



**MEDITERRANEAN ACTION PLAN (MAP)
REGIONAL MARINE POLLUTION EMERGENCY RESPONSE CENTRE FOR THE
MEDITERRANEAN SEA (REMPEC)**

Regional Expert Meeting on the possible designation of the Mediterranean Sea, as a whole, as an Emission Control Area for Sulphur Oxides (Med SO_x ECA) pursuant to MARPOL Annex VI

REMPEC/WG.50/INF.6
Date: 23 April 2021

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Original: English only

Agenda Item 2

TERMS OF REFERENCE FOR THE COMPLETION OF THE KNOWLEDGE GATHERING AND THE PREPARATIONS OF FURTHER STUDIES AS WELL AS THE FINALISATION OF THE DRAFT SUBMISSION TO THE IMO

Note by the Secretariat

SUMMARY

Executive Summary: This document presents the Terms of Reference for the completion of the knowledge gathering and the preparations of further studies as well as the finalisation of the draft submission to the IMO, pursuant to the Road Map for a Proposal for the Possible Designation of the Mediterranean Sea, as a whole, as an Emission Control Area for Sulphur Oxides Pursuant to MARPOL Annex VI, within the Framework of the Barcelona Convention.

Action to be taken: Paragraph 4

Related documents: REMPEC/WG.50/INF.3, REMPEC/WG.50/INF.5, REMPEC/WG.50/INF.6

Background

1 As presented in document REMPEC/WG.50/INF.5, COP 21¹ adopted Decision IG.24/8 on the Road Map for a Proposal for the Possible Designation of the Mediterranean Sea, as a whole, as an Emission Control Area for Sulphur Oxides Pursuant to MARPOL Annex VI, within the Framework of the Barcelona Convention, hereinafter referred to as the road map, as set out in the Appendix to document REMPEC/WG.50/INF.3.

2 COP 21 agreed to extend the mandate of the Mediterranean Action Plan (MAP) sulphur oxides (SO_x) Emission Control Area (ECA)(s) Technical Committee of Experts, until 30 April 2021, to oversee the completion of the knowledge gathering and the preparations of further studies, notably socio-economic impacts on individual Contracting Parties to the Barcelona Convention *inter alia* as indicated in the road map, including the development of their respective terms of reference, through correspondence coordinated by the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), when examining the possibility of designating the proposed Mediterranean Emission Control Area (Med SO_x ECA).

3 The Terms of Reference for the completion of the knowledge gathering and the preparations of further studies as well as the finalisation of the draft submission to the IMO, which were prepared pursuant to the road map, are presented as follows:

¹ Twenty-first Ordinary Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean ("the Barcelona Convention") and its Protocols (Naples, Italy, 2-5 December 2019).

- .1 Terms of Reference for the completion of the knowledge gathering and the finalisation of the draft submission to the IMO (LOT 1), as set out in **Appendix I** to the present document;
- .2 Terms of Reference for the completion of the knowledge gathering related to land-based emissions control measures of SO_x and Particulate matter (PM) in the Mediterranean coastal States (LOT 2), as set out in **Appendix II** to the present document;
- .3 Terms of Reference for the carrying out of the further study related to the additional analyses of fuel supply and alternative compliance methods (LOT 3), as set out in **Appendix III** to the present document; and
- .4 Terms of Reference for the completion of the knowledge gathering and the carrying out of the further study related to the additional economic impact evaluation (LOT 4 – Regional), as set out in **Appendix IV** to the present document; and
- .5 Terms of Reference for the completion of the knowledge gathering and the carrying out of the further study related to the additional economic impact evaluation (LOT 4 – National), as set out in **Appendix V** to the present document.

Action requested by the Meeting

- 4 **The Meeting is invited to take note** of the information provided in the present document.

APPENDIX I

Terms of Reference for the completion of the knowledge gathering and the finalisation of the draft submission to the IMO

(LOT 1)

**MEDITERRANEAN ACTION PLAN (MAP)
REGIONAL MARINE POLLUTION EMERGENCY RESPONSE CENTRE FOR
THE MEDITERRANEAN SEA (REMPEC)**

TERMS OF REFERENCE

Mediterranean Trust Fund

Activity 2.7.1.2: Examine the possibility of designating the Mediterranean Sea as a whole as SO_x Emission Control Area under MARPOL Annex VI and effectively implement the existing energy efficiency measures

Budget line: 1214

FOR THE COMPLETION OF THE KNOWLEDGE GATHERING AND THE FINALISATION OF THE DRAFT SUBMISSION TO THE IMO PURSUANT TO THE ROAD MAP FOR A PROPOSAL FOR THE POSSIBLE DESIGNATION OF THE MED SO_x ECA

(LOT 1)

Background

1 COP 19¹ adopted Decision IG.22/4 on the Regional Strategy for Prevention of and Response to Marine Pollution from Ships (2016-2021), hereinafter referred to as the Regional Strategy (2016-2021), which addresses the issue of the prevention of air pollution from ships in Specific Objectives 1 and 15.

2 In particular, Specific Objective 15 of the Regional Strategy (2016-2021) established a technical committee of experts, which worked through correspondence, nominated by the Contracting Parties to the Barcelona Convention, to carry out a technical and feasibility study to examine if it is appropriate, at the current stage, to put in place a road map for preparation of a submission to the International Maritime Organization (IMO) to designate as a sulphur oxides (SO_x) Emission Control Area (ECA) in certain areas of the Mediterranean Sea requiring specific environmental protection, and to explore possible further steps.

3 COP 20² agreed to include in the Programme of Work and Budget 2018-2019 of the Mediterranean Action Plan (MAP) of the United Nations Environment Programme (UNEP), also referred to as UNEP/MAP, an activity aimed at examining the possibility of designating the Mediterranean Sea, or parts thereof, as SO_x ECA(s), under Annex VI to the International Convention for the Prevention of Pollution from Ships (MARPOL) and effectively implementing the existing energy efficiency measures.

¹ Nineteenth Ordinary Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) and its Protocols (Athens, Greece, 9-12 February 2016).

² Twentieth Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (Tirana, Albania, 17-20 December 2017).

4 In this context, and on the basis of the outcome of the work of the SO_x ECA(s) Technical Committee of Experts, coordinated by the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), including the Technical and Feasibility Study³ and the initial draft submission to the IMO⁴ prepared by REMPEC, COP 21⁵ adopted Decision IG.24/8 on the Road Map for a Proposal for the Possible Designation of the Mediterranean Sea, as a whole, as an Emission Control Area for Sulphur Oxides Pursuant to MARPOL Annex VI, within the Framework of the Barcelona Convention, hereinafter referred to as the road map, which outlines the process and details the related activities.

5 According to the road map, some knowledge gathering based on existing knowledge and studies⁶ should be completed and further studies should be carried out with a view to developing a mutually agreed joint and coordinated proposal for the possible designation of the Mediterranean Emission Control Area (Med SO_x ECA) in accordance with Appendix III (Criteria and procedures for designation of emission control areas) to MARPOL Annex VI, and with the view of formally submitting it to the 78th Session of the IMO's Marine Environment Protection Committee (MEPC 78) scheduled for April 2022 (TBC), as follows⁷:

(a) Knowledge gathering:

- synopsis of the assessment (**LOT 1**);
- quantification of the impacts associated with deposition of PM_{2.5} and air toxics⁸ (**LOT 1**);
- additional detail of land-based emissions controls of SO_x and PM in the Mediterranean coastal States (**LOT 2**); and
- additional elements on the economic impacts on shipping engaged in international trade (**LOT 4 – Regional**).

(b) Further studies:

- additional economic impact evaluation, more precisely:
 - analyses of the impacts on shipping engaged in international trade as well as on trade modal shift outside the Mediterranean (**LOT 4 – Regional & National**); and
 - analyses of the impacts on short-sea shipping activity as well on the social and economic impact on Contracting Parties to the Barcelona Convention including on development for islands, insular and remote areas (**LOT 4 – Regional & National**).

³ entitled "Technical and feasibility study to examine the possibility of designating the Mediterranean Sea, or parts thereof, as SO_x ECA(s) under MARPOL Annex VI", as set out in the Appendix to document REMPEC/WG.45/INF.9.

⁴ entitled "Proposal to Designate the Mediterranean Sea area, [or parts thereof,] as an Emission Control Area for Sulphur Oxides [and Particulate Matter]", as set out in the Appendix to document REMPEC/WG.45/INF.10.

⁵ Twenty-first Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (Naples, Italy, 2-5 December 2019).

⁶ These specifically include the Technical and Feasibility Study³, the study entitled "The potential for cost-effective air emission reductions from international shipping through designation of further Emission Control Areas in EU waters with focus on the Mediterranean Sea" prepared by the European Commission as well as the study entitled "ECAMED: a Technical Feasibility Study for the Implementation of an Emission Control Area (ECA) in the Mediterranean Sea" prepared by France, as set out respectively in the Annex to document REMPEC/WG.45/INF.11 and the Annex to document REMPEC/WG.45/INF.12.

⁷ The associated package of work is identified and given in **bold**.

⁸ The reference to 'air toxics' in the road map stems from the initial draft submission to the IMO⁴ that made such a reference essentially because its structure was based on the proposal to designate the North American ECA, as set out in Document MEPC 59/6/5. However, it is acknowledged that the assessment of 'air toxics' is associated with ground level ozone and, therefore, is only relevant to the designation of a nitrogen oxides (NO_x) ECA and impacts from air toxics are not likely to result from the possible designation of the Med SO_x ECA. Although the possibility of extending the scope of the Med SO_x ECA to include NO_x emissions may be pursued in the future, it is not to be considered at this stage.

- additional fuel supply and technology analyses (regional fuel production, fuel availability, and alternative compliance technologies) (**LOT 3**).

6 COP 21 agreed to extend the mandate of the SO_x ECA(s) Technical Committee of Experts, until 30 April 2021, to oversee the completion of the knowledge gathering and the preparations of further studies, notably socio-economic impacts on individual Contracting Parties to the Barcelona Convention *inter alia* as indicated in the road map, including the development of their respective terms of reference, through correspondence coordinated by REMPEC, when examining the possibility of designating the proposed Med SO_x ECA.

7 COP 21 also requested the Secretariat to update the initial draft submission to the IMO⁴ for a proposal for the possible designation of the Med SO_x ECA, under the guidance of the SO_x ECA(s) Technical Committee of Experts in line with the agreed road map.

8 To achieve this, REMPEC, the Mediterranean Pollution Assessment and Control Programme (MED POL) and the Plan Bleu Regional Activity Centre (PB/RAC), three UNEP/MAP components, are expected to lead the related activities that are grouped into the following four packages of work:

- .1 **LOT 1:** Draft submission to the IMO (Lead Entity: REMPEC, in cooperation with MED POL and PB/RAC);
- .2 **LOT 2:** Land-based emissions control measures of SO_x and PM in the Mediterranean coastal States (Lead Entity: MED POL, in cooperation with REMPEC);
- .3 **LOT 3:** Additional analyses of fuel supply and alternative compliance methods (Lead Entity: REMPEC); and
- .4 **LOT 4 – Regional & National:** Additional economic impact evaluation (Lead Entity: PB/RAC, in cooperation with REMPEC).

9 Each package of work is designed to ensure the completion of the necessary knowledge gathering or the carrying out of the necessary further studies, as specified in paragraph 5 above, and shall contribute collectively to the implementation of the road map in a complimentary manner.

10 The packages of work are distinct in that they are different in nature and different in methodology requiring potentially different specialisms to undertake the work.

11 **LOT 1** shall comprise knowledge gathering only, specifically to address the square brackets and the placeholders set out in the initial draft submission to the IMO⁴, including, but not limited to, the synopsis of the assessment⁹ and the quantification of the impacts associated with deposition of PM_{2.5} and air toxics¹⁰, and is subject to the completion of **LOT 2, LOT 3 and LOT 4 – Regional** that shall provide the necessary input¹¹ for the verification of completeness

⁹ This addresses the placeholder set out in Section 3.1 of the initial draft submission to the IMO⁴, more specifically the synopsis of the assessment related to the contribution of ships to air pollution and other environmental problems.

¹⁰ This addresses the placeholder set out in Section 5.3 of the initial draft submission to the IMO⁴.

¹¹ especially with a view to addressing all other placeholders set out in the initial draft submission to the IMO⁴, except for the placeholder set out in Section 1.1 thereof, which is related to the description of further actions towards ratification and will also need to be addressed under **LOT 1** in accordance with the road map. In doing so, other synopses of assessment, for instance related to the impact of emissions from ships on human health, could be prepared and integrated in the initial draft submission to the IMO⁴, as appropriate.

of the information gathered and, accordingly, the finalisation of the draft submission to the IMO under the guidance of the SO_x ECA(s) Technical Committee of Experts in accordance with the road map and Appendix III to MARPOL Annex VI.

12 The finalised draft submission to the IMO, which will integrate the outcome of the knowledge gathering completed under **LOT 1, LOT 2 and LOT 4 – Regional** as well as the outcome of the further studies carried out under **LOT 3 and LOT 4 – Regional** in accordance with the road map, will be reviewed and validated by the SO_x ECA(s) Technical Committee of Experts before submission to the Fourteenth Meeting of the Focal Points of REMPEC, to be tentatively held in Malta from 25 to 27 May 2021, for its review and recommendations.

Objectives

13 The principal objectives of the consultancy services will be to complete the knowledge gathering and to finalise the draft submission to the IMO pursuant to the road map with a view to more fully addressing the criteria and procedures for designation of emission control areas laid down in Appendix III to MARPOL Annex VI.

Assignment

14 For the completion of this consultancy, which shall not exceed fifty-one (51) working days in total, the Consultant shall:

- .1 attend a kick-off Meeting to be held through video-conference, preferably between **10 and 13 August 2020**, to discuss the content of the reference documents to be analysed, the scope of the assignment, as well as to collect all required information for the completion of this consultancy and to agree on the method of work and communication channel;
- .2 draft a brief kick-off Meeting report to be submitted to REMPEC reflecting the main outcomes of the meeting;
- .3 complete the necessary knowledge gathering pursuant to the road map, which shall include:
 - .1 an examination of the Technical and Feasibility Study³ and other relevant studies⁶, as well as of the initial draft submission to the IMO⁴;
 - .2 a compilation of the following tables:
 - .1 Table I: List of the main assumptions and outcomes of the Technical and Feasibility Study³ and other relevant studies⁶, including SO_x and PM emission inventories¹² by ships operating in the Mediterranean Sea¹³, emission concentrations, monetised health and environmental impacts, compliance costs to the maritime industry due to fuel surcharge or alternative fuels and

¹² Emission inventories by ships operating in the Mediterranean Sea based on real ship activity and state of the art emission factors.

¹³ The MARPOL Convention applies to ships entitled to fly the flag of a Party to the Convention or ships not entitled to fly the flag of a Party but which operate under the authority of a Party (Article 3) and, therefore, does not distinguish between domestic and international trades. This aspect should be examined, together with relevant data on marine traffic, especially since the scope of other relevant studies⁶ may include all ships operating in the Mediterranean Sea irrespective of their flag of registration and tonnage.

- technologies, as well as cost-benefit analysis of the Med SO_x ECA;
- .2 Table II: List of the placeholders set out in the initial draft submission to the IMO⁴;
 - .3 Table III: List of relevant information and data that will be collected through the completion of the knowledge gathering under **LOT 1, LOT 2 and LOT 4 – Regional** as well as the carrying out of the further studies under **LOT 3 and LOT 4 – Regional** in accordance with the road map; and
 - .4 Table IV: List of criteria for designation of an emission control area, as set out in Appendix III to MARPOL Annex VI.
- .3 a verification that the criteria for designation of an emission control area, as set out in Appendix III to MARPOL Annex VI (Table IV):
- .1 are appropriately addressed in the initial draft submission to the IMO⁴, taking into account Table I referred to above; or
 - .2 will be appropriately addressed when the initial draft submission to the IMO⁴ is eventually updated, taking into account Tables I, II and III referred to above.
- .4 the gathering and compilation of relevant information and data required to:
- .1 update the initial draft submission to the IMO⁴, taking into account Tables I, II and III referred to above; and
 - .2 more fully address the criteria for designation of an emission control area, as set out in Appendix III to MARPOL Annex VI (Table IV), based on the verification referred to above.
- In doing so, relevant studies, research and other materials, including, but not limited to, those related to the possible designation of the Med SO_x ECA, as well as further available information¹⁴ and data¹⁵, shall be examined, as required and where appropriate.
- .4 prepare, in consultation with REMPEC, a draft report of the knowledge gathering referred to above, including a brief summary thereof;
 - .5 finalise the report of the knowledge gathering referred to above:
 - .1 taking into account the feedback and comments provided by REMPEC following consultations within the SO_x ECA(s) Technical Committee of Experts¹⁶ as well as with IMO, UNEP/MAP, in particular MED POL and PB/RAC; and

¹⁴ This could include cost-benefit studies and measurements as well as lessons learned in the existing SO_x ECAs, especially in the North Sea, Baltic Sea and North American areas established in 2015, or rationale for evidence-based decision to adopt domestic emission control areas, for example, in China or the Republic of Korea.

¹⁵ For example, those of MED POL and those of the European Commission or the European Environment Agency (EEA).

¹⁶ These consultations will be held from 28 September 2020 until 23 October 2020.

- .2 integrating the outcomes arising from the final reports of the knowledge gathering prepared under **LOT 2 and LOT 4 – Regional** as well as the revised draft reports of the further studies prepared under **LOT 3 and LOT 4 – Regional** in accordance with the road map.
- .6 prepare, in consultation with REMPEC, written response to each set of feedback and comments received from the SO_x ECA(s) Technical Committee of Experts with a view to explaining how such feedback and comments were taken into account when finalising the report of the knowledge gathering referred to above, or providing the reason(s) why these were not taken into account;
- .7 update, in consultation with REMPEC, the initial draft submission to the IMO⁴, integrating the outcomes arising from the final report of the knowledge gathering referred to above. This update shall consist of:
 - .1 addressing, as appropriate, all square brackets set out in the initial draft submission to the IMO⁴, taking into account Decision IG.24/8 on the road map;
 - .2 addressing, as appropriate, all placeholders set out in the initial draft submission to the IMO⁴, including, but not limited to, the synopsis of the assessment⁹ and the quantification of the impacts associated with deposition of PM_{2.5} and air toxics¹⁰;
 - .3 consolidating, as appropriate, all sections with relevant information and data; and
 - .4 updating the cost-benefit analysis¹⁷, as appropriate.
- .8 finalise the updated draft submission to the IMO referred to above:
 - .1 taking into account the feedback and comments provided by REMPEC following consultations within the SO_x ECA(s) Technical Committee of Experts¹⁸ as well as with IMO, UNEP/MAP, in particular MED POL and PB/RAC; and
 - .2 integrating the outcomes arising from the final reports of the further studies carried out under **LOT 3 and LOT 4 – Regional** in accordance with the road map.
- .9 prepare, in consultation with REMPEC, written response to each set of feedback and comments received from the SO_x ECA(s) Technical Committee of Experts with a view to explaining how such feedback and comments were taken into account when finalising the draft submission to the IMO referred to above, or providing the reason(s) why these were not taken into account.

¹⁷ Even if not estimated in existing relevant studies⁶, reference should be made in the cost-benefit analysis to the fact that additional benefits are constituted also by the avoidance of damage to cultural heritage and this, together with the avoidance of poor air quality in some coastal areas, may have a positive impact on economic activity relating to tourism in the area. Health and environmental impacts by SO_x and PM are estimated in existing relevant studies⁶, including their monetised benefits if avoided. Furthermore, the highest values of monetised health benefits found in existing relevant studies⁶ should also be taken into account.

¹⁸ These consultations will be held from 7 December 2020 until 22 January 2021.

Geographical scope of the assignment

15 The Consultant will perform the assignment in his/her office/home.

Reporting

16 The Consultant shall:

- .1 prepare and submit to REMPEC, not later than **20 August 2020**, the draft kick-off Meeting report referred to in paragraph 14.2 above;
- .2 prepare and submit to REMPEC, not later than **18 September 2020**, the draft report of the knowledge gathering referred to in paragraph 14.4 above;
- .3 prepare and submit to REMPEC, not later than **20 November 2020**, the following documents:
 - .1 the final report of the knowledge gathering referred to in paragraph 14.5 above;
 - .2 the associated written response referred to in paragraph 14.6 above.
- .4 prepare and submit to REMPEC, not later than **27 November 2020**, the updated draft submission to the IMO referred to in paragraph 14.7 above;
- .5 prepare and submit to REMPEC, not later than **12 February 2021**, the following documents:
 - .1 the finalised draft submission to the IMO referred to in paragraph 14.8 above; and
 - .2 the associated written response referred to in paragraph 14.9 above.

17 All documents produced by the Consultant shall be prepared using the Established Guidelines for the preparation of reports on seminars, symposia, courses, workshops and similar events, provided in Annex II to the "REMPEC Consultant Booklet" unless instructed otherwise by REMPEC (i.e. specific document template(s) to be provided by REMPEC) and shall be drafted in English as well as provided in electronic format using software compatible with Microsoft Office 2007.

18 The following disclaimer shall appear in all documents prepared by the Consultant:

"This activity is financed by the Mediterranean Trust Fund (MTF) and implemented by the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), in cooperation with the Mediterranean Pollution Assessment and Control Programme (MED POL) as well as the Plan Bleu Regional Activity Centre (PB/RAC) of the Mediterranean Action Plan (MAP) of the United Nations Environment Programme (UNEP).

The views expressed in this document are those of the Consultant and are not attributed in any way to the United Nations, UNEP/MAP, MED POL, PB/RAC, the International Maritime Organization (IMO) or REMPEC."

Schedule

19 The work and tasks envisaged in the present document shall be completed by **15 February 2021**. The contract will be terminated upon the submission by the Consultant of the final report of the knowledge gathering, the finalised draft submission to the IMO and the associated written responses referred to above as well as certification by REMPEC that the performance of the duties and the work carried out are satisfactory.

20 Within that timeframe, the Consultant shall organise his/her work in the best possible manner and ensure the successful completion of the consultancy.

APPENDIX II

Terms of Reference for the completion of the knowledge gathering related to land-based emissions control measures of SO_x and Particulate matter (PM) in the Mediterranean coastal States

(LOT 2)

**MEDITERRANEAN ACTION PLAN (MAP)
REGIONAL MARINE POLLUTION EMERGENCY RESPONSE CENTRE FOR
THE MEDITERRANEAN SEA (REMPEC)**

TERMS OF REFERENCE

Mediterranean Trust Fund

Activity 2.7.1.2: Examine the possibility of designating the Mediterranean Sea as a whole as SO_x Emission Control Area under MARPOL Annex VI and effectively implement the existing energy efficiency measures

Budget line: 1214

FOR THE COMPLETION OF THE KNOWLEDGE GATHERING RELATED TO LAND-BASED EMISSIONS CONTROL MEASURES OF SO_x AND PM IN THE MEDITERRANEAN COASTAL STATES PURSUANT TO THE ROAD MAP FOR A PROPOSAL FOR THE POSSIBLE DESIGNATION OF THE MED SO_x ECA

(LOT 2)

Background

1 COP 19¹ adopted Decision IG.22/4 on the Regional Strategy for Prevention of and Response to Marine Pollution from Ships (2016-2021), hereinafter referred to as the Regional Strategy (2016-2021), which addresses the issue of the prevention of air pollution from ships in Specific Objectives 1 and 15.

2 In particular, Specific Objective 15 of the Regional Strategy (2016-2021) established a technical committee of experts, which worked through correspondence, nominated by the Contracting Parties to the Barcelona Convention, to carry out a technical and feasibility study to examine if it is appropriate, at the current stage, to put in place a road map for preparation of a submission to the International Maritime Organization (IMO) to designate as a sulphur oxides (SO_x) Emission Control Area (ECA) in certain areas of the Mediterranean Sea requiring specific environmental protection, and to explore possible further steps.

3 COP 20² agreed to include in the Programme of Work and Budget 2018-2019 of the Mediterranean Action Plan (MAP) of the United Nations Environment Programme (UNEP), also referred to as UNEP/MAP, an activity aimed at examining the possibility of designating the Mediterranean Sea, or parts thereof, as SO_x ECA(s), under Annex VI to the International Convention for the Prevention of Pollution from Ships (MARPOL) and effectively implementing the existing energy efficiency measures.

¹ Nineteenth Ordinary Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) and its Protocols (Athens, Greece, 9-12 February 2016).

² Twentieth Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (Tirana, Albania, 17-20 December 2017).

4 In this context, and on the basis of the outcome of the work of the SO_x ECA(s) Technical Committee of Experts, coordinated by the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), including the Technical and Feasibility Study³ and the initial draft submission to the IMO⁴ prepared by REMPEC, COP 21⁵ adopted Decision IG.24/8 on the Road Map for a Proposal for the Possible Designation of the Mediterranean Sea, as a whole, as an Emission Control Area for Sulphur Oxides Pursuant to MARPOL Annex VI, within the Framework of the Barcelona Convention, hereinafter referred to as the road map, which outlines the process and details the related activities.

5 According to the road map, some knowledge gathering based on existing knowledge and studies⁶ should be completed and further studies should be carried out with a view to developing a mutually agreed joint and coordinated proposal for the possible designation of the Mediterranean Emission Control Area (Med SO_x ECA) in accordance with Appendix III (Criteria and procedures for designation of emission control areas) to MARPOL Annex VI, and with the view of formally submitting it to the 78th Session of the IMO's Marine Environment Protection Committee (MEPC 78) scheduled for April 2022 (TBC), as follows⁷:

(a) Knowledge gathering:

- synopsis of the assessment (**LOT 1**);
- quantification of the impacts associated with deposition of PM_{2.5} and air toxics⁸ (**LOT 1**);
- additional detail of land-based emissions controls of SO_x and PM in the Mediterranean coastal States (**LOT 2**); and
- additional elements on the economic impacts on shipping engaged in international trade (**LOT 4 – Regional**).

(b) Further studies:

- additional economic impact evaluation, more precisely:
 - analyses of the impacts on shipping engaged in international trade as well as on trade modal shift outside the Mediterranean (**LOT 4 – Regional & National**); and
 - analyses of the impacts on short-sea shipping activity as well on the social and economic impact on Contracting Parties to the Barcelona Convention including on development for islands, insular and remote areas (**LOT 4 – Regional & National**).

³ entitled "Technical and feasibility study to examine the possibility of designating the Mediterranean Sea, or parts thereof, as SO_x ECA(s) under MARPOL Annex VI", as set out in the Appendix to document REMPEC/WG.45/INF.9.

⁴ entitled "Proposal to Designate the Mediterranean Sea area, [or parts thereof,] as an Emission Control Area for Sulphur Oxides [and Particulate Matter]", as set out in the Appendix to document REMPEC/WG.45/INF.10.

⁵ Twenty-first Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (Naples, Italy, 2-5 December 2019).

⁶ These specifically include the Technical and Feasibility Study³, the study entitled "The potential for cost-effective air emission reductions from international shipping through designation of further Emission Control Areas in EU waters with focus on the Mediterranean Sea" prepared by the European Commission as well as the study entitled "ECAMED: a Technical Feasibility Study for the Implementation of an Emission Control Area (ECA) in the Mediterranean Sea" prepared by France, as set out respectively in the Annex to document REMPEC/WG.45/INF.11 and the Annex to document REMPEC/WG.45/INF.12.

⁷ The associated package of work is identified and given in **bold**.

⁸ The reference to 'air toxics' in the road map stems from the initial draft submission to the IMO⁴ that made such a reference essentially because its structure was based on the proposal to designate the North American ECA, as set out in Document MEPC 59/6/5. However, it is acknowledged that the assessment of 'air toxics' is associated with ground level ozone and, therefore, is only relevant to the designation of a nitrogen oxides (NO_x) ECA and impacts from air toxics are not likely to result from the possible designation of the Med SO_x ECA. Although the possibility of extending the scope of the Med SO_x ECA to include NO_x emissions may be pursued in the future, it is not to be considered at this stage.

- additional fuel supply and technology analyses (regional fuel production, fuel availability, and alternative compliance technologies) (**LOT 3**).

6 COP 21 agreed to extend the mandate of the SO_x ECA(s) Technical Committee of Experts, until 30 April 2021, to oversee the completion of the knowledge gathering and the preparations of further studies, notably socio-economic impacts on individual Contracting Parties to the Barcelona Convention *inter alia* as indicated in the road map, including the development of their respective terms of reference, through correspondence coordinated by REMPEC, when examining the possibility of designating the proposed Med SO_x ECA.

7 COP 21 also requested the Secretariat to update the initial draft submission to the IMO⁴ for a proposal for the possible designation of the Med SO_x ECA, under the guidance of the SO_x ECA(s) Technical Committee of Experts in line with the agreed road map.

8 To achieve this, REMPEC, the Mediterranean Pollution Assessment and Control Programme (MED POL) and the Plan Bleu Regional Activity Centre (PB/RAC), three UNEP/MAP components, are expected to lead the related activities that are grouped into the following four packages of work:

- .1 **LOT 1:** Draft submission to the IMO (Lead Entity: REMPEC, in cooperation with MED POL and PB/RAC);
- .2 **LOT 2:** Land-based emissions control measures of SO_x and PM in the Mediterranean coastal States (Lead Entity: MED POL, in cooperation with REMPEC);
- .3 **LOT 3:** Additional analyses of fuel supply and alternative compliance methods (Lead Entity: REMPEC); and
- .4 **LOT 4 – Regional & National:** Additional economic impact evaluation (Lead Entity: PB/RAC, in cooperation with REMPEC).

9 Each package of work is designed to ensure the completion of the necessary knowledge gathering or the carrying out of the necessary further studies, as specified in paragraph 5 above, and shall contribute collectively to the implementation of the road map in a complimentary manner.

10 The packages of work are distinct in that they are different in nature and different in methodology requiring potentially different specialisms to undertake the work.

11 **LOT 2**, which will be overseen by the SO_x ECA(s) Technical Committee of Experts, through correspondence coordinated by REMPEC, shall comprise knowledge gathering only, specifically to provide additional details on land-based emissions control measures of SO_x and PM in the Mediterranean coastal States⁹, and shall provide the necessary input for the finalisation of the draft submission to the IMO under **LOT 1** in accordance with the road map and Appendix III to MARPOL Annex VI.

12 The finalised draft submission to the IMO, which will integrate the outcome of the knowledge gathering completed under **LOT 2** in accordance with the road map, will be reviewed and validated by the SO_x ECA(s) Technical Committee of Experts before submission to the Fourteenth Meeting of the Focal Points of REMPEC, to be tentatively held in Malta from 25 to 27 May 2021, for its review and recommendations.

⁹ This addresses the placeholders set out in Sections 8.1 and 8.2 of the initial draft submission to the IMO⁴.

Objectives

13 The principal objectives of the consultancy services will be to complete the knowledge gathering related to land-based emissions control measures of SO_x and PM in the Mediterranean coastal States pursuant to the road map with a view to more fully addressing the criteria and procedures for designation of emission control areas laid down in Appendix III to MARPOL Annex VI, in particular paragraphs 3.1.7 and 3.1.8 thereof.

Assignment

14 For the completion of this consultancy, which shall not exceed twenty-one (21) working days in total, the Consultant shall:

- .1 attend a kick-off Meeting to be held through video-conference, preferably between **10 and 13 August 2020**, to discuss the content of the reference documents to be analysed, the scope of the assignment, as well as to collect all required information for the completion of this consultancy and to agree on the method of work and communication channel;
- .2 draft a brief kick-off Meeting report to be submitted to MED POL and REMPEC reflecting the main outcomes of the meeting;
- .3 complete the necessary knowledge gathering related to land-based emissions control measures of SO_x and PM in the Mediterranean coastal States pursuant to the road map, which shall include:
 - .1 an identification of existing land-based measures for the control of SO_x and PM emissions in the Mediterranean coastal States, including relevant to transport, which will run concurrent with the proposed Med SO_x ECA and affect the same human populations and environmental areas at risk and that will be protected through the designation of the proposed Med SO_x ECA¹⁰;
 - .2 an assessment of the SO_x and PM emission reduction and subsequent corresponding reduction in adverse impacts expected to be obtained for the human populations and environmental areas at risk through implementation of the land-based measures described in paragraph 14.3.1 above; and
 - .3 an assessment of the relative costs of introducing the Med SO_x ECA in comparison with cost of land-based control measures¹¹, based on the

¹⁰ Existing EU analyses (from the European Commission and France, to mention a few), especially those contracted by the European Commission, use the same methodology as other analyses of European/EU policy initiatives, e.g. the land-based measures in the Directive (EU) 2016/2284 of the European Parliament and of the Council of 14 December 2016 on the reduction of national emissions of certain atmospheric pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC, also referred to as the National Emission Ceilings Directive (NEC Directive), and the 1999 Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (Gothenburg Protocol) to the 1979 Convention on Long-range Transboundary Air Pollution (CLRTAP), and partly also EU climate policy. This means that relevant outputs may be directly comparable to these other EU analyses, and therefore much more applicable when for example comparing additional ship emission abatement measures with possible alternative additional abatement measures in other sectors especially from land sectors.

¹¹ The impact assessment studies contracted by the European Commission have the most up-to-date shipping inventories assessed by the European Maritime Safety Agency (EMSA) and the Finnish Meteorological Institute

information obtained by means of the work referred to in paragraph 14.3.2 above.

- .4 prepare, in consultation with MED POL and REMPEC, a draft report of the knowledge gathering referred to above, including a brief summary thereof;
- .5 finalise the report of the knowledge gathering referred to above, taking into account the feedback and comments provided by MED POL and REMPEC following consultations within the SO_x ECA(s) Technical Committee of Experts¹² as well as with IMO and UNEP/MAP, in particular PB/RAC; and
- .6 prepare, in consultation with MED POL and REMPEC, written response to each set of feedback and comments received from the SO_x ECA(s) Technical Committee of Experts with a view to explaining how such feedback and comments were taken into account when finalising the report of the knowledge gathering referred to above, or providing the reason(s) why these were not taken into account.

Geographical scope of the assignment

- 15 The Consultant will perform the assignment in his/her office/home.

Reporting

- 16 The Consultant shall:
 - .1 prepare and submit to MED POL and REMPEC, not later than **20 August 2020**, the draft kick-off Meeting report referred to in paragraph 14.2 above;
 - .2 prepare and submit to MED POL and REMPEC, not later than **18 September 2020**, the draft report of the knowledge gathering referred to in paragraph 14.4 above;
 - .3 prepare and submit to MED POL and REMPEC, not later than **13 November 2020**, the following documents:
 - .1 the final report of the knowledge gathering referred to in paragraph 14.5 above; and
 - .2 the associated written response referred to in paragraph 14.6 above.

17 All documents produced by the Consultant shall be prepared using the Established Guidelines for the preparation of reports on seminars, symposia, courses, workshops and similar events, provided in Annex II to the "REMPEC Consultant Booklet" unless instructed otherwise by REMPEC (i.e. specific document template(s) to be provided by REMPEC) and shall be drafted in English as well as provided in electronic format using software compatible with Microsoft Office 2007.

(FMI) emission projections for European land-based emission sources, so when looking at the impacts (and doing a cost-benefit analysis) at any given future date, this could result in a better reflection of the actual situation in e.g. 2025, 2030 or 2040.

¹² These consultations will be held from 28 September 2020 until 23 October 2020.

18 The following disclaimer shall appear in all documents prepared by the Consultant:

“This activity is financed by the Mediterranean Trust Fund (MTF) and implemented by the Mediterranean Pollution Assessment and Control Programme (MED POL) of the Mediterranean Action Plan (MAP) of the United Nations Environment Programme (UNEP), in cooperation with the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC) and the Plan Bleu Regional Activity Centre (PB/RAC).

The views expressed in this document are those of the Consultant and are not attributed in any way to the United Nations, UNEP/MAP, MED POL, PB/RAC, the International Maritime Organization (IMO) or REMPEC.”.

Schedule

19 The work and tasks set out in the present document shall be completed by **15 February 2021**. The contract will be terminated upon the submission by the Consultant of the final report of the knowledge gathering and the associated written response referred to above as well as certification by REMPEC that the performance of the duties and the work carried out are satisfactory.

20 Within that timeframe, the Consultant shall organise his/her work in the best possible manner and ensure the successful completion of the consultancy.

APPENDIX III

**Terms of Reference for the carrying out of the further study related to the additional analyses
of fuel supply and alternative compliance methods**

(LOT 3)

**MEDITERRANEAN ACTION PLAN (MAP)
REGIONAL MARINE POLLUTION EMERGENCY RESPONSE CENTRE FOR
THE MEDITERRANEAN SEA (REMPEC)**

TERMS OF REFERENCE

Mediterranean Trust Fund

Activity 2.7.1.2: Examine the possibility of designating the Mediterranean Sea as a whole as SO_x Emission Control Area under MARPOL Annex VI and effectively implement the existing energy efficiency measures

Budget line: 1214

FOR THE CARRYING OUT OF THE FURTHER STUDY RELATED TO THE ADDITIONAL ANALYSES OF FUEL SUPPLY AND ALTERNATIVE COMPLIANCE METHODS PURSUANT TO THE ROAD MAP FOR A PROPOSAL FOR THE POSSIBLE DESIGNATION OF THE MED SO_x ECA

(LOT 3)

Background

1 COP 19¹ adopted Decision IG.22/4 on the Regional Strategy for Prevention of and Response to Marine Pollution from Ships (2016-2021), hereinafter referred to as the Regional Strategy (2016-2021), which addresses the issue of the prevention of air pollution from ships in Specific Objectives 1 and 15.

2 In particular, Specific Objective 15 of the Regional Strategy (2016-2021) established a technical committee of experts, which worked through correspondence, nominated by the Contracting Parties to the Barcelona Convention, to carry out a technical and feasibility study to examine if it is appropriate, at the current stage, to put in place a road map for preparation of a submission to the International Maritime Organization (IMO) to designate as a sulphur oxides (SO_x) Emission Control Area (ECA) in certain areas of the Mediterranean Sea requiring specific environmental protection, and to explore possible further steps.

3 COP 20² agreed to include in the Programme of Work and Budget 2018-2019 of the Mediterranean Action Plan (MAP) of the United Nations Environment Programme (UNEP), also referred to as UNEP/MAP, an activity aimed at examining the possibility of designating the Mediterranean Sea, or parts thereof, as SO_x ECA(s), under Annex VI to the International Convention for the Prevention of Pollution from Ships (MARPOL) and effectively implementing the existing energy efficiency measures.

¹ Nineteenth Ordinary Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) and its Protocols (Athens, Greece, 9-12 February 2016).

² Twentieth Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (Tirana, Albania, 17-20 December 2017).

4 In this context, and on the basis of the outcome of the work of the SO_x ECA(s) Technical Committee of Experts, coordinated by the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), including the Technical and Feasibility Study³ and the initial draft submission to the IMO⁴ prepared by REMPEC, COP 21⁵ adopted Decision IG.24/8 on the Road Map for a Proposal for the Possible Designation of the Mediterranean Sea, as a whole, as an Emission Control Area for Sulphur Oxides Pursuant to MARPOL Annex VI, within the Framework of the Barcelona Convention, hereinafter referred to as the road map, which outlines the process and details the related activities.

5 According to the road map, some knowledge gathering based on existing knowledge and studies⁶ should be completed and further studies should be carried out with a view to developing a mutually agreed joint and coordinated proposal for the possible designation of the Mediterranean Emission Control Area (Med SO_x ECA) in accordance with Appendix III (Criteria and procedures for designation of emission control areas) to MARPOL Annex VI, and with the view of formally submitting it to the 78th Session of the IMO's Marine Environment Protection Committee (MEPC 78) scheduled for April 2022 (TBC), as follows⁷:

(a) Knowledge gathering:

- synopsis of the assessment (**LOT 1**);
- quantification of the impacts associated with deposition of PM_{2.5} and air toxics⁸ (**LOT 1**);
- additional detail of land-based emissions controls of SO_x and PM in the Mediterranean coastal States (**LOT 2**); and
- additional elements on the economic impacts on shipping engaged in international trade (**LOT 4 – Regional**).

(b) Further studies:

- additional economic impact evaluation, more precisely:
 - analyses of the impacts on shipping engaged in international trade as well as on trade modal shift outside the Mediterranean (**LOT 4 – Regional & National**); and
 - analyses of the impacts on short-sea shipping activity as well on the social and economic impact on Contracting Parties to the Barcelona Convention including on development for islands, insular and remote areas (**LOT 4 – Regional & National**).

³ entitled "Technical and feasibility study to examine the possibility of designating the Mediterranean Sea, or parts thereof, as SO_x ECA(s) under MARPOL Annex VI", as set out in the Appendix to document REMPEC/WG.45/INF.9.

⁴ entitled "Proposal to Designate the Mediterranean Sea area, [or parts thereof,] as an Emission Control Area for Sulphur Oxides [and Particulate Matter]", as set out in the Appendix to document REMPEC/WG.45/INF.10.

⁵ Twenty-first Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (Naples, Italy, 2-5 December 2019).

⁶ These specifically include the Technical and Feasibility Study³, the study entitled "The potential for cost-effective air emission reductions from international shipping through designation of further Emission Control Areas in EU waters with focus on the Mediterranean Sea" prepared by the European Commission as well as the study entitled "ECAMED: a Technical Feasibility Study for the Implementation of an Emission Control Area (ECA) in the Mediterranean Sea" prepared by France, as set out respectively in the Annex to document REMPEC/WG.45/INF.11 and the Annex to document REMPEC/WG.45/INF.12.

⁷ The associated package of work is identified and given in **bold**.

⁸ The reference to 'air toxics' in the road map stems from the initial draft submission to the IMO⁴ that made such a reference essentially because its structure was based on the proposal to designate the North American ECA, as set out in Document MEPC 59/6/5. However, it is acknowledged that the assessment of 'air toxics' is associated with ground level ozone and, therefore, is only relevant to the designation of a nitrogen oxides (NO_x) ECA and impacts from air toxics are not likely to result from the possible designation of the Med SO_x ECA. Although the possibility of extending the scope of the Med SO_x ECA to include NO_x emissions may be pursued in the future, it is not to be considered at this stage.

- additional fuel supply and technology analyses (regional fuel production, fuel availability, and alternative compliance technologies) (**LOT 3**).

6 COP 21 agreed to extend the mandate of the SO_x ECA(s) Technical Committee of Experts, until 30 April 2021, to oversee the completion of the knowledge gathering and the preparations of further studies, notably socio-economic impacts on individual Contracting Parties to the Barcelona Convention *inter alia* as indicated in the road map, including the development of their respective terms of reference, through correspondence coordinated by REMPEC, when examining the possibility of designating the proposed Med SO_x ECA.

7 COP 21 also requested the Secretariat to update the initial draft submission to the IMO⁴ for a proposal for the possible designation of the Med SO_x ECA, under the guidance of the SO_x ECA(s) Technical Committee of Experts in line with the agreed road map.

8 To achieve this, REMPEC, the Mediterranean Pollution Assessment and Control Programme (MED POL) and the Plan Bleu Regional Activity Centre (PB/RAC), three UNEP/MAP components, are expected to lead the related activities that are grouped into the following four packages of work:

- .1 **LOT 1:** Draft submission to the IMO (Lead Entity: REMPEC, in cooperation with MED POL and PB/RAC);
- .2 **LOT 2:** Land-based emissions control measures of SO_x and PM in the Mediterranean coastal States (Lead Entity: MED POL, in cooperation with REMPEC);
- .3 **LOT 3:** Additional analyses of fuel supply and alternative compliance methods (Lead Entity: REMPEC); and
- .4 **LOT 4 – Regional & National:** Additional economic impact evaluation (Lead Entity: PB/RAC, in cooperation with REMPEC).

9 Each package of work is designed to ensure the completion of the necessary knowledge gathering or the carrying out of the necessary further studies, as specified in paragraph 5 above, and shall contribute collectively to the implementation of the road map in a complimentary manner.

10 The packages of work are distinct in that they are different in nature and different in methodology requiring potentially different specialisms to undertake the work.

11 **LOT 3**, which will be overseen by the SO_x ECA(s) Technical Committee of Experts, through correspondence coordinated by REMPEC, shall comprise a further study, specifically to make additional analyses of fuel supply and alternative compliance methods (regional fuel production, fuel availability, and alternative compliance technologies), and shall provide the necessary input for the finalisation of the draft submission to the IMO under **LOT 1** in accordance with the road map and Appendix III to MARPOL Annex VI.

12 The further study referred to in paragraph 11 above shall take into account the following:

- .1 “Third IMO Greenhouse Gases (GHG) Study 2014”⁹;

⁹ as set out respectively in documents MEPC 67/6 (executive summary), MEPC 67/6/Corr.1 (corrigendum), MEPC 67/INF.3 (final report) and MEPC 67/INF.3/Corr.1 (corrigendum).

- .2 “Fourth IMO GHG Study”¹⁰;
- .3 “Assessment of fuel oil availability”¹¹; and
- .4 any other relevant information that may be provided by REMPEC as well as the Contracting Parties to the Barcelona Convention, through the SO_x ECA(s) Technical Committee of Experts, especially with regard to relevant projects or initiatives carried out at the national, sub-regional, regional or global level.

13 The finalised draft submission to the IMO, which will integrate the outcome of the further study carried out under **LOT 3** in accordance with the road map, will be reviewed and validated by the SO_x ECA(s) Technical Committee of Experts before submission to the Fourteenth Meeting of the Focal Points of REMPEC, to be tentatively held in Malta from 25 to 27 May 2021, for its review and recommendations.

Objectives

14 The principal objectives of the consultancy services will be to carry out the further study related to the additional analyses of fuel supply and alternative compliance methods, pursuant to the road map with a view to more fully addressing the criteria and procedures for designation of emission control areas laid down in Appendix III to MARPOL Annex VI.

Assignment

15 For the completion of this consultancy, which shall not exceed sixty-one (61) working days in total, the Consultant shall:

- .1 attend a kick-off Meeting to be held through video-conference, preferably between **10 and 13 August 2020**, to discuss the content of the reference documents to be analysed, the scope of the assignment, as well as to collect all required information for the completion of this consultancy and to agree on the method of work and communication channel;
- .2 draft a brief kick-off Meeting report to be submitted to REMPEC reflecting the main outcomes of the meeting;
- .3 carry out the further study related to the additional analyses of fuel supply and alternative compliance methods pursuant to the road map, which shall include:
 - .1 a review of available information and data on regional supply, demand and overall availability of compliant fuel oils in the Mediterranean Sea, with a focus on reports and studies issued following the coming into effect of the global sulphur limit on 1 January 2020 (0.50% sulphur compliant fuel oil required to be used by ships operating outside designated emission control areas);

¹⁰ should its final report be published by the time the draft report of the further study referred to in paragraph 15.4 should be prepared.

¹¹ as set out respectively in documents MEPC 70/5/3 (executive summary) and MEPC 70/INF.6 (final report).

- .2 an assessment of the demand projections for 0.10% sulphur compliant fuel oil in the Mediterranean Sea during the period 2024-2029 on the basis of the outcome of the Technical and Feasibility Study³ and other relevant studies⁶, including on any effects due to the enhancement of energy efficiency of ships;
 - .3 an assessment of the ability of the refinery industry that services the Mediterranean region to supply the projected demand for 0.10% sulphur compliant fuel oil in the Mediterranean Sea during the period 2024-2029;
 - .4 an assessment of the availability of the 0.10% sulphur compliant fuel oil that could be supplied outside the Mediterranean Sea to ships routinely sailing through the Mediterranean Sea;
 - .5 an assessment, using the most recent forecasts of the Technical and Feasibility Study³ and other relevant information, of the availability, current use and future uptake to comply with the 0.10% sulphur requirement of alternative compliance technologies (such as Exhaust Gas Cleaning Systems – EGCS¹²) or alternative fuels (such as Liquefied Natural Gas – LNG, biofuels, synthetic fuels, etc.) in the Mediterranean Sea, taking into account their economic viability as considered in the Technical and Feasibility Study³; and
 - .6 an assessment of scenarios, including sensitivity analysis, resulting from the potential adoption of international, regional or national laws that may promote or hinder the uptake of such alternative compliance technologies or alternative fuels¹³.
- .4 prepare, in consultation with REMPEC, a draft report of the further study, including a brief summary thereof, covering the work referred to in paragraph 15.3 above in an integrated manner;
 - .5 revise the draft report of the further study referred to above, taking into account the feedback and comments provided by REMPEC following consultations within the SO_x ECA(s) Technical Committee of Experts¹⁴ as well as with IMO and UNEP/MAP, in particular MED POL and PB/RAC;
 - .6 prepare, in consultation with REMPEC, written response to each set of feedback and comments received from the SO_x ECA(s) Technical Committee of Experts with a view to explaining how such feedback and comments were taken into account when revising the draft report of the further study referred to above, or providing the reason(s) why these were not taken into account;
 - .7 finalise the report of the further study referred to above, taking into account the feedback and comments provided by REMPEC following consultations within the SO_x ECA(s) Technical Committee of Experts¹⁵ as well as with IMO and UNEP/MAP, in particular MED POL and PB/RAC; and

¹² also known as “scrubbers”.

¹³ including work by IMO to address environmental effects of discharge water from EGCS and from the uptake of alternative fuels and technologies to reduce GHG emissions from ships.

¹⁴ These consultations will be held from 28 September 2020 until 23 October 2020.

¹⁵ These consultations will be held from 7 December 2020 until 22 January 2021.

- .8 prepare, in consultation with REMPEC, written response to each set of feedback and comments received from the SO_x ECA(s) Technical Committee of Experts with a view to explaining how such feedback and comments were taken into account when finalising the report of the further study referred to above, or providing the reason(s) why these were not taken into account.

Geographical scope of the assignment

- 16 The Consultant will perform the assignment in his/her office/home.

Reporting

- 17 The Consultant shall:

- .1 prepare and submit to REMPEC, not later than **20 August 2020**, the draft kick-off Meeting report referred to in paragraph 15.2 above;
- .2 prepare and submit to REMPEC, not later than **18 September 2020**, the draft report of the further study referred to in paragraph 15.4 above;
- .3 prepare and submit to REMPEC, not later than **13 November 2020**, the following documents:
 - .1 the revised draft report of the further study referred to in paragraph 15.5 above; and
 - .2 the associated written response referred to in paragraph 15.6 above.
- .4 prepare and submit to REMPEC, not later than **5 February 2021**, the following documents:
 - .1 the final report of the further study referred to in paragraph 15.7 above; and
 - .2 the associated written response referred to in paragraph 15.8 above.

18 All documents produced by the Consultant shall be prepared using the Established Guidelines for the preparation of reports on seminars, symposia, courses, workshops and similar events, provided in Annex II to the "REMPEC Consultant Booklet" unless instructed otherwise by REMPEC (i.e. specific document template(s) to be provided by REMPEC) and shall be drafted in English as well as provided in electronic format using software compatible with Microsoft Office 2007.

- 19 The following disclaimer shall appear in all documents prepared by the Consultant:

"This activity is financed by the Mediterranean Trust Fund (MTF) and implemented by the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), in cooperation with the Mediterranean Pollution Assessment and Control Programme (MED POL) as well as the Plan Bleu Regional Activity Centre (PB/RAC) of the Mediterranean Action Plan (MAP) of the United Nations Environment Programme (UNEP).

The views expressed in this document are those of the Consultant and are not attributed in any way to the United Nations, UNEP/MAP, MED POL, PB/RAC, the International Maritime Organization (IMO) or REMPEC.”.

Schedule

20 The work and tasks set out in the present document shall be completed by **15 February 2021**. The contract will be terminated upon the submission by the Consultant of the final report of the further study and the associated written response referred to above as well as certification by REMPEC that the performance of the duties and the work carried out are satisfactory.

21 Within that timeframe, the Consultant shall organise his/her work in the best possible manner and ensure the successful completion of the consultancy.

APPENDIX IV

Terms of Reference for the completion of the knowledge gathering and the carrying out of the further study related to the additional economic impact evaluation

(LOT 4 – Regional)



TERMS OF REFERENCE

Mediterranean Trust Fund

Programme of Work Activity 2.7.1.2: Examine the possibility of designating the Mediterranean Sea as a whole as SO_x Emission Control Area under MARPOL Annex VI and effectively implement the existing energy efficiency measures

FOR THE COMPLETION OF THE KNOWLEDGE GATHERING AND THE CARRYING OUT OF THE FURTHER STUDY RELATED TO THE ADDITIONAL ECONOMIC IMPACT EVALUATION PURSUANT TO THE ROAD MAP FOR A PROPOSAL FOR THE POSSIBLE DESIGNATION OF THE MED SO_x ECA

(LOT 4 – Regional)

Background

1 COP 19¹ adopted Decision IG.22/4 on the Regional Strategy for Prevention of and Response to Marine Pollution from Ships (2016-2021), hereinafter referred to as the Regional Strategy (2016-2021), which addresses the issue of the prevention of air pollution from ships in Specific Objectives 1 and 15.

2 In particular, Specific Objective 15 of the Regional Strategy (2016-2021) established a technical committee of experts, which worked through correspondence, nominated by the Contracting Parties to the Barcelona Convention, to carry out a technical and feasibility study to examine if it is appropriate, at the current stage, to put in place a road map for preparation of a submission to the International Maritime Organization (IMO) to designate as a sulphur oxides (SO_x) Emission Control Area (ECA) in certain areas of the Mediterranean Sea requiring specific environmental protection, and to explore possible further steps.

3 COP 20² agreed to include in the Programme of Work and Budget 2018-2019 of the Mediterranean Action Plan (MAP) of the United Nations Environment Programme (UNEP), also referred to as UNEP/MAP, an activity aimed at examining the possibility of designating the Mediterranean Sea, or parts thereof, as SO_x ECA(s), under Annex VI to the International Convention for the Prevention of Pollution from Ships (MARPOL) and effectively implementing the existing energy efficiency measures.

4 In this context, and on the basis of the outcome of the work of the SO_x ECA(s) Technical Committee of Experts, coordinated by the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), including the Technical and Feasibility Study³ and the initial draft

¹ Nineteenth Ordinary Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) and its Protocols (Athens, Greece, 9-12 February 2016).

² Twentieth Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (Tirana, Albania, 17-20 December 2017).

³ entitled "Technical and feasibility study to examine the possibility of designating the Mediterranean Sea, or parts thereof, as SO_x ECA(s) under MARPOL Annex VI", as set out in the Appendix to document REMPEC/WG.45/INF.9.

submission to the IMO⁴ prepared by REMPEC, COP 21⁵ adopted Decision IG.24/8 on the Road Map for a Proposal for the Possible Designation of the Mediterranean Sea, as a whole, as an Emission Control Area for Sulphur Oxides Pursuant to MARPOL Annex VI, within the Framework of the Barcelona Convention, hereinafter referred to as the road map, which outlines the process and details the related activities.

5 According to the road map, some knowledge gathering based on existing knowledge and studies⁶ should be completed and further studies should be carried out with a view to developing a mutually agreed joint and coordinated proposal for the possible designation of the Mediterranean Emission Control Area (Med SO_x ECA) in accordance with Appendix III (Criteria and procedures for designation of emission control areas) to MARPOL Annex VI, and with the view of formally submitting it to the 78th Session of the IMO's Marine Environment Protection Committee (MEPC 78) scheduled for April 2022 (TBC), as follows⁷:

(a) Knowledge gathering:

- synopsis of the assessment (**LOT 1**);
- quantification of the impacts associated with deposition of PM_{2.5} and air toxics⁸ (**LOT 1**);
- additional detail of land-based emissions controls of SO_x and PM in the Mediterranean coastal States (**LOT 2**); and
- additional elements on the economic impacts on shipping engaged in international trade (**LOT 4 – Regional**).

(b) Further studies:

- additional economic impact evaluation, more precisely:
 - analyses of the impacts on shipping engaged in international trade as well as on trade modal shift outside the Mediterranean (**LOT 4 – Regional & National**); and
 - analyses of the impacts on short-sea shipping activity as well on the social and economic impact on Contracting Parties to the Barcelona Convention including on development for islands, insular and remote areas (**LOT 4 – Regional & National**).
- additional fuel supply and technology analyses (regional fuel production, fuel availability, and alternative compliance technologies) (**LOT 3**).

6 COP 21 agreed to extend the mandate of the SO_x ECA(s) Technical Committee of Experts, until 30 April 2021, to oversee the completion of the knowledge gathering and the preparations of further

⁴ entitled "Proposal to Designate the Mediterranean Sea area, [or parts thereof,] as an Emission Control Area for Sulphur Oxides [and Particulate Matter]", as set out in the Appendix to document REMPEC/WG.45/INF.10.

⁵ Twenty-first Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (Naples, Italy, 2-5 December 2019).

⁶ These specifically include the Technical and Feasibility Study, the study entitled "The potential for cost-effective air emission reductions from international shipping through designation of further Emission Control Areas in EU waters with focus on the Mediterranean Sea" prepared by the European Commission as well as the study entitled "ECAMED: a Technical Feasibility Study for the Implementation of an Emission Control Area (ECA) in the Mediterranean Sea" prepared by France, as set out respectively in the Annex to document REMPEC/WG.45/INF.11 and the Annex to document REMPEC/WG.45/INF.12.

⁷ The associated package of work is identified and given in **bold**.

⁸ The reference to 'air toxics' in the road map stems from the initial draft submission to the IMO that made such a reference essentially because its structure was based on the proposal to designate the North American ECA, as set out in Document MEPC 59/6/5. However, it is acknowledged that the assessment of 'air toxics' is associated with ground level ozone and, therefore, is only relevant to the designation of a nitrogen oxides (NO_x) ECA and impacts from air toxics are not likely to result from the possible designation of the Med SO_x ECA. Although the possibility of extending the scope of the Med SO_x ECA to include NO_x emissions may be pursued in the future, it is not to be considered at this stage.

studies, notably socio-economic impacts on individual Contracting Parties to the Barcelona Convention *inter alia* as indicated in the road map, including the development of their respective terms of reference, through correspondence coordinated by REMPEC, when examining the possibility of designating the proposed Med SO_x ECA.

7 COP 21 also requested the Secretariat to update the initial draft submission to the IMO⁴ for a proposal for the possible designation of the Med SO_x ECA, under the guidance of the SO_x ECA(s) Technical Committee of Experts in line with the agreed road map.

8 To achieve this, REMPEC, the Mediterranean Pollution Assessment and Control Programme (MED POL) and the Plan Bleu Regional Activity Centre (PB/RAC), three UNEP/MAP components, are expected to lead the related activities that are grouped into the following four packages of work:

- .1 **LOT 1:** Draft submission to the IMO (Lead Entity: REMPEC, in cooperation with MED POL and PB/RAC);
- .2 **LOT 2:** Land-based emissions control measures of SO_x and PM in the Mediterranean coastal States (Lead Entity: MED POL, in cooperation with REMPEC);
- .3 **LOT 3:** Additional analyses of fuel supply and alternative compliance methods (Lead Entity: REMPEC); and
- .4 **LOT 4 – Regional & National:** Additional economic impact evaluation (Lead Entity: PB/RAC, in cooperation with REMPEC).

9 Each package of work is designed to ensure the completion of the necessary knowledge gathering or the carrying out of the necessary further studies, as specified in paragraph 5 above, and shall contribute collectively to the implementation of the road map in a complimentary manner.

10 The packages of work are distinct in that they are different in nature and different in methodology requiring potentially different specialisms to undertake the work.

11 **LOT 4 – Regional**, which will be overseen by the SO_x ECA(s) Technical Committee of Experts, through correspondence coordinated by REMPEC, shall comprise knowledge gathering and a further study, specifically to provide additional elements on the economic impacts on shipping engaged in international trade⁹ and to make additional economic impact evaluation. More precisely, the evaluation shall include analyses of the impacts on shipping engaged in international trade as well as on trade modal shift outside the Mediterranean, analyses of the impacts on short-sea shipping activity, and analyses of the social and economic impact on Contracting Parties to the Barcelona Convention including on development for islands, insular and remote areas. **LOT 4 – Regional** shall provide the necessary input for the finalisation of the draft submission to the IMO under **LOT 1** in accordance with the road map and Appendix III to MARPOL Annex VI.

12 The analyses referred to in paragraph 11 above shall be conducted at the level of the Mediterranean region, as a whole. Whenever practicable, the analyses shall differentiate impacts on countries or groups of countries with different specificities, including, but not limited to:

- .1 countries having ratified MARPOL Annex VI versus countries not having ratified it;
- .2 countries that are Member States of the European Union versus countries that are not EU Member States; and
- .3 countries with significant insularities and/or remote areas.

13 The analyses referred to in paragraph 11 above shall address separately the specific issues linked to:

⁹ This addresses the placeholder set out in Section 9.6 of the initial draft submission to the IMO.

- .1 international trade;
- .2 short-sea shipping; and
- .3 where relevant, maritime transport to insular and/or remote areas, as well as island States, in the Mediterranean and the socio-economic development of these areas.

14 The results of the analyses referred to in paragraph 11 above shall be accompanied by a sensitivity analysis to the global oil barrel price, as an integral part of the knowledge gathering and the further study. This will allow for future updating of the results of the said study.

15 The finalised draft submission to the IMO, which will integrate the outcome of the knowledge gathering completed and the further study carried out under **LOT 4 – Regional** in accordance with the road map, will be reviewed and validated by the SO_x ECA(s) Technical Committee of Experts before submission to the Fourteenth Meeting of the Focal Points of REMPEC, to be tentatively held in Malta from 25 to 27 May 2021, for its review and recommendations.

Objectives

16 The principal objectives of the consultancy services will be to complete the knowledge gathering and to carry out the further study related to the additional economic impact evaluation pursuant to the road map with a view to more fully addressing the criteria and procedures for designation of emission control areas laid down in Appendix III to MARPOL Annex VI.

Assignment

- 17 For the completion of this consultancy, the Consultant shall:
- .1 attend a kick-off Meeting to be held through video-conference, to discuss the content of the reference documents to be analysed, the scope of the assignment, as well as to collect all required information for the completion of this consultancy and to agree on the method of work and communication channel;
 - .2 draft a brief kick-off Meeting report to be submitted to PB/RAC and REMPEC reflecting the main outcomes of the meeting;
 - .3 complete the necessary knowledge gathering pursuant to the road map, which shall include:
 - .1 a review of relevant studies, research and other materials, including, but not limited to, those related to the possible designation of the Med SO_x ECA; and
 - .2 the gathering and compilation of elements on the economic impacts on shipping engaged in international trade.
 - .4 prepare, in consultation with PB/RAC and REMPEC, a draft report of the knowledge gathering referred to above, including a brief summary thereof;
 - .5 carry out the further study related to the additional economic impact evaluation pursuant to the road map, which shall include:
 - .1 an analysis of the potential permanent and transitional changes in competitiveness of the shipping industry, due to compliance with SO_x ECA requirements, possibly leading to (i) rerouting of shipping routes to maintain competitiveness; and/or (ii) a modal shift (change in transport mode from maritime to route/train/air transport) to occur as a market

response to loss of competitiveness of shipping operators¹⁰. This analysis shall include:

- .1 an analysis of the sensitivity of SO_x ECA compliance-related cost changes in shipping companies and transported goods to rerouting and/or modal shift, including, but not limited to, the analysis of:
 - .1 changes in transport cost of goods and passengers transported via maritime transport and changes in demand for maritime transport as a response to changing prices (price-elasticity of demand); and
 - .2 changes in competitiveness of shipping compared to other transport modes.
 - .2 an identification of realistic options for modifying routes and/or for modal shift on those routes; and
 - .3 a brief outline of possible scenarios to mitigate adverse impacts linked to (the distribution of) costs, taking into account that the possible designation of the Med SO_x ECA would represent an additional effort of pollution reduction compared to the global 0.50% sulphur limit.
- .2 an analysis of the permanent and transitional additional costs and benefits and their distribution for economies and citizens as from 2024 onwards. This analysis shall include:
- .1 an analysis of costs and benefits linked to potential modal shift or rerouting, as appropriate. For example, a modal shift towards railway transport could be beneficial for economies and the environment, while rerouting would also imply a rerouting of pollution, etc., but might not be beneficial for islands, particularly island States;
 - .2 an analysis of the impacts of increased prices of transport on the purchasing power of citizens;
 - .3 an analysis of the influence on the development potential of affected areas; particularly in the case of remote areas connected to “mainland”, through subsidised maritime traffic of goods and passengers¹¹, and islands, particularly island States, the already observed economic impacts linked to the introduced 0.50% sulphur limit since January 2020 shall be identified, where relevant, and the additional potential economic impact of the Med SO_x ECA in such cases shall be analysed; and
 - .4 a brief outline of possible scenarios to mitigate adverse impacts, taking into account that the possible designation of the Med SO_x ECA would represent an additional effort of pollution reduction compared to the global 0.50% sulphur limit.

¹⁰ A study on the issue of potential modal shift and rerouting related to the possible designation of the Med SO_x ECA is currently being conducted by French institutions. PB/RAC will ensure close coordination with this study to avoid duplication of work.

¹¹ Where there is no alternative to be connected with the hinterland, local populations might be severely affected, not only in terms of transportation costs to be potentially transferred to the end-user, but also in terms of disproportionate financial burden to the public budget which covers the costs of public service contracts for securing the country’s social and territorial cohesion.

- .3 an analysis of the economic impacts on ports and refineries. This analysis shall include an assessment of the current and future potential for distortion of competition between Mediterranean Sea and non-Mediterranean Sea ports and refineries, but also between Mediterranean Sea ports and refineries themselves, bearing in mind that not all Contracting Parties to the Barcelona Convention are Parties to MARPOL Annex VI.
- .6 prepare, in consultation with PB/RAC and REMPEC, a draft report of the further study covering the work referred to in paragraph 17.5 above in an integrated manner, which shall also include:
 - .1 a brief summary thereof; and
 - .2 an annex dedicated to facilitating the carrying out of potential subsequent further studies to be conducted on the same subject at the national level. This annex shall clearly indicate all sources, hypotheses, all assumptions and base data or ratios used for extrapolations, modelling and projection, as well as all data or other information at national level that might have been used for aggregation.
- .7 finalise the report of the knowledge gathering referred to above:
 - .1 integrating the outcomes arising from the draft report of the further study referred to above; and
 - .2 taking into account the feedback and comments provided by PB/RAC and REMPEC following consultations within the SO_x ECA(s) Technical Committee of Experts¹² and with IMO, UNEP/MAP, in particular MED POL.
- .8 revise the draft report of the further study referred to above, taking into account the feedback and comments provided by PB/RAC and REMPEC following consultations within the SO_x ECA(s) Technical Committee of Experts¹² as well as with IMO and UNEP/MAP, in particular MED POL;
- .9 prepare, in consultation with PB/RAC and REMPEC, written response to each set of feedback and comments received from the SO_x ECA(s) Technical Committee of Experts with a view to explaining how such feedback and comments were taken into account when finalising the report of the knowledge gathering and revising the draft report of the further study referred to above, or providing the reason(s) why these were not taken into account;
- .10 finalise the report of the further study referred to above, taking into account the feedback and comments provided by PB/RAC and REMPEC following consultations within the SO_x ECA(s) Technical Committee of Experts¹³ as well as with IMO and UNEP/MAP, in particular MED POL; and
- .11 prepare, in consultation with PB/RAC and REMPEC, written response to each set of feedback and comments received from the SO_x ECA(s) Technical Committee of Experts with a view to explaining how such feedback and comments were taken into account when finalising the report of the further study referred to above, or providing the reason(s) why these were not taken into account.

Geographical scope of the assignment

- 18 The Consultant will perform the assignment in his/her office/home.

¹² These consultations will be held from 28 September 2020 until 23 October 2020.

¹³ These consultations will be held from 7 December 2020 until 22 January 2021.

Reporting

- 19 The Consultant shall:
- .1 prepare and submit to PB/RAC and REMPEC, not later than **2 working days after the kick-off meeting or contract signature**, the draft kick-off Meeting report referred to in paragraph 17.2 above;
 - .2 prepare and submit to PB/RAC and REMPEC, as soon as possible after the kick-off meeting and not later than **seven working days upon contract signature**, the following document:
 - .1 A draft progress memorandum outlining the methodological approach planned to be adopted for this assignment, the main data sources and available data/information and the main hypotheses that will be used in modelling/calculations/estimates, as well as a detailed table of contents of:
 - .1 the draft report of the knowledge gathering referred to in paragraph 17.4 of the terms of reference; and
 - .2 the draft report of the further study referred to in paragraph 17.6 of the terms of reference.
 - .3 prepare and submit to PB/RAC and REMPEC, not later than **13 November 2020**, the following documents:
 - .1 the final progress memorandum referred to above;
 - .2 the draft report of the knowledge gathering referred to in paragraph 17.4 of the terms of reference, that will integrate the responses to comments received on the memorandum mentioned above; and
 - .3 the draft report of the further study referred to in paragraph 17.8 of the terms of reference, that will integrate the responses to comments received on the memorandum mentioned above; and
 - .4 the associated written response referred to in paragraph 17.9 of the terms of reference.
 - .4 prepare and submit to PB/RAC and REMPEC, not later than **5 February 2021**, the following documents:
 - .1 the final report of the knowledge gathering referred to in paragraph 17.7 of the terms of reference;
 - .2 the final report of the further study referred to in paragraph 17.10 of the terms of reference; and
 - .3 the associated written response referred to in paragraph 17.11 of the terms of reference.

20 All documents produced by the Consultant shall be prepared in English and provided in electronic format using software compatible with Microsoft Office 2007. A separate file with all source data used in the final report of the further study shall also be provided.

21 The following disclaimer shall appear in all documents prepared by the Consultant:

“This activity is financed by the Mediterranean Trust Fund (MTF) and implemented by the Plan Bleu Regional Activity Centre (PB/RAC) of the Mediterranean Action Plan (MAP) of the United Nations Environment Programme (UNEP), in cooperation with the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC) as well as the Mediterranean Pollution Assessment and Control Programme (MED POL).

The views expressed in this document are those of the Consultant and are not attributed in any way to the United Nations, UNEP/MAP, MED POL, PB/RAC, the International Maritime Organization (IMO) or REMPEC.”.

Schedule

22 The work and tasks set out in the present document shall be completed by **15 February 2021**. The contract will be terminated upon the submission by the Consultant of the final report of the knowledge gathering, the final report of the further study and the associated written responses referred to above as well as certification by PB/RAC that the performance of the duties and the work carried out are satisfactory.

23 Within that timeframe, the Consultant shall organise his/her work in the best possible manner and ensure the successful completion of the consultancy.

APPENDIX V

Terms of Reference for the completion of the knowledge gathering and the carrying out of the further study related to the additional economic impact evaluation

(LOT 4 – National)

**MEDITERRANEAN ACTION PLAN (MAP)
REGIONAL MARINE POLLUTION EMERGENCY RESPONSE CENTRE FOR
THE MEDITERRANEAN SEA (REMPEC)**

TERMS OF REFERENCE

[insert source(s) of funds]¹

Activity 2.7.1.2: Examine the possibility of designating the Mediterranean Sea as a whole as SO_x Emission Control Area under MARPOL Annex VI and effectively implement the existing energy efficiency measures

Budget line: [insert budget line]²

FOR THE CARRYING OUT OF THE FURTHER STUDY RELATED TO THE ADDITIONAL ECONOMIC IMPACT EVALUATION FOR [INSERT NAME OF COUNTRY]³ PURSUANT TO THE ROAD MAP FOR A PROPOSAL FOR THE POSSIBLE DESIGNATION OF THE MED SO_x ECA

(LOT 4 – National)

Background

1 COP 19⁴ adopted Decision IG.22/4 on the Regional Strategy for Prevention of and Response to Marine Pollution from Ships (2016-2021), hereinafter referred to as the Regional Strategy (2016-2021), which addresses the issue of the prevention of air pollution from ships in Specific Objectives 1 and 15.

2 In particular, Specific Objective 15 of the Regional Strategy (2016-2021) established a technical committee of experts, which worked through correspondence, nominated by the Contracting Parties to the Barcelona Convention, to carry out a technical and feasibility study to examine if it is appropriate, at the current stage, to put in place a road map for preparation of a submission to the International Maritime Organization (IMO) to designate as a sulphur oxides (SO_x) Emission Control Area (ECA) in certain areas of the Mediterranean Sea requiring specific environmental protection, and to explore possible further steps.

3 COP 20⁵ agreed to include in the Programme of Work and Budget 2018-2019 of the Mediterranean Action Plan (MAP) of the United Nations Environment Programme (UNEP), also referred to as UNEP/MAP, an activity aimed at examining the possibility of designating the Mediterranean Sea, or parts thereof, as SO_x ECA(s), under Annex VI to the International Convention for the Prevention of Pollution from Ships (MARPOL) and effectively implementing the existing energy efficiency measures.

¹ the source(s) of funds will be inserted prior to issuing the relevant Call for Quotations/Tenders.

² the budget line will be inserted prior to issuing the relevant Call for Quotations/Tenders.

³ the name of the country will be inserted prior to issuing the relevant Call for Quotations/Tenders.

⁴ Nineteenth Ordinary Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) and its Protocols (Athens, Greece, 9-12 February 2016).

⁵ Twentieth Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (Tirana, Albania, 17-20 December 2017).

4 In this context, and on the basis of the outcome of the work of the SO_x ECA(s) Technical Committee of Experts, coordinated by the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), including the Technical and Feasibility Study⁶ and the initial draft submission to the IMO⁷ prepared by REMPEC, COP 21⁸ adopted Decision IG.24/8 on the Road Map for a Proposal for the Possible Designation of the Mediterranean Sea, as a whole, as an Emission Control Area for Sulphur Oxides Pursuant to MARPOL Annex VI, within the Framework of the Barcelona Convention, hereinafter referred to as the road map, which outlines the process and details the related activities.

5 According to the road map, some knowledge gathering based on existing knowledge and studies⁹ should be completed and further studies should be carried out with a view to developing a mutually agreed joint and coordinated proposal for the possible designation of the Mediterranean Emission Control Area (Med SO_x ECA) in accordance with Appendix III (Criteria and procedures for designation of emission control areas) to MARPOL Annex VI, and with the view of formally submitting it to the 78th Session of the IMO's Marine Environment Protection Committee (MEPC 78) scheduled for April 2022 (TBC), as follows¹⁰:

(a) Knowledge gathering:

- synopsis of the assessment (**LOT 1**);
- quantification of the impacts associated with deposition of PM_{2.5} and air toxics¹¹ (**LOT 1**);
- additional detail of land-based emissions controls of SO_x and PM in the Mediterranean coastal States (**LOT 2**); and
- additional elements on the economic impacts on shipping engaged in international trade (**LOT 4 – Regional**).

(b) Further studies:

- additional economic impact evaluation, more precisely:
 - analyses of the impacts on shipping engaged in international trade as well as on trade modal shift outside the Mediterranean (**LOT 4 – Regional & National**); and
 - analyses of the impacts on short-sea shipping activity as well on the social and economic impact on Contracting Parties to the Barcelona Convention including on development for islands, insular and remote areas (**LOT 4 – Regional & National**).

⁶ entitled "Technical and feasibility study to examine the possibility of designating the Mediterranean Sea, or parts thereof, as SO_x ECA(s) under MARPOL Annex VI", as set out in the Appendix to document REMPEC/WG.45/INF.9.

⁷ entitled "Proposal to Designate the Mediterranean Sea area, [or parts thereof,] as an Emission Control Area for Sulphur Oxides [and Particulate Matter]", as set out in the Appendix to document REMPEC/WG.45/INF.10.

⁸ Twenty-first Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (Naples, Italy, 2-5 December 2019).

⁹ These specifically include the Technical and Feasibility Study⁶, the study entitled "The potential for cost-effective air emission reductions from international shipping through designation of further Emission Control Areas in EU waters with focus on the Mediterranean Sea" prepared by the European Commission as well as the study entitled "ECAMED: a Technical Feasibility Study for the Implementation of an Emission Control Area (ECA) in the Mediterranean Sea" prepared by France, as set out respectively in the Annex to document REMPEC/WG.45/INF.11 and the Annex to document REMPEC/WG.45/INF.12.

¹⁰ The associated package of work is identified and given in **bold**.

¹¹ The reference to 'air toxics' in the road map stems from the initial draft submission to the IMO⁷ that made such a reference essentially because its structure was based on the proposal to designate the North American ECA, as set out in Document MEPC 59/6/5. However, it is acknowledged that the assessment of 'air toxics' is associated with ground level ozone and, therefore, is only relevant to the designation of a nitrogen oxides (NO_x) ECA and impacts from air toxics are not likely to result from the possible designation of the Med SO_x ECA. Although the possibility of extending the scope of the Med SO_x ECA to include NO_x emissions may be pursued in the future, it is not to be considered at this stage.

- additional fuel supply and technology analyses (regional fuel production, fuel availability, and alternative compliance technologies) (**LOT 3**).

6 COP 21 agreed to extend the mandate of the SO_x ECA(s) Technical Committee of Experts, until 30 April 2021, to oversee the completion of the knowledge gathering and the preparations of further studies, notably socio-economic impacts on individual Contracting Parties to the Barcelona Convention *inter alia* as indicated in the road map, including the development of their respective terms of reference, through correspondence coordinated by REMPEC, when examining the possibility of designating the proposed Med SO_x ECA.

7 COP 21 also requested the Secretariat to update the initial draft submission to the IMO⁷ for a proposal for the possible designation of the Med SO_x ECA, under the guidance of the SO_x ECA(s) Technical Committee of Experts in line with the agreed road map.

8 To achieve this, REMPEC, the Mediterranean Pollution Assessment and Control Programme (MED POL) and the Plan Bleu Regional Activity Centre (PB/RAC), three UNEP/MAP components, are expected to lead the related activities that are grouped into the following four packages of work:

- .1 **LOT 1:** Draft submission to the IMO (Lead Entity: REMPEC, in cooperation with MED POL and PB/RAC);
- .2 **LOT 2:** Land-based emissions control measures of SO_x and PM in the Mediterranean coastal States (Lead Entity: MED POL, in cooperation with REMPEC);
- .3 **LOT 3:** Additional analyses of fuel supply and alternative compliance methods (Lead Entity: REMPEC); and
- .4 **LOT 4 – Regional & National:** Additional economic impact evaluation (Lead Entity: PB/RAC, in cooperation with REMPEC).

9 Each package of work is designed to ensure the completion of the necessary knowledge gathering or the carrying out of the necessary further studies, as specified in paragraph 5 above, and shall contribute collectively to the implementation of the road map in a complimentary manner.

10 The packages of work are distinct in that they are different in nature and different in methodology requiring potentially different specialisms to undertake the work.

11 **LOT 4 – National** shall comprise further studies related to the additional economic impact evaluation to be conducted at the national level. More precisely, in accordance with the road map, the evaluation shall include, but not be limited to: analyses of the impacts on shipping engaged in international trade as well as on trade modal shift outside the Mediterranean; analyses of the impacts on short-sea shipping activity; and analyses of the social and economic impact on Contracting Parties to the Barcelona Convention including on development for islands, insular and remote areas.

12 The analyses referred to in paragraph 11 above shall address separately the specific issues linked to:

- .1 international trade;
- .2 short-sea shipping; and

- .3 where relevant, maritime transport to insular and/or remote areas, as well as island States, in the Mediterranean and the socio-economic development of these areas.

13 The results of the analyses referred to in paragraph 11 above shall be accompanied by a sensitivity analysis to the global oil barrel price, as an integral part of the further studies. This will allow for future updating of the results of the said studies.

Objectives

14 The principal objectives of the consultancy services will be to carry out the further study related to the additional economic impact evaluation for **[insert name of country]**³ pursuant to the road map.

Assignment

15 For the completion of this consultancy, which shall not exceed **[insert number]**¹² working days in total, the Consultant shall:

- .1 attend a kick-off Meeting to be held through video-conference, preferably between **[insert dates]**¹³, to discuss the content of the reference documents to be analysed, the scope of the assignment, as well as to collect all required information for the completion of this consultancy and to agree on the method of work and communication channel;
- .2 draft a brief kick-off Meeting report to be submitted to PB/RAC and REMPEC reflecting the main outcomes of the meeting;
- .3 carry out the further study related to the additional economic impact evaluation pursuant to the road map, which shall include:
 - .1 an analysis of the potential permanent and transitional changes in competitiveness of the shipping industry of **[insert name of country]**³, due to compliance with SO_x ECA requirements, possibly leading to (i) rerouting of shipping routes to maintain competitiveness; and/or (ii) a modal shift (change in transport mode from maritime to route/train/air transport) to occur as a market response to loss of competitiveness of shipping operators. This analysis shall include:
 - .1 an analysis of the sensitivity of SO_x ECA compliance-related cost changes in shipping companies and transported goods to rerouting and/or modal shift, including, but not limited to, the analysis of:
 - .1 changes in transport cost of goods and passengers transported via maritime transport and changes in demand for maritime transport as a response to changing prices (price-elasticity of demand); and

¹² the number of working days will be inserted prior to issuing the relevant Call for Quotations/Tenders.

¹³ the dates for the kick-off Meeting will be inserted prior to issuing the relevant Call for Quotations/Tenders.

- .2 changes in competitiveness of shipping compared to other transport modes.
 - .2 an identification of realistic options for modifying routes and/or for modal shift on those routes; and
 - .3 a brief outline of possible scenarios to mitigate adverse impacts linked to (the distribution of) costs, taking into account that the possible designation of the Med SO_x ECA would represent an additional effort of pollution reduction compared to the global 0.50% sulphur limit.
- .2 an analysis of the permanent and transitional additional costs and benefits and their distribution for economies and citizens of **[insert name of country]**³ as from 2024 onwards. This analysis shall include:
- .1 an analysis of costs and benefits linked to potential modal shift or rerouting, as appropriate. For example, a modal shift towards railway transport could be beneficial for economies and the environment, while rerouting would also imply a rerouting of pollution, etc., but might not be beneficial for islands, particularly island States;
 - .2 an analysis of the impacts of increased prices of transport on the purchasing power of citizens;
 - .3 an analysis of the influence on the development potential of affected areas; particularly in the case of remote areas connected to “mainland”, through subsidised maritime traffic of goods and passengers¹⁴, and islands, particularly island States, the already observed economic impacts linked to the introduced 0.50% sulphur limit since January 2020 shall be identified, where relevant, and the additional potential economic impact of the Med SO_x ECA in such cases shall be analysed; and
 - .4 a brief outline of possible scenarios to mitigate adverse impacts, taking into account that the possible designation of the Med SO_x ECA would represent an additional effort of pollution reduction compared to the global 0.50% sulphur limit.
- .3 an analysis of the economic impacts on ports and refineries of **[insert name of country]**³. This analysis shall include an assessment of the current and future potential for distortion of competition between Mediterranean Sea and non-Mediterranean Sea ports and refineries, but also between Mediterranean Sea ports and refineries themselves, bearing in mind that not all Contracting Parties to the Barcelona Convention are Parties to MARPOL Annex VI.

¹⁴ Where there is no alternative to be connected with the hinterland, local populations might be severely affected, not only in terms of transportation costs to be potentially transferred to the end-user, but also in terms of disproportionate financial burden to the public budget which covers the costs of public service contracts for securing the country's social and territorial cohesion.

- .4 assess the socio-economic impacts on relevant sectors such as the maritime transport sector or the oil industry, and, possibly, other sectors such as the fisheries¹⁵, of **[insert name of country]**³; and
 - .5 identify the key measures required for **[insert name of country]**³ to comply with the SO_x ECA requirements, and related implementation costs, including the need for investment, where appropriate.
- .4 prepare, in consultation with PB/RAC and REMPEC, a draft report of the further study, including a brief summary thereof, covering the work referred to in paragraph 15.3 above in an integrated manner;
 - .5 finalise the report of the further study referred to above, taking into account the feedback and comments provided by PB/RAC and REMPEC following consultations with **[insert name of country]**³ as well as with IMO and UNEP/MAP, in particular MED POL; and
 - .6 prepare, in consultation with PB/RAC and REMPEC, written response to each set of feedback and comments received from **[insert name of country]**³ with a view to explaining how such feedback and comments were taken into account when finalising the report of the further study referred to above, or providing the reason(s) why these were not taken into account.

Geographical scope of the assignment

- 16 The Consultant will perform the assignment in his/her office/home.

Reporting

- 17 The Consultant shall:
- .1 prepare and submit to PB/RAC and REMPEC, not later than **[insert dates]**¹⁶, the draft kick-off Meeting report referred to in paragraph 15.2 above;
 - .2 prepare and submit to PB/RAC and REMPEC, not later than **[insert dates]**¹⁷, the draft report of the further study referred to in paragraph 15.4 above; and
 - .3 prepare and submit to PB/RAC and REMPEC, preferably not later than **[insert dates]**¹⁸, the following documents:
 - .1 the final report of the further study referred to in paragraph 15.5 above; and
 - .2 the associated written response referred to in paragraph 15.6 above.

¹⁵ where the fishing fleet is numerically significant.

¹⁶ the dates for submitting the draft kick-off Meeting report will be inserted prior to issuing the relevant Call for Quotations/Tenders.

¹⁷ the dates for submitting the draft report of the further study will be inserted prior to issuing the relevant Call for Quotations/Tenders.

¹⁸ the dates for submitting the final report of the further study and the associated written response will be inserted prior to issuing the relevant Call for Quotations/Tenders.

18 All documents produced by the Consultant shall be prepared in English and provided in electronic format using software compatible with Microsoft Office 2007. A separate file with all source data used in the final report of the further study shall also be provided.

19 The following disclaimer shall appear in all documents prepared by the Consultant:

“This activity is financed by the [insert source(s) of funds]¹ and implemented by the Plan Bleu Regional Activity Centre (PB/RAC) of the Mediterranean Action Plan (MAP) of the United Nations Environment Programme (UNEP), in cooperation with the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC) as well as the Mediterranean Pollution Assessment and Control Programme (MED POL).

The views expressed in this document are those of the Consultant and are not attributed in any way to the United Nations, UNEP/MAP, MED POL, PB/RAC, the International Maritime Organization (IMO) or REMPEC.”

Schedule

20 The work and tasks set out in the present document shall be completed by **[insert dates]**¹⁹. The contract will be terminated upon the submission by the Consultant of the final report of the further study and the associated written response referred to above as well as certification by PB/RAC that the performance of the duties and the work carried out are satisfactory.

21 Within that timeframe, the Consultant shall organise his/her work in the best possible manner and ensure the successful completion of the consultancy.

¹⁹ the dates for completing the work and tasks set out in the present document will be inserted prior to issuing the relevant Call for Quotations/Tenders.