

**KMI-UNESCAP 공동연구 협력사업 출장조사  
- 태국 방콕 -**

**2022. 12. 20 - 12. 23.**

해운정책연구실

# 출장 개요

## 1. 출장목적

- KMI-UNESCAP 공동연구 협력사업 관련 2022년 진행사업 피지(Fiji) 세미나 결과 점검 및 탈탄소 해운 도입전략 관련 리포트 작성 일정 협의
  - 2023년 이후 중장기 협력사업 관련 주제 발굴을 위한 내부 워크숍에 참석함

## 2. 출장자

- 해운연구본부 해운정책연구실 이호춘 부연구위원

## 3. 출장일정

- 출장기간 : 2022. 12. 20(화) ~ 12. 23(금) / 3박 4일
- 출 장 지 : 태국 방콕
- 세부일정

일자	방문일정	주요 업무	항공편
12.20(화)	부산-김포 인천-방콕(18:00-22:10)	공항 이동 출국	KE1818 KE651
12.21(수)	UNESCAP Transport Division	Closed Workshop on 2022 KMI-UNESCAP Project	
12.22(목)	UNESCAP Transport Division	Closed Workshop on 2023 KMI-UNESCAP Project, A Study on the Implementation of Green Shipping Corridors in the ESCAP Region	
12.23(금)	방콕-인천(09:40-17:20) 김포-부산	귀국 공항 이동	KE660 LJ349

# KMI-UNESCAP 공동연구 협력사업 출장조사(방콕)

## 1 2022년 KMI-UNESCAP 공동연구 결과 점검 회의- 12월 21일(수)

### ☐ 미팅 개요

- 일 시 : '22년 12월 21일(화) 14:00~16:00
- 참석자 : UNESCAP 김수엽, UNESCAP 장기욱, KMI 이호준 실장
- 주 제 : 2022 KMI-UNESCAP 공동연구 결과 점검 회의

### ☐ 2022년 KMI-UNESCAP 공동연구 점검 회의

- ESCAP 역내 국가들의 국제환경 규제 대응전략 수립을 위한 공동연구
  - 공동연구 목적 : ESCAP 역내 국가의 국제 선박 환경규제 대응방안 마련
  - 공동연구 기간 : 2022.1.1.~12.30(12개월)
- ESCAP 역내 국가들의 지속가능한 해상연결성 지원을 위한 공동 워크숍 개최
  - 공동 워크숍 제목 : 'Workshop on Sustainable and Resilient port development to support Sustainable Maritime Connectivity in the Pacific Region'
  - 개최일시 및 장소 : 수바, 피지 / 22. 12월
- 공동연구 결과 점검
  - 2022년 KMI-UNESCAP 공동연구는 국제환경 규제 대응관련 공동연구와 해상연결성 주제관련 공동워크숍 개최 등 다양한 활동을 통하여 양 기관간의 시너지 효과를 발휘할 수 있는 기회를 가졌음
  - 다만 예산 제약으로 인해 단독으로 워크숍을 개최할 수 없었을 뿐만 아니라 공동연구 또한 현황 파악 수준에 머무는 한계를 가졌음
- 개선 방안
  - 차년도 사업부터는 충분한 예산 확보를 통해서 보다 심도 깊은 공동연구 및 공동 세미나 개최 필요함

## 2 2023년 KMI-UNESCAP 공동연구 주제 발굴 회의- 12월 22일(목)

### ☐ 미팅 개요

○ 일 시 : '22년 12월 22일(목) 14:00~16:00

○ 참 석

- UNESCAP 김수엽, UNESCAP 장기욱, KMI 이호춘 실장

○ 내 용 : 2023년 KMI-UNESCAP 공동연구 주제 발굴 및 중장기 연구 주제 검토

### ☐ 2023년 KMI-UNESCAP 공동연구 주제 발굴 및 중장기 연구 주제 검토 회의

○ 2023년 KMI-UNESCAP 공동연구 주제(3개 후보군)

- 2023년 KMI-UNESCAP 공동연구 주제 후보들로는 역내 녹색해운회랑 도입, 태평양 도서국 연계성 강화, 해운·항만부분 양성평등 강화 등 3개 주제를 선정함

- 1번 주제 : UNESCAP 역내 녹색해운회랑(Green Shipping Corridor) 도입 여건 분석 및 정책제언을 목표로 도입 가능성이 있는 실제 루트를 대상으로 이해관계자 및 기술적 여건 분석 등 수행함

- 2번 주제 : 태평양 도서국가 해운 연계성 강화를 위한 협력체제 구축의 일환으로 SPC와의 협력하에 Micronesia 지역의 shipping Commission 제도 도입을 위한 조사 및 정책제언

- 3번 주제 : 해운 항만부분의 양성 평등 강화(여성인력의 참여 확대)를 위한 협업 강화 등을 주제로 IMO, ILO 등과 연계해서 연구 추진

○ 2023년 연구주제 선정 결과

- 3개 후보군을 대상으로 KMI-UNESCAP 간 상호 논의를 거쳐 최종적으로 1번 주제인 'Green Shipping Corridor 도입 여건 분석 및 정책제언'을 선정함

- 다른 연구주제들은 중장기적 관점에서 공동연구 주제로 관리하기로 결정함

### ☐ KMI-UNESCAP 공동연구관련 중장기 연구 주제

○ 태평양 도서국가 해운 연계성 강화

- 태평양 도서국들은 기후변화 영향을 가장 크게 받고 있는 지역으로 해운의 탈탄소 규제 등으로 인해 더욱 어려운 상황에 처할 가능성에 매우 높음

- 지 지역의 지역공동체인 SPC와 공동으로 해운 위원회(Shipping Commission) 제도를 도입할 수 있는 방안을 마련하고 동 제도의 도입을 통해서 태평양 도서국가들이 해운부문 현안에 대한 공동 대응을 지원할 수 있는 체제 구축에 기여함

○ 해운 항만부분의 양성 평등 강화(여성인력의 참여 확대)

- 지금까지 해운부문에서 여성의 참여는 소수의 여성 해기사들이 제한적인 분야에서 참여하는 수준에 머물러 왔음
- 이러한 여성 해기사 인력의 고용 확대와 지위 상승 등을 포함해 해운의 다양한 영역에 여성 인력들이 진출할 수
- 동 연구는 국제해사기구(IMO)와 국제노동기구(ILO) 등과 공동으로 추진할 필요가 있음

○ 중앙아시아 지역의 내륙 연계성 강화

- 스탠 국가 등을 포함하는 중앙아시아 지역은 UNESCAP이 지속적으로 물류 효율성 제고를 위해서 내륙연계 강화 연구를 수행해 온 지역임
- 하지만 이러한 노력에 불구하고 중앙아시아 지역의 도로, 철도, 국경 통관 등과 관련된 내륙 연계성은 여전히 개선이 필요한 사안으로 남아 있음
- 동 연구는 도로, 철도, 해운 등 다양한 교통수단들이 포함되어 있는 관계로 다수의 국내외 전문 연구기관들과 협업이 필요한 연구 주제임



Workshop on Sustainable and Resilient port development to support Sustainable Maritime Connectivity in the Pacific

**National strategies and Good Practices to enhance decarbonized shipping and port development**

Heonyoung, R/KU(Korea Maritime Institute)  
3 Dec 2022

KMI KOREA MARITIME INSTITUTE

### Table of Contents

- I Background
- II National strategies and Good Practices
  - Korea's decarbonized shipping & port policy
- III Future Plan

CHAPTER I

## Background



- 1 Global environmental regulation in the shipping & port industry
- 2 Korea's response to environmental regulation

### 1. Global environmental regulation in the shipping & port industry

- Adoption of Initial IMO GHG Strategy
  - Initial strategy envisages a reduction in carbon intensity for full decarbonisation
    - To reduce GHG emissions by at least 40% by 2030, pursuing efforts towards 70% by 2050 compared to 2008
    - Current discussion further pushing towards higher emission reduction target set for 2050 to 200%
  - To achieve reduction target, the initial strategy includes short-term(2018-2023), mid-term(2023-2030), long-term(2030+) measures
    - Short-term measure: New EEDI&SEEMP, existing fleet improvement program, speed reduction, measures to address methane and VOC emissions
    - Mid-term measure: alternative low carbon and zero carbon fuels implementation program, further operational efficiency measures, market based measures
    - Long-term measure: development and provision of zero carbon and fossil free fuels, new innovative mechanism to cut the carbon intensity

### 2. Korea's response to environmental regulation

- Korea's shipping & port policy to comply with the international environmental regulation
  - Initiate the Promotion of the Development and Distribution of Environment-friendly Ships (established in 2018, revised into force in 2020)
    - Purpose: To comply with the international regulation to protect the air and marine environment, and to nurture a new business
    - Support policy measures can be introduced by expanding the policy target beyond oil cargo ships to coastal ships, passenger ships, fishing vessels, etc.
  - Establishment of "the First National Plan for the Development and popularization of green ship (2021-2026)"
    - Purpose: To promote sustainable development of the shipbuilding and shipping industry and also marine environment by establishing and implementing a comprehensive plan on developing and distributing green ships
    - Main concept: Development of leading technologies for future green ships (to reduce GHG emissions by 70%), establishment of facilities to distribute new technologies, development of regional projects, promotion of green ships, improvement of infrastructure for green fuel supply, new measures for green ships, etc.

CHAPTER II

## Korea's decarbonized shipping & port policy



- Introduction of Korea's shipping industry
- Promotion of green ships
- Certification system of green ships
- Introduction of Korea's port industry
- Special Act on Air Quality Improvement in Port & Other Areas
- Establishment of an eco-friendly port



## 1. Introduction of Korea's shipping industry

■ 98.7% of Korea's cargo volume for import and export is by sea

- As of 2020, Korea's import/export cargo volume amounted to 1,432,166 thousand ton(n)/t, which consists of 1,429,150 thousand ton(n)/t by sea and 4,016 thousand ton(n)/t by air respectively



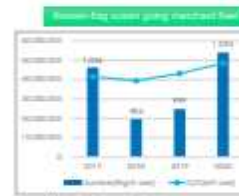
Source: Ministry of Land, Infrastructure and Transport

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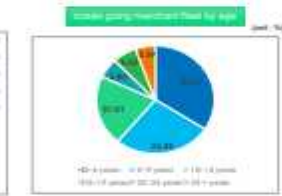
## 1. Introduction of Korea's shipping industry

■ Korean-flag overseas merchant fleet

- As the end of 2020, Korean-flag merchant fleet numbered 1,032 ships of about 48.5million gross tons
- Ships less than 30 years of age accounted for 61% of the total



Source: Ministry of Oceans and Fisheries



Source: Ministry of Oceans and Fisheries

## 2. Promotion of green ships

### 1) Priority conversion to green ships in the public sector

■ Public sector leads green shipping initiatives by constructing green government or municipal ships and remodeling of existing ships

- As of 2022, constructing new 43 green ships and remodeling of 30 existing ships in progress
  - New green ships: 28 government ships from Ministry of Oceans and Fisheries, 5 government ships from other ministries, 14 government ships from local governments and public institutions;
  - Remodeling of existing ships: installed DPF (Diesel Particulate Filter) for 30 government ships
- Various types of government ships: fishing guard ships, training ships, patrol ships, lobsterer and research ships etc.
- Green shipping technologies: LNG, hybrid, scrubber, SCR (Selective Catalytic Reduction), DPF (Diesel Particulate Filter), electrical power etc.
  - Hybrid: Diesel engine + Battery
  - Scrubber: De-NOx scrubber system
  - SCR (Selective Catalytic Reduction): NOx reduction system
  - DPF (Diesel Particulate Filter): Diesel particulate matter or soot filtration system

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## 2. Promotion of green ships

### 2) Project for supporting green and highly energy efficient ships

#### 1. Background

- In order to comply with international environmental regulations and improve the performance of national vessels, government support is provided to ocean oil ships (20 years or more) and newly upgrade to green and highly energy efficient ships

#### 2. Summary

- Who is eligible? Provider of overseas cargo transportation services
- Policy target: newly constructing 10 ships by 2022
- Selection criteria: age of ships, the eco-friendliness of the new ships, financial health of the company, growth potential, contribution to the related industries etc.
- Benefits: 130,000 Korean won per GT (within 10% of the new shipbuilding price)
- Project period: 5-year project, 2018-2022 (Similar project can be introduced after 2022)
- Conditions of eligibility: support provided after confirmation of the decommissioning (including sales) of existing ships and contracting the construction of green ships

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## 2. Promotion of green ships

### 2) Project for supporting green and highly energy efficient ships

#### 3. Outcome

- 7 ships (from 5 companies) in 2018, 8 ships (from 6 companies) in 2019, 6 ships (from 6 companies) in 2020, 13 ships (from 10 companies) in 2021, a total of 34 ships were supported, and 16 more ships are expected in 2022
- On average, 3.7% of the shipbuilding cost are covered

	2018	2019	2020	2021	2022	Total
Target (Number of ships)	7	8	6	13	16	50
Result (Number of ships)	7	8	6	13	16 (expected)	50

- Expected benefits: Estimated annual GHG reduction effects of 218,000 tons
  - Approximately 25 tons (daily fuel consumption of 2,500 TEU) X 280 days (annual operating days) X 0.2 (fuel saving ratio for new ships) X 3.114 (GHG emissions per ton) X 30 ships = 218,000 tons (subject to change depending on the type of vessels, operating days etc.)

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## 2. Promotion of green ships

### 3) Project for supporting green certified coastal ships

#### 1. Background

- Inducing voluntary participation through government support for private coastal shipping companies who are positive in switching to green ship
- Providing government support for new construction of green ships or replacement by applying nationally certified new technologies

#### 2. Summary

- Who is eligible? Coastal shipping companies (passenger and cargo etc.)
- Selection criteria: the eco-friendliness of the new ships, financial health of the company, growth potential etc.
- Conditions of eligibility: ships with an (interim) issuance of green ship certification
- Policy target in 2022: 5 coastal ships (including passenger ship, cargo ship, excursion ships and ferries etc.)

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## 3. Certification system of green ships

■ Granting certification to green ships and equipments to which new technologies are applied (introduced in 2021)

- Certification grades vary from grade 1 to 5 comprehensively considering the degree of difficulty in green shipbuilding technology (fuel consumption ratio, reduction ratio of air pollutants, energy efficiency design index etc.)
  - According to Article 13 of the Act on the Promotion of the Development and Distribution of Environment-friendly Ships, state government, local government, public institutions and local public entities are obliged to buy certified green ships when procuring ships
  - (Locally new emission ships are not yet feasible, so obtaining certification like grade 4 and 5 is a good plan)

Grade	Score	Note
Grade 1	≥ 80	Zero emission ship
Grade 2	≥ 50	Zero emission ship
Grade 3	≥ 35	Low emission ship (LNG, hybrid etc.)
Grade 4	≥ 15	High efficiency ship (high energy efficient design)
Grade 5	≥ 7	Installation of emission reduction system (SCR, scrubber etc.)

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## 4. Introduction of Korea's port industry

■ Enrichment of global container hub port and specialized development of base port

- Busan Port, the 7th largest container port in the world, established the status of container hub port - Securing global container base port competitiveness through development of new ports, supply of port hinterland, and expansion/separation of sea routes in preparation for larger ships

Port	2021	2020	YoY Growth
Shanghai	47,025	43,501	8.1%
Singapore	37,467	36,871	1.6%
Ningbo-Zhoushan	31,090	30,734	0.2%
Shenzhen	28,760	28,553	0.3%
Guangzhou	24,100	23,190	4.3%
Qingdao	23,700	23,005	7.7%
Busan	22,690	21,824	4.0%
Tianjin	20,260	19,356	10.4%
LA-Ling Beach	20,062	17,327	15.8%
Hong Kong	17,768	17,327	2.7%
Rotterdam	15,300	14,349	6.6%

Source: Alphaliner

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## 4. Introduction of Korea's port industry

- Drive economic growth by specializing in regional base ports such as Gwangyang Port and Incheon Port
  - [Gwangyang port] Continuing to modernize the container pier, such as converting the function of the existing container pier into an automobile pier and operating it in an integrated manner, and starting the operation of a large container crane with 24 rows (3 units) (2018)
  - [Incheon Port] Establish a foundation for development into a base port in the Pan Yellow Sea
  - Area, such as a full-scale opening of the new port (17.11), a stable increase in container volume (0.8% per year since 2015), and expansion of routes (18m, 17.5)
- Enhancing the Port Competitiveness of a Country by Expanding Port Infrastructure
  - Continuous expansion of port infrastructure drives national economic growth through ports ("300 billion dollars in exports in 2018, 7th in the world")
    - As of the end of 2020, 972 total ships were developed, and the port facility security rate continued to increase (100%)
    - \* Changes in the number of seos (785 in 10 years → 828 in 15 years → 879 in 18 years)
    - \*\* Changes in facility acquisition rate (93.3% in '10 years → 107.8% in '15 years → 100.5% in '19 years)

## 5. Special Act on Air Quality Improvement in Port & Other Areas

- Purpose**
  - This special act was enacted to systematically manage air pollution sources within the port area to protect the health of residents in the port area and nearby areas and to create a pleasant living environment. (Enforcement Date 01. Jan. 2020 / Act No. 16928, 02. Apr. 2019, New Enactment)
  - Accordingly, the MOF establishes a "comprehensive plan for improving air quality, such as port area", in accordance with Article 7 of the same Act (establishment of a comprehensive plan, etc.)
- Summary**
  - Designation of sulfur oxide Emission Control Area (ECA)
  - Designation of low speed area
  - Promote the purchase of eco-friendly ships
  - establish emission standard for unloading equipment
  - Facilitating the transition to eco-friendly unloading equipment
  - Expansion of supply of Alternative Maritime Power(AMP) in domestic ports

## 6. Establishment of an eco-friendly port

### 1) Priority conversion to green ships in the public sector

- 20% of domestic container port unloading equipment has been converted to eco-friendly equipment
  - The project to convert eco-friendly unloading equipment, which is funded by government, has been promoted since 2017 and 89% of domestic container port unloading equipment has been converted to eco-friendly equipment (Government 25%, Port Authority 25%, Operator 50%)

Port	Total number of equipment	Number of eco-friendly equipment	%
Total	743	669	90
Busan Port	442	443	100
Incheon Port	86	85	96
Gwangyang Port	75	64	84
Ulsan Port	26	23	90
Pyeongtaek-Ganghwa Port	23	19	84
Makran Port	12	3	27
Mosopo Port	11	11	100
Pohang Port	7	7	100
Gyeongju Port	4	3	75
Daejeon Port	3	3	100
Gunsan Port	2	2	100

## 6. Establishment of an eco-friendly port

### 2) Establishment of LNG bunkering infrastructure by strengthening environmental regulations

- Background**
  - Demand for LNG propulsion ships, which are eco-friendly ships, is expected to increase due to stricter environmental regulations of IMO
- Summary**
  - To proactively enter the LNG bunkering market, build LNG bunkering infrastructure facilities in major domestic trade ports
    - (Short-term) Expansion of dedicated facilities by utilizing existing LNG production bases, etc.
      - \* 3 receiving bases (Incheon, Pyeongsan, Tongyeong), 1 private terminal (Gwangyang)
    - (Mid-to-long term) Establishment of LNG bunkering terminals at Busan Port and Ulsan Port (-'20)

## Future Plan



## Support for global low carbon shipping

- Background**
  - In response to the IMO initial strategy revision discussion (Nov. 2021), government supports green shipbuilding cost (less than 10% of the total budget) for overseas cargo shipping companies to introduce more green ships
  - Requirements for green ships are strengthened to reduce emission or zero emission ships
    - \* Previously, requirements were limited to energy-efficient ships that can operate a long-distance with less fuel
- Summary**
  - Who is eligible? Provider of overseas cargo transportation services
  - Selection criteria: less than 10% of the total shipbuilding budget, low emission ships, high efficiency ships, etc. (granted support depending on the emission reduction rates)
  - Project period: 2023-2027

## Building a sustainable energy port that harmonizes eco-friendly and new industries

- Improving port quality by improving port environment such as air quality, water quality, marine ecosystem, etc. (83)**
  - Improving the atmospheric environment of ports and improving the quality of life of local residents by reducing the spread of scattering dust in ports and expanding the air quality monitoring system
  - Improvement of environment-friendly ship entry conditions by expanding AMP installation and establishing LNG bunkering infrastructure
  - Minimize water pollution and strengthen conservation of marine ecosystem due to the development and operation of new ports through environmental effects evaluation, periodic inspections, etc.
- Establishment of Distributed Energy Conversion Systems Expanding New and Renewable Energy Production Facilities (20%)**
  - Development of offshore wind power generation complexes and establishment of dedicated support facilities using wind resources in ports and nearby seas
  - Expansion of the introduction of solar power generation facilities in a port using the roof of a port and port background complex, idle land, etc. and utilization of electricity required by the port facilities themselves
  - Expanding support facilities for new and renewable energy production, such as importing eco-friendly hydrogen from abroad and establishing hydrogen storage infrastructure for water electrolysis

Thank you



## 첨부 2 2023년 KMI-UNESCAP 공동연구 프로젝트 제안서(UNESCAP안)



### Maritime sector XB Project plan in cooperation ROK (2023)

22, December 2022  
TCLS, TD

#### I. Summary

In 2023, cooperation with the Korean government in the maritime sector is planned to carry out the following two projects using a budget of USD 200,000.

These projects directly target the implementation of RAP Topic 2, "Interregional and Maritime Connectivity", and will also contribute to the achievement of related topics such as decarbonization and digitization.

Title	Budget	Remark
Advancing regional cooperation on sustainable maritime connectivity in Asia and the Pacific (2023)	USD 150,000 (MOF 13,000 KMI 20,000)	Multiyear project (2023~) Donor: Korea Maritime Institute
Study on smart port reforms and further digitalization of port and maritime transport	USD 70,000	Single year Project Donor: Korea Ports and Harbours Association
Total	USD 220,000	TBC

#### II. Projects detail (KMI Project)

1. Project Title	Advancing regional cooperation on sustainable maritime connectivity in Asia and the Pacific (2023)
2. Internal Reference	
3. Lead implementing division(s) or office(s)	Transport Division

10. Target group(s)	Policymakers, shipping lines, port authorities, terminal operators and transport service providers
11. External partner(s)	Korea Maritime Institute (KMI), Republic of Korea The Pacific Community (SPC)
12. Proposed funding sources	Korea Maritime Institute, Republic of Korea
13. Timeframe	February – December 2023
14. Total project budget	US\$ 150,000
15. Coordination Levy	US\$ 1,500 (tbc)

Project objective: To support member countries address their challenges in the maritime and port sector and strengthen regional cooperation to improve sustainable maritime connectivity

Expected output: Enhanced capabilities of stakeholders in the member States to develop sustainable maritime connectivity and promote regional cooperation and partnership

#### Activities:

- 1) Organize the annual regional forum on sustainable maritime connectivity to be held as part of regional dialogue to develop sustainable maritime connectivity and promote regional cooperation and partnerships (May 2023, Bangkok)
- 2) Support national action plans to improve maritime connectivity in the member states of the region in 2023

Annex 1: Plan to hold the 1<sup>st</sup> physical edition of "Asia-Pacific Regional Forum on Sustainable Maritime Connectivity"

- Topic: Low-Carbon/Net-Zero Strategies for maritime transport in Asia and the Pacific Region
- Date and place: 30-31, May 2023, Bangkok (tbc)
- Purpose: Developing decarbonization strategies in the shipping and port sector in Asia and the Pacific region and strengthening regional cooperation and partnership
- Tentative Programme (tbc)
  - Opening Session: Opening, Keynote Speech
  - Session 1: Global Strategies for Low-Carbon, Net-Zero Maritime Transport

4. Other implementing division(s) or office(s)	SRO: SEA
5. Subprogramme deliverables	In line with the ESCAP programme of work for 2023 for subprogramme 3, Transport, the proposed project is associated with the overall objective of the Organization: To achieve sustainable transport connectivity, logistics and mobility in the Asia-Pacific region Deliverable B: Generation and transfer of knowledge (Field and technical cooperation projects)
6. Gender Marker	GBM 1: Project contributes to gender equality/women's empowerment in a limited way
7. Link to SDGs	The project will contribute to the implementation of Sustainable Development Goal (SDG) targets 9.1 (Develop quality, reliable, sustainable and resilient infrastructure) and 9.4 (By 2030, upgrade infrastructure and retrofit industries to make them sustainable) given that port services and maritime connectivity play an important role in supporting the sustainable development of not only the Least Developed Countries (LDC) but also Small Island Developing States (SIDS), as key infrastructure for economic development and social integration in member States.
8. Link to Regional Roadmap for Implementing the 2030 Agenda in Asia and the Pacific	The project is aligned with the means of implementation and partnership identified in the Regional Roadmap, with particular contributions being envisaged in the area of enhancing technology and policy coherence by facilitating the sharing of best practices and capacity-building across member countries (para 16 (a)) and promoting integrated policies based on systems approaches and methodologies (para 20 (c)). The project is directly linked to the objective described in para 32(a) of the Regional Roadmap: Develop and integrate maritime connectivity and implement regional transport facilitation frameworks and other technical standards for operationalizing transport connectivity. In addition, this project will contribute to implementing several thematic components of the Regional Action Programme for Sustainable Transport Development in Asia and the Pacific (2022-2026), including: Area 2: Maritime and interregional transport connectivity: Indicator of achievement: Systematic and regular exchange of best practices and experiences on the issues and priorities for sustainable maritime connectivity in Asia and the Pacific Area 4: Low carbon mobility and logistics: Indicator of achievement: Increased capacity of relevant stakeholders to implement global regulations and instruments to enhance the environmental sustainability and resilience of maritime transport
9. Target sub-region(s) and/or countries	ESCAP developing member States

- Session 2: Eco-friendly port development and operating in Asia and the Pacific region (best practices and lessons learned)
- Session 3: Maritime energy conversion and technology innovation for Low Carbon/Net Zero
- Session 4: Green Shipping Corridor strategies in Asia and Pacific region
- Session 5: Regional cooperation and partnership for low-carbon and net-zero in Asia and Pacific region
- Participating institutions
  - Member States
  - International organizations (IMO, UNCTAD, IAPH)
  - Regional Org (ASEAN, SPC)
  - MDB (WB, ADB)
  - Private and experts: Classification association, Shipowners Association, Academia, shipping lines, terminal operators, shipyard

Annex 2: Status report on port development and maritime connectivity Asia and the Pacific: 2023

An annual analytical report to offer:

- Consistent research and analysis on development trends and major issues of maritime transport in Asia and the Pacific
- Contribute to achieving RAP's objectives and achievements indicators
- Continuous and consistent annual monitoring system
- Data collection and management for activities related RAP and annual report
- Contribute to predictable and consistent policy development
- Highlight and disseminate best practices

# **Projects detail (KPHA project)**

1.	Project Title	Study on smart port reforms and further digitalization of port and maritime transport
2.	Internal Reference	
3.	Lead implementing division(s) or office(s)	Transport Division
4.	Other implementing division(s) or office(s)	IDD
5.	Subprogramme deliverables	In line with the ESCAP programme of work for 2023 for subprogramme 3, Port digitalization index development and pilot study on selected ports in the Asia-Pacific Region, the proposed project is associated with the overall objective of the Organization: To achieve sustainable transport connectivity, logistics and mobility in the Asia-Pacific region Deliverable B: Generation and transfer of knowledge (Field and technical cooperation projects)
6.	Gender Marker	GBM 1: Project contributes to gender equality/women's empowerment in a limited way
7.	Link to SDGs	The project will contribute to the implementation of Sustainable Development Goal (SDG) targets 9.1 (Develop quality, reliable, sustainable and resilient infrastructure) and 9.4 (By 2030, upgrade infrastructure and retrofit industries to make them sustainable) given that digital port technology and innovation can play a vital role in supporting sustainable port development by driving growth and productivity.
8.	Link to Regional Roadmap for Implementing the 2030 Agenda in Asia and the Pacific	The project is aligned with the means of implementation and partnership identified in the Regional Roadmap, with particular contributions being envisaged in the area of enhancing technology and policy coherence by facilitating the sharing of best practices and capacity-building across member countries (para 16 (a)) and promoting integrated policies based on systems approaches and methodologies (para 20 (c)).  The project is directly linked to the objective described in para 32(a) of the Regional Roadmap: Develop and integrate maritime connectivity and implement regional transport facilitation frameworks and other technical standards for operationalizing transport connectivity.  In addition, this project will contribute to implementing several thematic components of the Regional Action Programme for Sustainable Transport Development in Asia and the Pacific (2022-2026), including:  Area 3: Digitalization of transport: Indicator of achievement: Increased: Increased capacity of members and associate members to implement smart port reforms and support the digitalization of port and maritime transport

9.	Target sub-region(s) and/or countries	ESCAP member States with potential focus on the selected ports in the ASEAN countries
10.	Target group(s)	Policymakers, port authorities, terminal operators and transport service providers
11.	External partner(s)	Korea Ports and Harbours Association (KPHA), Republic of Korea
12.	Proposed funding sources	Korea Ports and Harbours Association (KPHA), Republic of Korea
13.	Timeframe	February – December 2023
14.	Total project budget	US\$ 70,000
15.	Coordination Levy	N. A

Project objective: Develop port digitization index and promotion of port digitization through practical application to selected ports

Expected output: Evaluate port digitization and promote digital transformation through port digitization index

## **Activities:**

- 1) Organize capacity development workshop for port digitization index development and actual application (Tanjung Priok, October, 2023, the )
- 2) Study to develop port digitization index and its actual application to the selected ports

## 첨부 3

# UNESCAP 내부 발표자료\_IMO historical opportunity to promote conservation and sustainable use of the oceans by Pierre Jean Bordahandy\_University of South Pacific

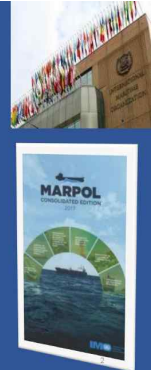
## “IMO’s historical opportunity to promote conservation and sustainable use of the oceans, seas and marine resources in line with ESCAP/RES/76/1”.

Pierre-Jean Bordahandy  
Associate Professor – School of Law  
The University of the South Pacific

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## Content of the Presentation

- Background of this presentation
  - Disclaimer
  - The IMO Membership Specificity
- Legal challenges at the IMO
  - Fragmentation of PIL & IEL
- ESCAP/RES/76/1
  - Protection of the environment, Pollution (i.e. plastic & invasive species), Science Based approach, Public / private partnership for conservation, sustainable fisheries, tourism, Disaster relief, Sustainable Energy (SDG13 & 14) & Maritime Connectivity
- The economics of market transition
- The IMO measures & the Levy Proposal
  - The Levy rationale & administration
  - Alternative fuels conundrum (emissions / costs)
  - The Equitable Transition Requirement
- Conclusion



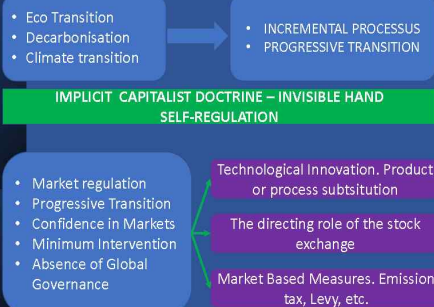
International Shipping represents 80% of the World Trade.  
International shipping represents around 3% of total GHG emissions, which would put it in the 6th position as emitters if that industry was a country.  
Yet, heavy bunker fuel used in international shipping is TAX FREE.

2

## The GHG Debate Economic Background

GHG Pollution in International shipping is a “negative externality”. Even in liberal market economy, taxation is the only way to address this. Polluters Pay Principle. *If shipping is not going to pay its externalities, who should pay?*

- member states (and if so which ones)?
- the climate most vulnerable?
- future generations?



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## Levy Rationale and Administration

Int. SHIPS PORTS ALT FUELS

In Sector

MEPC 76/7/12, MEPC 77/7/4 - RMI & SOL have proposed a universal mandatory GHG levy on bunker fuel with an initial entry price of \$100/tonne CO2-equivalent.

The primary purpose of the levy is to address the price differential

A necessary by-product of an effective MBM is the generation of considerable revenues

What will then have to be agreed is:

- Who will be the fund manager for the funds generated?
- What the funds will be spent on?

SDGs Adaptation Resilience Loss & Damage

Out of Sector

4

## Cumulative costs, Scenario C ultimately highest cost

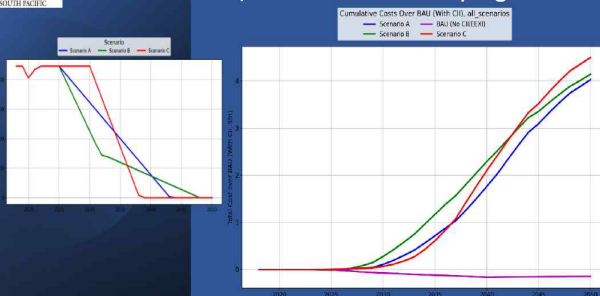
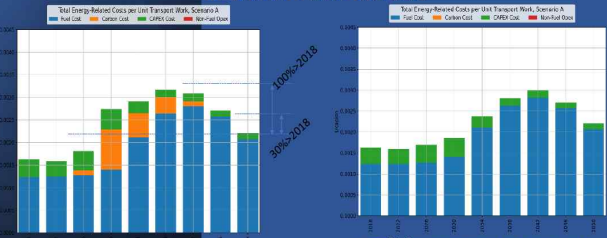


Figure 0.2 – Cumulative energy-related costs over BAU (with CII/EEEXI) for core scenarios

Source Tristan Smith - UMAS

## Levy cost profile over time per tonne, with 50% and 100% in-sector revenue use



50% in-sector revenue use

100% in-sector revenue use

Source Tristan Smith - UMAS



## Equitable Transition to Decarbonised Shipping

- No definition of what is equitable
- PIL recognise equity
- Manifestation of Equity in PIL and IEL is by creating a differential treatment between States.
- At the UNFCCC differential treatment has taken the shape of the CBDRC-RC principle
- Differential treatment at the IMO
  - Non discrimination between flags
  - Impact of IMO measures on States

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## Conclusion

A MBM Levy type such as the one submitted by RMI & S.I. is the only solution susceptible provide an incentive to decarbonise shipping and create revenue to support transition for some developing countries, SIDS and LDCs as required by equity in International Law.

This kind of revenue directly from the industry, even if temporary, would permit to achieve most of the SDG Goals as well as most of the objectives of the ESCAP/RES/76/1

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## 국외출장계획서

구 분	내 역					
출장자	소속	해운연구본부 해운정책연구실	성명	이호춘	직급	부연구위원
출장목적 (중복선택 가능)	<input checked="" type="checkbox"/> 현지조사(현장, 전문가 회의) <input type="checkbox"/> 국제행사 주최 <input type="checkbox"/> 국제행사 참가 <input type="checkbox"/> 국제회의(정부대표단) 참석 <input type="checkbox"/> 세미나, 교육, 훈련 <input checked="" type="checkbox"/> 기타(중장기 사업발굴)					
관련사업 (예산항목)	아·태 해양정책 연구사업-UNESCAP 공동연구 협력사업					
공무 항공마일리지 활용계획	성명	보유 마일리지	활용계획		미활용 사유	
	이호춘		없음		마일리지 사용 불가	
출장기간	2022. 12. 20. ~ 2022. 12. 23. (3박 4일)		출장지		태국, 방콕	
출장일정	일자	방문지	주요업무*		항공편	
	12.20(화)	• 부산-김포 • 인천-방콕(18:00-22:10)	• 공항 이동 • 출국		국내선 이용 or KTX KE651	
	12.21(수)	• UNESCAP Transport Division	• Meeting with Director Weimin Ren(Transport) • Closed Workshop on 2022 KMI-UNESCAP Project		• MI-ESCAP 협동연구관련 피지세미나 결과 정리 및 탈탄소 해운 리포트 작성 일정 협의	
	12.22(목)	• UNESCAP Transport Division	• Closed Workshop on 2023 KMI-UNESCAP Project, A Study on the Implementation of Green Shipping Corridors in the ESCAP Region		• KMI-ESCAP 협동연구 진행상황 점검 및 향후 중장기연구주제(녹색해 운회랑 등) 발굴.	
	12.23(금)	• 방콕-인천(09:40-17:20) • 김포-부산	• 귀국 • 공항 이동		KE660 국내선 이용 or KTX	
출장경비	성명	경비총액(안)		경비 부담기관		특이사항**
	이호춘	이호춘 부연구위원 - 일비 : \$30×4일 = \$120 - 식비 : \$44×4일 = \$176 - 숙박비 : 실비 적용 예정 - 항공료 : 약 1,300,000원		KMI		- 여행자보험료 및 현지교통비 사후정산 - 로밍비(공무상 필요에 의함) 사후정산 - 회의비, 선물구입비 집행 예정

- 1) 적용기준 : 여비규정 “다(타이)” 등급지 적용, ‘식비 및 숙박비’ 상급자 기준 적용, 워크숍 참석 편의를 위해 UNESCAP측 지정 호텔 이용 관계로 숙박비 상한 초과 가능성 있음
- 2) 입국 시, 서울-부산 간 국내선 연결 가능 시간 외 도착으로 공항 근처 국내 숙박 가능성 있음

## 주요 업무내용 (계획( √ ), 결과(    ))

업무유 형	<input checked="" type="checkbox"/> 현지조사(현장, <input type="checkbox"/> 국제행사 <input type="checkbox"/> 국제행사 참 전문가 회의)                      주최                      가 <input type="checkbox"/> 국제회의(정부 <input type="checkbox"/> 세미나, 교 <input checked="" type="checkbox"/> 기타(중장기 대표단) 참석                      육, 훈련                      사업발굴)
업무	KMI-UNESCAP 공동연구 협력사업 관련 2022년 진행사업 피지(Fiji) 세미나 결과 점검 및 탈탄소 해운 도입전략 관련 리포트 작성 일정 협의와 2023년 이후 중장 기 협력사업 관련 주제 발굴을 위한 내부 워크숍 참석
수행계 획	○(배경) 아시아 및 태평양 지역의 지속가능한 해양교통 발전을 도모하고자 KMI- UNESCAP은 주제발굴 및 공동 연구사업 수행, 국제 워크숍 개최 등을 통하여 지 역에 필요한 해상교통 정책 및 사업 기회를 발굴하여 지속가능한 지역 발전에 기여하고 있으며 중장기적으로 역내 회원국들의 탈탄소 대응 방안 마련을 준비 하고 있음 ○(목적) IMO와 EU를 중심으로 선박배출 온실가스에 대한 환경규제가 강화되고 있 는 시점에서 ESCAP 역내 국가들이 국제선박 환경규제에 최소의 사회적 비용으 로 대응할 수 있도록 회원국 대상 해운 탈탄소 대응전략 마련을 모색하고자 함 ○(계획) 동아시아.태평양 지역 국가 및 다자 간 협력체계 구축을 통한 ESCAP 역 내 국가 동향 파악 및 IMO, UNESCAP 등 국제기구 간 네트워크 강화, 탈탄소 대응관련 동북아 지역(한국, 중국, 일본 등)의 우수 사례 발굴 및 전파
수행결 과	※ 결과보고 시 작성

\* 업무별 수행 결과는 각 700자 이내로 작성(관련 사진, 도표  
 필요시 추가)

\* 보고서 총 분량은 10페이지 내외로 작성(필요시 조정)