the department they work. The schedule and duration of the training courses will be determined by the twinning team. The key personnel working in the stakeholder institutions shall also attend to the trainings and certified. The number of the personnel attending from stakeholder institutions will be determined by the twinning team and steering committee.

The trainings may include;

- Internationally recognized measures to combat with ship sourced air pollution and global warming (IMO Reports on Greenhouse Gas Study, 2009, UNCTAD Reports on Transport Emissions etc.)

- The following courses on the MARPOL Annex VI

    - Regulation 12 - Emissions from Ozone depleting substances from refrigerating plants and fire fighting equipment.
    - Regulation 13 - Nitrogen Oxide (NOx) emissions from diesel engines
    - Regulation 14 - Sulphur Oxide (SOx) emissions from ships
    - Regulation 15 - Volatile Organic compounds emissions from cargo oil tanks of oil tankers
    - Regulation 16 - Emissions from shipboard incinerators.
    - Regulation 18 - Fuel Oil quality.

- The national legislation on control of ship sourced pollution and the relevant EU acquis.

The list of the subjects is not exhausted.

The UMA premises may be used for conducting the training activities. Following the completion of the training activity the trainees will be evaluated and certificated. UMA Seafarers Examination Center (Ankara) shall be used for evaluation.

The course material will be stored on the official web site of the UMA and revised yearly in order to provide sustainability to the outcome of this activity.

3.5 Conditionality and sequencing:

There are no conditions regarding the commencement of the project.

All project activities are independent, and can be carried out simultaneously.

3.6 Linked activities

N/A

3.7 Lessons learned

It is very important to have a full time, dedicated project team, with a competent SPO. The team members should have different backgrounds, to have a spectrum of knowledge and experience to complement each other. As we have concluded from the previous two projects, the RTA assistant, the language assistant and various translators hardly have the necessary knowledge for maritime and legal translation. In this case, some members of the project team should have the necessary language skills to assist these personnel.

The project implementation should be geographically distributed, with frequent domestic study visits and trainings, etc. It is very important to have simultaneous feedback regarding the project activities.

4. Indicative Budget (amounts in EUR)

					SOURCES OF FUNDING								
			TOTAL EXP.RE	TOTAL PUBLIC EXP.RE	IPA CONTRIBUTION		NATIONAL PUBLIC CONTRIBUTION					PRIVATE CONTRIBUTION	
ACTIVITIES	IB (1)	INV (1)	EUR (a)=(b)+(e)	EUR (b)=(c)+(d)	EUR (c)	% (2)	Total EUR (d)=(x)+(y)+(z)	% (2)	Central EUR (x)	Regional/ Local EUR (y)	IFIs EUR (z)	EUR (e)	% (3)
Service		X	480,000	480,000	408,000	*85*	72,000	15	72,000				
Twinning	X		1,170,000	1,170,000	1,111,500	*95*	58,500	5	58,500				–
TOTAL IB			1,170,000	1,170,000	1,111,500		58,500		58,500				
TOTAL INV			480,000	480,000	408,000		72,000		72,000				
TOTAL PROJECT			**1,650,000**	**1,650,000**	**1,519,500**		**130,500**		**130,500**				

The service contract involves the development of software, so it is marked as INV, with a national contribution of 15%.

5. Indicative Implementation Schedule (periods broken down per quarter)

Contracts	Start of Tendering	Signature of contract	Project Completion
Service	2011Q2	2011Q3	2012Q1
Twinning	2011Q1	2012Q1	2013Q3

All projects should in principle be ready for tendering in the 1ST Quarter following the signature of the FA

6. Cross cutting issues (where applicable)

6.1 Equal Opportunity

The necessary measures will be taken in order to provide equal opportunity for all stakeholders. Especially in training programmes participation of female participants will be encouraged. Twinning team will consider the participation of female trainees while determining the place, duration and the context of the trainings.

6.2 Environment

Improved emission control from ship approaching Turkish ports will inevitably have a positive impact on the environment and especially people living in coastal areas and port areas.

The proposed trainings will increase general public awareness concerning protection of environment.

6.3 Minorities and vulnerable groups

According to the Turkish Constitutional System, the word minorities encompass only groups of persons defined and recognized as such on the basis of multilateral or bilateral instruments to which Turkey is a party.

ANNEXES

1. Log frame in Standard Format

2. Amounts contracted and Disbursed per Quarter over the full duration of Programme

ANNEX I : LOGICAL FRAMEWORK MATRIX

Project Logframe	Project Name and Number	
CONTROL OF SHIP-SOURCED EMISSIONS IN TURKEY	**Contracting Period Expires** 2 years after the signature of the Financing Agreement	**Disbursement Period Expires** 1 year after the end date for the execution of contracts
	Total Budget 1,650,000	**IPA/Pre-accession budget** 1,519,500

Overall objective	**Objectively Verifiable Indicators**	**Sources of Verification**	
The overall objective of this project is to contribute to the efforts to combat climate change by identifying and taking measures against ship sourced emissions.	Emissions of pollutants from ships decreased to 15% of their pre-2000 levels by the end of 2020.	Official website of National Air Quality Monitoring Network (MoEF) Reports of the Ministry of Environment and Forestry	
Project Purpose	**Objectively Verifiable Indicators**	**Sources of Verification**	**Assumptions**
Strengthen the administrative capacity to ensure high level control of ship sourced emissions	Regulatory and administrative framework to control ship sourced emissions established by 2014. Emissions of pollutants from ships shall be decreased by 5% by 2015 for the pilot region.	Official letter of the UMA to Prime Ministry General Directorate for Laws and Regulations regarding the submission of the Draft Legal Texts to Turkish Parliament. Monthly, Reports of the National Air Quality Monitoring Network (MoEF) Official website of National Air	The legal texts timely adopted by the Turkish Parliament.

		Quality Monitoring Network (MoEF)	
Results	**Objectively Verifiable Indicators**	**Sources of Verification**	**Assumptions**
Online and instant emission information is provided to aid policy making by UMA	Emission dispersion software is operational by the end of the project.	Reports of the technical assistance contractor, letters of UMA	
Measures and targets (Administrative measures, Policy measures, Technological and operational measures) to decrease ship sourced emissions and related risks identified.	Related policy measures adopted by the end of the end of the project.	Monthly progress reports by the RTA, 2nd Quarterly Report and Steering Committee Meeting	
The Turkish national legislation on control of ship-sourced emissions is improved and aligned with the international rules and regulations including EU Acquis.	Draft legislation including the identified measures submitted to the parliament through Prime Ministry General Directorate for Laws and Regulations after revision by stakeholders.	The official website of the Parliament.	
Inspection capacity of UMA regarding ship-sourced pollution in local and central level is improved.	• 100 ship inspectors from local and central level trained on enforcement pollution prevention measures and certificated by the 8th month of Twinning (14th month of the Project) • Faster and more efficient delivery of inspection services provided by the trained staff, reduced time for processing administrative documents 2 years after the completion of the project.	• Monthly progress reports of the Twinning Team. • Analysis and reports of UMA on quality and efficiency of service delivery in local and central level.	

Activities	Means		Assumptions
1. Development of an emission dispersion model 2. Identification of measures to decrease ship sourced emissions and related risks. a. Administrative measures, b. Policy measures c. Technological measures d. Operational measures. e. Market based measure 3. Preparation of draft legislation regarding control of ship sourced emissions 4. Training of ship inspectors on the enforcement of pollution prevention measures. ▪ Training on internationally recognized measured to combat with ship sourced air pollution and global warming (IMO Reports on Greenhouse Gas Study, 2009, UNCTAD Reports on Transport Emissions etc.) ▪ Training regarding MARPOL Annex VI o Regulation 12 - Emissions from Ozone depleting substances from	• Service Contract for Activity 1. • Twinning Contract for Activities 2-5		

refrigerating plants and fire fighting equipment. o Regulation 13 - Nitrogen Oxide (NOx) emissions from diesel engines o Regulation 14 - Sulphur Oxide (SOx) emissions from ships o Regulation 15 - Volatile Organic compounds emissions from cargo oil tanks of oil tankers o Regulation 16 - Emissions from shipboard incinerators. o Regulation 18 - Fuel Oil quality. ▪ Trining on the national legislation on control of ship sourced pollution and the relevant EU acquis. 5. Closing activities for Twinning			
			Preconditions

ANNEX II: amounts (in €) Contracted and disbursed by quarter for the project (IPA contribution only)*

	2011	2011	2012	2012	2012	2012	2013	2013	2013
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Contracted									
Twinning			1,111,500						
Service	408,000								
Cumulated	408,000	408,000	1,519,500	1,519,500	1,519,500	1,519,500	1,519,500	1,519,500	1,519,500
Disbursed									
Twinning			444,600	88,920	88,920	88,920	88,920	88,920	222,300
Service		122,400	122,400	163,200					
Cumulated		122,400	689,400	941,520	1,030,440	1,119,360	1,208,280	1,297,200	1,519,500

- Starting from the signature of the FA