Executive Report of

The Shenzhen Global Marine Economy Forum 2023

Expanding the Blue Economy Potential

Nov 23-24 Shenzhen China

The Shenzhen Global Marine Economy Forum, as the Strategic Forum of China Marine Economy Expo was held on 23-24 November in Shenzhen, China. More than 60 speakers comprising government officials from China and foreign countries, from the business and technology sectors, from academia and from international organizations, engaged in discussions, on topics including marine technology, marine industry, shipping and transportation, maritime civilization, and ocean cooperation and governance.

The discussions aimed at promoting exchanges of insights and expertise on top marine economy issues, at accelerating the development of blue partnerships. In doing so, the Forum has been fulfilling its mission to contribute to the high-quality development of the ocean economy, to expand the interaction between China's marine economy sector and top centers of marine activity in the world and to enhance the positioning of Shenzhen as an emerging global marine city.

Speakers unanimously agreed that sustainable ocean development has now become a top priority at the international level. This includes the responsible management of ocean resources, the protection of the marine environment, and the promotion of sustainable ocean economies. Participants emphasized that ocean cities should actively adopt green technologies and practices to mitigate the adverse effects of marine issues such as ocean pollution and rising sea levels.

Another thread line in all the sessions at the Forum was the recognition of the role of ocean technology and innovation in the development of the blue economy and of global maritime hub cities. Ocean technology not only facilitates the efficient exploitation of marine resources but also enhances marine environmental monitoring and the safety of shipping and transportation. Maritime cities should encourage technological research and innovation to continuously improve their competitiveness and sustainability.

More importantly, through research in ocean science, ocean engineering, and ocean technology, crucial support is provided to addressing global challenges. This includes climate change research, marine pollution monitoring, and the development of marine energy sources, among others. Technological innovation in maritime cities contributes to addressing global issues and providing solutions for the global society and international community.

Another common trend that permeated the discussions was that ***international cooperation and knowledge sharing are essential for the sustainable development of the global marine economy.*** Maritime issues often transcend national boundaries and require cooperation and information sharing among countries and global marine hubs. Establishing international partnerships and mechanisms for knowledge exchange can accelerate the resolution of marine challenges and contribute significantly to expand the role and importance of the blue economy in the global economy.

Beyond the key orientations that emerged from the discussions at the Forum, a number of practical recommendations were made, creating very valuable action-oriented outcomes from the Forum. Here are some of them:

- **On developing Shenzhen as a global marine hub**

Playing a role in the development of marine technology is a crucial factor in positioning a city as a global marine hub. This could encompass technological innovations in areas such as ocean observation, ecological conservation, and marine resource development. This is particularly true for a city like Shenzhen with a wealth of high-tech industries. Leveraging advanced technologies from land to sea is a pivotal development direction.

Shenzhen should encourage and support the development of various sectors within the maritime industry to stimulate employment and economic growth, including fisheries, marine tourism, and marine energy. Shenzhen can capitalize on its vibrant market economy and developed industries as competitive advantages in this endeavor.

Shipping and transportation have also to be given a vital role in Shenzhen's ambition to be a global maritime hub. As an international port city situated at the mouth of the Pearl River, Shenzhen has achieved significant success by leveraging its outstanding ports and shipping transportation systems. It boasts one of the world's busiest ports which serves as a crucial hub in the global shipping network, connecting with major ports worldwide. Shenzhen's economic prosperity is closely tied to shipping and transportation. Industries related to ports, vessel operations, freight forwarding, logistics, generate substantial employment opportunities, and contribute to the city's economic growth. The shipping and transportation industry also attracts domestic and foreign investments, further strengthening Shenzhen's status as a global maritime city.

Shenzhen can also actively contribute to global ocean governance by establishing marine think tanks to contribute to the advancement of research in that domain. This will enhance its international reputation and influence and elevate its position in global maritime affairs.

Shenzhen's development as a global ocean center city should involve "Four Integrations": synchronizing with the Guangdong-Hong Kong-Macao Greater Bay Area, integrating with the national marine center city cluster, aligning with the "Belt and Road" Maritime Silk Road initiative, and fitting into the global ocean center city assessment system.

- **On developing China’s marine economy**

Constructing the Pan-South China Sea Economic Cooperation Circle as a strategic goal for the 21st Century Maritime Silk Road. He emphasized relying on interconnected maritime infrastructure to promote open free trade cooperation

areas and strengthen marine economic and industrial cooperation.

Advancing Blue Economy Cooperation in marine ecological environment governance and jointly building blue industrial chains and supply chains to deepen marine economic cooperation.

Implementing a Unilateral Opening Strategy, including opening the marine fisheries market to ASEAN, collaborating to build marine ranches, and jointly developing deep-sea resources to establish oil and gas extraction, tourism cooperation circles, and marine environmental protection circles.

- **On expanding China's role in global ocean governance:**

1) China should actively participate in the "United Nations Decade of Ocean Science for Sustainable Development" as part of the United Nations 2030 Agenda for Sustainable Development. The Chinese Ministry of Natural Resources has established a Committee to organize and promote work related to the United Nations Decade of Ocean Science. Beijing has also submitted several plans and projects, which have been adopted by the United Nations Decade of Ocean Science program, and encouraged Chinese government departments, scientific community, and business sector to propose more projects and plans.

2) The Agreement under the United Nations Convention on the Law of the Sea for the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction" (BBNJ Agreement) covers the high seas and the international seabed areas, setting many new systems and rules for the conservation and sustainable use of marine biodiversity. This marks a new era for global ocean governance and poses challenges in coordinating with existing rules. China should play a very active role in implementing this agreement and in adjusting existing rules and creating new ones to ensure the full effectiveness of the agreement.

3) China can make more contributions in the areas of green, low-carbon development, and international cooperation. China's position as the world leader in offshore wind power installation capacity for two consecutive years gives the country the credibility for promoting actively the role of the oceans in the global energy transition. China's explorations in estimating the value of ocean carbon sinks, desalination utilization, and blue finance, can also be of great relevance for international cooperation and can contribute to strengthening international exchanges in these areas.

- **On Developing a sustainable blue food industry**

Recommendations were made for the sustainable development of the blue food industry, including establishing reliable and predictable regulations, raising consumer

awareness of healthy and sustainable food, and applying technology and rational resource management. A particular emphasis was put on the importance of resource processing and waste utilization, citing Iceland's success in using fish waste.

- **On the development of blue finance**

As China is striving to build a marine powerhouse and a financial powerhouse, blue finance has to be seen as an integral part of the financial powerhouse strategy. Enhancing education, fostering interdisciplinary talent, and establishing effective industry linkage mechanisms are part of the necessary actions to further promote the development of blue finance.

- **On blue carbon: Fighting Climate Change and Leveraging Business Opportunities**

There is an urgent need for developing new technologies and industrializing existing ones to effectively implement blue carbon storage. If current technologies could be industrialized, they might form a profitable solution, which is crucial for sustainable blue carbon storage projects. However, storing large amounts of carbon dioxide in deep-sea environments necessitates considering some potential long-term risks, such as gas leakage and consequent geological disasters. These risks can be mitigated by using digital technologies and artificial intelligence tools, such as installing sensors, to monitor conditions and risks on the seabed, thus providing necessary safety measures for large-scale storage plans.

One key objective is to develop and implement strategies to enhance blue carbon development capabilities, especially from the perspective of market investors, exploring policy incentives and looking at market best practices. In that respect,

It is now important to develop a national carbon emission trading market in China, particularly the voluntary emission reduction trading market, known as the "China Certified Emission Reduction (CCER)" market. Mangroves, as a significant marine blue carbon resource, will become an important part of the carbon emission rights trading market, with an expected annual reduction of at least 30 to 50 million tons entering the national carbon market. Chinese financial regulatory authorities have put in place support policies for green and blue finance such as the carbon reduction monetary support tool launched by the People's Bank of China, providing funding support for carbon reduction and blue carbon projects.

Official Opening Ceremony

Speakers:
ZHANG Jinzhou, Deputy Secretary General of Shenzhen Municipal People's Government
LV Bin, President of China Oceanic Development Foundation
YANG Hong, President of Global Ocean Capital Promotion Council of Shenzhen
HE Guangshun, Director-General, Department of Marine Strategy, Planning and Economy, Ministry of Natural Resources
Rena Lee, Ambassador for International Law
Thórir Ibsen, Ambassador of Iceland to China with accreditation to Mongolia, Vietnam and Thailand
Evgenios Kalpyris, Ambassador of Greece to China
Efstathios Andreou, Consul General of the Kingdom of the Netherlands in Guangzhou

ZHANG Jinzhou, Deputy Secretary General of Shenzhen Municipal People's Government, first welcomed the leaders, guests, and friends attending the forum. He emphasized President Xi Jinping's attention to marine work and Shenzhen's historical mission as a marine center city, along with its achievements in marine economy, technological innovation, and ecological civilization. He highlighted four main accomplishments: the growth of the marine economy, advancements in marine technological innovation, improvements in marine ecological protection, and the deepening of international marine cooperation.

LV Bin, President of China Oceanic Development Foundation hoped that guests attending the forum could share new ideas and provide new methods for building a global maritime center city with international competitiveness, attractiveness and creativity. LV Bin pointed out that the ocean is an important global strategic resource and emphasized China's development driven by its maritime power strategy and the "One Belt, One Road" initiative. He noted that Shenzhen is in a critical period of building a global ocean center city. The China Oceanic Development Foundation will continue to promote cooperation in all aspects with a view to building Shenzhen into a model of global ocean city development.

YANG Hong, President of Global Ocean Capital Promotion Council of Shenzhen, emphasized the significance of the ocean in economic and social development. He noted that Shenzhen is accelerating its transformation into a global marine center with innovation and influence. Yang Hong highlighted that this edition of the forum focused on various aspects such as marine technology, industry, transportation, civilization, and cooperative governance, showcasing a range of rich topics and activities. He underscored the efforts of the Global Ocean Capital Promotion Council of Shenzhen especially in connecting global marine resources and advancing high-quality development in the marine sector. He expressed his hope for shared opportunities

and collaboration in marine development, looking forward to annual gatherings at The Shenzhen Global Marine Economy Forum in the future.

HE Guangshun, Director-General of the Department of Marine Strategy, Planning and Economy at the Ministry of Natural Resources highlighted President Xi Jinping's emphasis on the ocean's significance for high-quality development and the ongoing growth and strengthening of China's marine economy and its self-innovative capabilities. Mr. He offered three suggestions: firstly, to enhance marine technological innovation and expand the marine industry's capacity; secondly, to establish a modern marine governance benchmark and promote the economical use and ecological protection of marine resources; and thirdly, to create a gateway for marine openness and cooperation, enhancing the quality of marine life. He also mentioned the new mission endowed upon Shenzhen as a pioneer of reform and opening up, and contributor to the building of a strong marine nation.

Rena Lee, Ambassador for International Law, highlighted the recent signing of the Biodiversity Beyond National Jurisdiction (BBNJ) agreement, underscoring that this accord allows nations to share competitive advantages, mitigate the environmental impact of economic growth, and convert marine-related technologies and science into productive forces. Lee noted that the agreement transcends national and regional constraints, fostering genuine international cooperation to protect our shared oceans.

Rena Lee also pointed out that the BBNJ agreement bolsters cooperation, surveillance, and management of resource utilization. This includes safeguarding biodiversity, overseeing ecosystem degradation, reducing carbon dioxide emissions, and managing marine water quality and pollution. She mentioned specific initiatives under the BBNJ agreement aimed at achieving the United Nations Sustainable Development Goals. Additionally, Lee noted this treaty’s role in broadening the scope of the blue economy, closely integrating it with sustainable green development.

Thórir Ibsen, Ambassador of Iceland to China, Mongolia, Vietnam and Thailand, pointed out that while the marine economy is vital for our survival, our developmental activities have put pressure on marine ecosystems. Globally, 34% of fishery resources are overfished, and over 80% of fisheries cannot sustain the growing scale of fishing, leading to environmental degradation and pollution. To sustain the development of the blue economy, nations worldwide must change the way marine economies are developed and managed.

Ambassador Ibsen shared Iceland's experience in sustainable blue economy development, mentioning how the Icelandic government established a national fisheries management system, including scientific resource assessment and management, transferable fishing quotas, and transparent regulatory and enforcement mechanisms. He urged nations to view the marine economy as a source of continuous growth and innovation and to prioritize sustainable economic activities.

Evgenios Kalpyris, Ambassador of Greece to China highlighted that maritime transport is a pillar of global trade, with nearly 90% of goods being transported by sea. He noted that the shipping sector accounts for over 85% of global sea transportation in terms of ton-miles and is also the most energy-efficient mode of transport. Greece is the world's leading ship-owning nation, controlling the highest share of the global merchant fleet, despite its relatively small population.

Ambassador Kalpyris discussed the role Greek shipowners have played in the development of China's shipping industry, especially in the construction of Chinese shipyards and the placing of new ship orders. He stressed the mutually beneficial cooperation between Greece and China in shipping, particularly the crucial role of the Greek commercial fleet in the "Belt and Road" initiative.

Efstathios Andreou, Consul General of the Kingdom of the Netherlands in Guangzhou, emphasized the importance of the maritime economy, particularly mentioning the development journey of the Netherlands in this field. He reflected on the 400-year-long historical relationship between the Netherlands and China, especially during the era of the maritime Silk Road. Andreou stressed the role of the Netherlands in tackling the challenge of climate change and its commitment to a circular economy and sustainable development. Andreou highlighted the importance of digital technology, and energy innovation, calling for the abandonment of old models to create a new, sustainable, digitalized future. He looked forward to continued collaboration between the Netherlands and China in exploring maritime development opportunities.

China's Marine Economy by 2030

Speakers:
Signe Brudeset, Ambassador of Norway to China and Mongolia
PAN Xinchun, Vice President and Secretary-General of China Oceanic Development Foundation
CHI Fulin, President of China (Hainan) Reform and Development Research Institute
ZHOU Jinfeng, Vice Chairman and Secretary-General of China Biodiversity Conservation and Green Development Foundation, Fellow of the World Academy of Arts and Sciences, and Executive Committee Member of the IUCN Marine Connectivity Working Group
Klaus Zenkel, Vice President of the European Union Chamber of Commerce in China and Chair of the European Chamber South China Chapter

Moderated by:
GUO Jian, Country Manager, Norwegian Energy Partners China

Ambassador Signe Brudeset emphasized the importance of the ocean for the economies of Norway and China. The ocean is not only a source of life and culture but also a key area for economic and technological innovation. Furthermore, she highlighted the role of the ocean in environmental protection and sustainable development, particularly in addressing climate change and promoting green energy.

The Ambassador underscored the ocean's critical role in environmental protection and sustainable development, stressing the importance of protecting the marine ecosystem for maintaining biodiversity, reducing carbon emissions, and promoting the development of green energy. Additionally, she mentioned how marine resources can be used to achieve a low-carbon economy and a sustainable future. She mentioned Norway's world-leading position in shipping, seafood export, and offshore wind power.

Pan Xinchun, Vice President and Secretary-General of China Oceanic Development Foundation, pointed out that despite the impact of the pandemic and international situation, China's marine economy, is rapidly recovering, at a rate and effectiveness remarkable on a global scale. For him, this is due to the inherent logic and principles of China's economic development, particularly in the marine economy, as well as the implementation of strategies such as innovation-driven development, green development, open cooperation, and expanding domestic demand.

Mr. Pan emphasized that innovation is a key factor in driving the development of the marine economy. China is accelerating its digital transformation and actively supporting new technologies such as big data, cloud computing, artificial intelligence, and quantum computing. These technologies contribute to the high-end development of China's marine economy, enhancing its competitiveness in the global market.

In the face of challenges such as climate change and natural disasters, green development is an inevitable choice. China is committed to ecological prioritization and green development, accelerating the transition to low carbon, with significant achievements in areas such as offshore wind power and marine ecosystem restoration.

Mr. Pan stressed the importance of open cooperation for the development of the marine economy. China has signed the "Belt and Road" cooperation agreements with many countries, engaging in international cooperation beyond marine ports and shipping to include marine technology, governance, and infrastructure development, providing strong support for the rapid development of China's marine economy.

Chi Fulin, President of China (Hainan) Reform and Development Research Institute, highlighted the increasing opportunities for global marine economic cooperation, while acknowledging marine governance challenges. The promotion of this cooperation is key to addressing these challenges. In addition to building a

competitive marine service system, and fully utilizing think tanks for intellectual communication and cultural exchange, he offered the following recommendations:

● Constructing the Pan-South China Sea Economic Cooperation Circle as a strategic goal for the 21st Century Maritime Silk Road. He emphasized relying on interconnected maritime infrastructure to promote open free trade cooperation areas and strengthen marine economic and industrial cooperation.

● Advancing Blue Economy Cooperation in marine ecological environment governance and jointly building blue industrial and supply chains to deepen marine economic cooperation.

● Implementing a Unilateral Opening Strategy, including opening the marine fisheries market to ASEAN, collaborating to build marine ranches, and jointly developing deep-sea resources to establish oil and gas extraction, tourism cooperation circles, and marine environmental protection circles.

ZHOU Jinfeng, Vice-Chairman and Secretary-General of China Biodiversity Conservation and Green Development Foundation, Fellow of the World Academy of Arts and Sciences, and Executive Committee Member of the IUCN Marine Connectivity Working Group, stressed the concept of ecological civilization as the guiding beacon for the development of the marine economy in harmony with environmental protection.

Thew role of technology is crucial in understanding and addressing challenges in the marine economy and its crucial importance for the sustainable development of the marine economy. Addressing climate change and protecting biodiversity are of vital importance for the long-term development of the marine economy, necessitating new technologies to achieve these goals.

Klaus Zenkel, Vice President of the European Union Chamber of Commerce in China and Chair of the European Chamber South China Chapter, focused on the importance of the shipping industry as a key component of the marine economy, especially its efforts in sustainable development and decarbonization, which are crucial for the overall development of the marine economy. He mentioned the EU Chamber's activities in promoting green shipping, including the application of low-carbon technologies and the construction of green infrastructure.

Shenzhen as a Global Marine Capital

Speakers:
CHEN Weijie, Professor level senior economist, former general manager of the Planning Department of CNOOC, Senior Advisor of Global Ocean Capital Promotion Council of Shenzhen
YU Ya, Senior Advisor of Global Ocean Capital Promotion Council of Shenzhen, Former Deputy Secretary of the Party Committee of CIMC Group
ZHANG Chunyu, Researcher of the Chinese Academy of Social Science Senior Advisor of Global Ocean Capital Promotion Council of Shenzhen
Erik W. Jakobsen , Partner and Chairman, Menon Economics, Norway
Claude Smadja, President, Smadja & Smadja Strategic Advisory Switzerland, Senior Adviser of Global Ocean Capital Promotion Council of Shenzhen

Moderator:
WANG Feng, Chief Editor of Financial Times Chinese

Erik W. Jakobsen , Partner and Chairman of Menon Economics, Norway, identified the key elements for developing a leading global maritime center city. He emphasized the importance of clearly defining the city's purpose and mission, pointing out that to develop a leading maritime center city, it is first necessary to clearly define the city's purpose and mission, and create a structure and vision around these goals. This includes understanding and identifying the key factors driving the city's development. He stressed the importance of strategic tools such as support from non-profit associations, standards setting, and rankings, to enhance the city's competitiveness and attractiveness and guide its developmental direction.

Jakobsen discussed the four core pillars of building a maritime center city: the ship industry and its associations, port and logistics industry, application of technology, and maritime-related services. He further explored the driving forces and areas for improvement behind these pillars, including the city's strategic location, an open and transparent legal framework, and the establishment of trust-based relationships. These factors are crucial for the development of maritime cities, especially in promoting cooperation between the maritime industry and relevant stakeholders.

ZHANG Chunyu, Researcher of the Chinese Academy of Social Science , Senior Advisor of Global Ocean Capital Promotion Council of Shenzhen, analyzed the process and prospects of Shenzhen's development into a global maritime center city. He noted that significant achievements have been made since the goal was set for Shenzhen to become a maritime center, emphasizing the central role of the "blue economy" concept in the city's development.

Professor Zhang Chunyu considers Shenzhen's adoption of the blue economy as the core concept of urban development to be highly forward-thinking. The blue economy focuses on sustainable development, environmental sustainability, inclusivity, and

efficient use of resources, making it a crucial subset of the maritime economy. Although the blue economy and traditional maritime economy do not differ significantly in industrial scope, the former places greater emphasis on sustainability and environmental protection. Against the backdrop of globalization and changes in the industrial chain, digitalization, greening, and low-carbon transformation are key distinguishing features between the blue and maritime economies.

Professor Zhang Chunyu emphasized the central role of blue finance in advancing the development of the maritime economy. For him, Shenzhen should play a key role in the development of China's blue finance, promoting the global leadership in industries such as digital technology, artificial intelligence, marine new energy, and energy storage systems.

CHEN Weijie, senior economist, former general manager of the Planning Department of CNOOC, Senior Advisor of Global Ocean Capital Promotion Council of Shenzhen, provided an in-depth analysis of Shenzhen's achievements and shortcomings in building a global ocean center city over the past five years. Shenzhen has made significant progress in terms of marine economic output, the number of marine-related enterprises, and contributions to major national projects. However, there have been missed opportunities, such as the stagnation of the China Offshore Engineering project, slow progress in developing methane hydrates, and the relative lag in offshore aquaculture, areas which require attention and improvement.

Looking at future developments, Chen advocated for a focus on clean energy sources like methane hydrates, accelerating the establishment of a marine university, and enhancing emerging marine industries, especially in digital technology, artificial intelligence, and marine new energy and storage systems.

● "Four Integrations" and "Five Persistences"
Chen proposed that Shenzhen's development as a global ocean center city should involve "Four Integrations": synchronizing with the Guangdong-Hong Kong-Macao Greater Bay Area, integrating with the national marine center city cluster, aligning with the "Belt and Road" Maritime Silk Road initiative, and fitting into the global ocean center city assessment system.

He also recommended "Five Persistences": adhering to top-level design, focusing on industrial development as a key driver, coordinating sea and land development, complementing traditional and emerging industries, and timely adjusting industrial policies as scenarios change.

YU Ya, Senior Advisor of Global Ocean Capital Promotion Council of Shenzhen, Former Deputy Secretary of the Party Committee of CIMC Group, delved into the strategy and challenges faced by Shenzhen in developing as a marine center city. Taking into account the cyclical nature of the marine engineering industry, he noted the industry's transition from reliance on a single cycle of marine oil and gas to a coordinated

development of multiple cycles, including marine wind power, marine pastures, and carbon sequestration at sea. He highlighted the new demands and challenges this transition brings to the industry, especially in terms of innovation.

There are two primary challenges for Shenzhen in the field of marine engineering: first, continuous innovation in deep-sea and subterranean areas, including oil and gas equipment, underwater mining, maritime space stations, and energy island assembly; second, finding a "Chinese model" suitable for Chinese maritime conditions in new fields like marine wind power and marine pastures.

Yu Ya suggested that Shenzhen should use its situation as a latecomer city to focus on enhancing its system integration and innovation capabilities. He made three specific recommendations: firstly, to accelerate the establishment of marine test and verification centers and platforms; secondly, to cultivate leading enterprises in marine engineering equipment and marine engineering development; and thirdly, to try new methods in institutional innovation, such as bay area cooperation and the establishment of a seafood exchange. He believes these measures can help Shenzhen leverage its latecomer advantage in the marine engineering industry, particularly in providing core technological systems.

Claude Smadja, President, Smadja & Smadja Strategic Advisory Switzerland, Senior Adviser of Global Ocean Capital Promotion Council of Shenzhen, emphasized the critical role of technological innovation in Shenzhen's journey to becoming a global maritime center. As a hub of technological innovation in China, Shenzhen has the potential to become "China's Silicon Valley." Shenzhen needs to leverage its strengths in technological innovation, especially in specific areas that can propel the development of the maritime economy.

He also stressed the importance of developing the ecosystem for maritime startups, noting that while many startups focused on the blue economy have emerged in Shenzhen, this is just the beginning. More companies in this sector are needed to create a more robust ecosystem. In addition to emphasizing technological innovation, Shenzhen also needs to strengthen its capabilities in various fields like finance and insurance to achieve comprehensive development.

As importantly, Shenzhen needs to actively join the network of global maritime centers, collaborating with other cities to address common challenges. Shenzhen could consider organizing annual high-profile events, such as a mayors' meeting focused on the development of the maritime economy, to facilitate communication and cooperation between cities. By doing so, Shenzhen can accelerate its development into a maritime center city.

Expanding the Role of Ocean in Energy Transition

Speakers:

Peter M. Haugan, Professor, Institute of Marine Research, Norway
Jason HU, Senior Investment Officer, Invest in Denmark
Shane McArdle, CEO, Kongsberg Digital, Norway
Peter Thompson, Director and East Asia Energy Business Leader, Arup
PENG Wei, Director of National Ocean Technology Center

Moderator:
GUO Jian, Country Manager, Norwegian Energy Partners China

Shane McArdle, CEO of Kongsberg Digital, emphasized the crucial role of digital technologies in achieving low-carbon development in the maritime industry. Kongsberg helps these industries unlock potential and achieve decarbonization by providing digital software solutions for both the energy and new energy sectors.
Fully electric ships developed by Kongsberg not only reduce carbon emissions but also achieve full automation. Ongoing investments and technological innovation in renewable energy fields such as offshore wind energy are more necessary than ever, also leveraging digital technologies to optimize design and reduce costs. However, using traditional energy sources during the transition period will be needed.

PENG Wei, Director of National Ocean Technology Center, focused on China's development and goals in marine renewable energy. These goals involve accelerating the substitution of renewable energy while ensuring national energy security, and building a green, clean, safe, and efficient national energy system, serving the major tasks of achieving carbon peak and carbon neutrality. Peng Wei noted the rapid development of China's marine renewable energy, especially in offshore wind energy and photovoltaic hydrogen production.

There is no under-estimating the immense potential of marine energy, including tidal energy, tidal power, and temperature difference energy. Peng Wei highlighted the Chinese government's focus on developing these areas, noting China's rapid progression in marine energy that took the Western countries 50 years to achieve.

Peter M. Haugan, Professor, Institute of Marine Research, Norway, emphasized the ocean's crucial role in addressing climate change, pointing out that despite being impacted by fisheries and environmental issues, oceans also provide significant solutions for climate change. He emphasized blue carbon, blue food, and marine renewable energy as significant aids in climate change mitigation. Haugan mentioned the potential of ocean energy in achieving low-carbon development goals, particularly regarding the carbon reduction targets set for 2025 and 2050.

There is a wide-ranging process of diversification of marine economies, including offshore wind energy and marine agriculture, with an increasing competition for marine space and the critical need for scientific and stringent ocean management to ensure sustainable development.

Peter Thompson, Director and East Asia Energy Business Leader at Arup, stressed hydrogen's key role in energy transition. He shared Arup's experience in advancing energy strategies with governments in various countries, particularly in hydrogen production and the hydrogen economy. He pointed out to Shenzhen's potential in hydrogen energy development and electrification, mentioning Shenzhen's leading position in green hydrogen manufacturing and electrolysis technology, and emphasizing the importance of coordinated development between sea and land, and the possibility of using offshore wind energy to produce green hydrogen.

Jason HU, Senior Investment Officer at Invest in Denmark, emphasized Denmark's proactive role in offshore wind development and decarbonization and shared the role of POWER-TO-X technology and offshore wind in global energy transformation. He highlighted the significance of offshore wind in Denmark's energy structure. He discussed the Danish government's future plans in this area, in promoting renewable energy substitution, hydrogen technology, and carbon capture and storage, along with the construction of energy islands and the expansion of offshore wind farms to achieve over 20GW by 2040.

Fast Forward to Green Shipping and Logistics

Speakers:
Simon Bennett, Sustainability Advisor, Swire Shipping Limited, Singapore, General Manager, Sustainable Development, China Navigation Company
Christopher D. Chatterton, COO, Methanol Institute (MI), Singapore
Karim Fahssis, Head of Decarbonization, A.P. Moller - Maersk
LI Yanqing, Chair of ISO/TC8; Vice Chairman of ASEF; Secretary General, China Association of the National Shipbuilding Industry
REN Weimin, Director of Transport Division, UN Economic and Social Commission for Asia and the Pacific（ESCAP）

Moderator:
HAN Ning, Director of Drewry China

LI Yanqing, Secretary General of the China Association of the National Shipbuilding Industry, focused on the current status and development of the global shipbuilding industry, noting that the industry is maintaining a stable development trajectory. He expects this year's overall development to be similar to last year, indicating a healthy market for new shipbuilding. Li emphasized China's global leadership in shipbuilding,

mentioning that China has three major shipbuilding clusters: the Bohai Rim area, the Yangtze River Delta which accounts for two-thirds of China's total shipbuilding volume, the Pearl River Delta. The Yangtze River Delta cluster.

The maritime industry is facing two major challenges: green low-carbon initiatives and digitalization/smart technology. One is the issue of decarbonization, with the uncertainty regarding the path to achieving near-zero emissions by 2050., and the other are the uncertainties faced by the shipbuilding and shipping industries, including concerns over the availability, cost, and refueling infrastructure for alternative fuels. One crucial element is the role that innovative energy sources such as electric ships, fuel cells, and potential applications of nuclear energy will play in the future.

Karim Fahssis discussed Maersk's strategy and challenges in decarbonization, with a journey towards that goal which started in 2018 with the objective of achieving carbon neutrality by 2050. Maersk invested heavily in R&D to explore solutions through energy efficiency and new fuels. In 2021, Maersk decided to switch to green methanol as an alternative fuel for its advantages over other carbon-neutral fuels, such as its ease of transport under normal temperature and pressure conditions, higher energy density, and cost-effectiveness. The choice of green methanol is expected to help achieve the decarbonization goal ten years earlier, in 2040.

However, The biggest challenge about green methanol is the issue of supply, as current global production is far from sufficient to meet the needs. Maersk is collaborating with Goldwind, a leading company in China's wind power industry, which is expected to start supplying green methanol by 2026. With its abundant wind and solar resources and biomass waste, China has a great opportunity to become not only a major producer but also an exporter of competitively priced green methanol.

As Simon Bennett, Sustainability Advisor at Swire Shipping Ltd and General Manager, Sustainable Development, at the China Navigation Company, another challenge involved in the decarbonization of the industry relates to the difficulties in decarbonizing the bulk shipping and large vessels sector. Due to the uncertainty of the next port of call and the high costs of construction and retrofitting, securing the availability of green fuels like methanol or ammonia at every port is problematic. While there has been some progress, the requisite infrastructure is still not there.

While not underestimating the challenges involved, there is no stressing enough the importance of sustainable development in the shipping industry. Simon Bennett mentioned the efforts in designing more environment-friendly vessels and stressed the need for collaboration with all ports to ensure their infrastructure meets the requirements of green shipping.

In that respect, international cooperation is essential to ensure the decarbonization of the shipping sector, especially regarding the development of green infrastructure. For instance, large vessels departing from Europe may get into Asian ports not yet

equipped to provide methanol or ammonia. Thus, global infrastructure and cooperation are vital to achieving decarbonization goals.

Christopher D. Chatterton, Chief Operating Officer of the Methanol Institute (MI), highlighted the potential of methanol as a sustainable fuel in various industries, and as a universal product used in various applications, including other petrochemical fuels and derivatives such as methanol's applications in aviation as jet fuel. The potential of methanol as an efficient energy carrier with a high energy density makes it an advantageous fuel in terms of transportation and storage.

The global demand for methanol-related fuels is at about 100 billion tons, with China importing a significant portion of methanol-related products. Chatterton forecasted a significant increase in methanol production, projecting a fivefold increase by 2050.

The shipping industry has a very crucial role to play in achieving global sustainable development goals, especially in helping address the challenges in environmental protection and decarbonization. However, as Ren Weimin, Director of Transport Division, of the UN Economic and Social Commission for Asia and the Pacific (ESCAP), many regions are lagging in achieving these goals. This is particularly evident in the slow progress in marine sustainability (SDG14) and climate action (SDG13), with some areas even experiencing regression. As the industry faces major challenges in transitioning to sustainable practices, particularly in reducing fossil fuel consumption and greenhouse gas emissions, there is a need for all sectors, to accelerate their efforts to meet these challenges. In that respect, the new strategy for reducing greenhouse gas emissions from ships passed by the International Maritime Organization (IMO), is a crucial milestone towards green shipping transformation.

Ren Weimin underscored the uncertainties faced by the shipping industry in this transition, such as increased fuel costs and the need for new infrastructure. He argued that the transformation of the shipping industry needs to progress in tandem with the energy sector's transformation and emphasized the potential role of multilateral cooperation and the United Nations in facilitating this transformation in the shipping industry.

What a Sustainable Ocean Economy Means for Business

Speakers:
Jet CHANG, Vice President , Public Affairs Asia TOMRA Group, National Vice Chair of the Environmental Working Group of European Chamber of Commerce in the China (EUCCC)
DAI Minhan, Marine Chemist, Academician of the Chinese Academy of Sciences, Chair Professor of Xiamen University
Terry GAO, Commercial Director at Veson Nautical Asia, SSA Digital Transformation

Committee Member
Auvo Kaikkonen, Head of Representation to China and Mongolia, the European Investment Bank, and Minister Counsellor at Delegation of the European Union
David ZHAI, Director of Shenzhen Ocean Technology Marine Engineering (Shenzhen) Co., Ltd

Moderator:
MA Zhenmin, Editor-in-Chief of NewMedia, Harvard Business Review China; Initiator of New Growth Hub

There is no underestimating the importance of technological innovation and scientific understanding in promoting sustainable development and carbon neutrality in the marine economy. As DAI Minhan, Marine Chemist, member of the Chinese Academy of Sciences, Chair Professor of Xiamen University noted, the sustainable blue economy is not just an aspect of the marine economy, but a model that achieves economic growth, improves the quality of life, and protects the marine ecosystem while developing, utilizing, and conserving marine resources. The realization of this model heavily relies on the combination of scientific knowledge, technological revolution, sustainable governance, and blue finance.

Despite the increasing importance of the marine economy in the global economy, it currently faces several challenges, including the lack of sustainable development strategies, low levels of technological empowerment, the lack of management models based on marine ecosystems at the regional level, and incomplete supporting systems. The development strategy of the blue economy is not clear enough, and the integration of marine technology with industrial chains needs to be strengthened.

Professor Dai highlighted that carbon neutrality provides tremendous opportunities for the blue economy. The ocean can promote the transformation of the sustainable blue economy through low-carbon development, ecosystem protection and restoration, marine carbon removal, and renewable energy development.

Auvo Kaikkonen, Head of Representation to China and Mongolia of the European Investment Bank, and Minister Counsellor at Delegation of the European Union, (EIB) introduced the European Investment Bank as the world's largest multilateral development bank and emphasized its crucial role in ocean investment. The EIB, as a climate bank, recognizes the ocean's vital role in addressing climate goals and the fact that ocean investment is essential as oceans provide significant resources for economic growth, employment, and innovation.

Mr. Kaikkonen discussed the challenges oceans face, including pollution, overfishing, and the impacts of climate change such as ocean acidification and warming. He highlighted the need for protecting oceans to ensure they continue to provide resources sustainably, stressing the importance of addressing ocean pollution, unsustainable fishing practices, and warming. Over the past five years, the EIB has

invested seven billion USD, leveraging a total of 24 billion USD in benefits for the climate change goals. The bank focuses on sustainable aquaculture, standardized processes for sustainable finance, and collaboration with governments and other institutions to achieve greater impact.

One major development with respect to the positive impact on business of a sustainable marine economy, as identified by Jet CHANG, Vice President for Public Affairs Asia at the TOMRA Group, is the way the evolution towards a true global circular economy transformation can reduce marine plastic waste. He suggested that this transformation not only addresses environmental issues but also contributes to biodiversity conservation, reduction in natural resource consumption, and carbon emission reduction.

Jet Chang stressed the necessity of technological and systemic innovation for the transition to a circular economy. For instance, used mineral water bottles can be transformed into food-grade recycled granules, allowing for multiple cycles of use, thus reducing resource consumption and environmental pollution. Chang proposed specific measures such as extended producer responsibility, deposit schemes, and reusable or refillable packaging, to reduce the use of single-use plastics. He emphasized the role of these measures in promoting a circular economy.

David ZHAI, Director of Shenzhen Ocean Technology Marine Engineering (Shenzhen) Co., Ltd, focused also on leveraging technology and innovation to drive the development of the maritime economy. The company he founded 19 years ago, primarily focusing on development in automation and digitization, is using technology innovation to lead corporate growth. This approach has helped create an effective platform for ship maintenance and the construction of a global service network. This includes the use of advanced digital and networked tools, such as remote guidance and service technologies, especially during the pandemic.

Mr. Zhai offered three pieces of advice for local enterprises in Shenzhen: firstly, to utilize innovation without over-relying on complete smart technologies; secondly, to learn to integrate existing technology developments instead of starting from scratch; and lastly, to integrate into existing platforms as quickly as possible to increase efficiency.

Terry GAO, Commercial Director at Veson Nautical Asia, SSA followed up on the same line, focusing on utilizing software and technological innovation to achieve sustainable development and carbon neutrality in the shipping industry. He shared several instances of how software can be used to optimize shipping operations for enhanced carbon efficiency and compliance with the new standards of the International Maritime Organization (IMO). Software has also a tremendous potential to be leveraged in decision support, data collection and analysis, and the application of AI. These technologies can assist business managers in better evaluating the effectiveness of low carbon emission initiatives and adjust strategies accordingly.

Developing the Blue Food Business

Speakers:
Thórir Ibsen, Ambassador of Iceland to China with accreditation to Mongolia, Vietnam and Thailand
Rachelle Jensen, CEO, Luminis Water Technologies, Singapore
Shrikumar Suryanarayan, Chairman & Managing Director, Sea6 Energy, India
WANG Songlin, Founder and President, Qingdao Marine Conservation Society, Members of Friends of Ocean Action
YAN Xiaojun, Member of the International Eurasian Academy of Sciences and Secretary of the Party Committee of Zhejiang Ocean University

Moderator:
QIU Jiangqiu, Senior Media Specialist, Founder of Real Image Media, and Chinese Initiator of Sino-European Center for Sustainability Communication

The session discussions underscored the critical role of blue food in global health and sustainable development, while also pointing out challenges and opportunities in resource utilization, technological innovation, and market development.

WANG Songlin, Founder and President, Qingdao Marine Conservation Society, Members of Friends of Ocean Action, emphasized the significance of blue food in the global food supply, noting its annual production of 1.8 billion tons. Dominated by aquaculture, its growth rate surpasses other animal protein sources. Blue food plays today a critical role in meeting the increasing global population's needs. As a major producer and consumer of blue food globally, China contributes approximately to 36% of the world's blue food production. However, there is a significant cost associated with this capability, including the overfishing of fishery resources and unsustainable practices in aquaculture, such as using small fish as feed.

Various innovative strategies can support the sustainable development of blue food. These include improving feed research and development, and modernizing traditional fishery-agriculture compound systems, the cultivation and promotion of lower trophic level food-grade feeds.

Thórir Ibsen, Ambassador of Iceland to China, Mongolia, Vietnam and Thailand, also emphasized the importance of blue food as a rapidly growing source of animal protein. There are however pressing challenges to address such as the decline in fishery resources and environmental pollution and degradation due to the rapid growth of aquaculture. This is where scientific knowledge has to play a crucial role in helping to understand the interactions of resources and the capacity of the environment. Market mechanisms have also a role to play to incentivize the optimization of resources

utilization in order to improve the efficiency of fishing and aquaculture industries.

Ambassador Ibsen proposed several practical suggestions for the sustainable development of the blue food industry, including establishing reliable and predictable regulations, raising consumer awareness of healthy and sustainable food, and applying technology and rational resource management. He emphasized the importance of resource processing and fish waste utilization.

Rachelle Jensen, CEO of Luminis Water Technologies in Singapore, raised concerns about the challenges faced in the sustainable development of blue food, such as the pressure on food supply due to global population growth and the unsustainable use of marine resources. She highlighted the impact on food security and commercial supply chains of failing to achieve sustainable production in the food industry. Technology, such as the one developed by Luminis, effectively reduces the incidence of disease and mortality in aquaculture, improving farming efficiency and reducing environmental impact. Advanced technology in this domain has also the potential of reducing pathogen concentration and thus to increase the yield of aquatic products.

Sustainable development in the blue food industry can be achieved through a combination of innovation, technological development, and strict protective laws, thus involving the important roles of researchers, politicians, and businesses in addressing blue food's sustainability challenges.

Shrikumar Suryanarayan, Chairman & Managing Director, SEA6 ENERGY in India, emphasized the need to produce more food with less land, advocating for climate-adaptive agriculture. SEA6 ENERGY Initially aimed to use marine biomass to produce sustainable fuel, but researchers at the company discovered that the unique chemical composition of seaweed has a significant effect on boosting the productivity of terrestrial agriculture. Compounds in seaweed can act as bio stimulants to enhance plant growth and fertilizer utilization. So, seaweed does not only promote the healthy development of aquaculture but can also increase the yield of terrestrial agriculture. There are broader applications of marine agriculture, such as using seaweed to produce blue carbon resources as a sustainable alternative to crude oil, providing raw materials for various future products.

Yan Xiaojun, member of the International Eurasian Academy of Sciences and Secretary of the Party Committee of Zhejiang Ocean University, emphasized the potential of marine food in enhancing human health, intelligence, and lifespan, referring to it as "blue nutrition" which include special lipids, carotenoids, dietary fibers, prebiotics, high-end proteins, and peptides. For instance, omega-3 fatty acids EPA and DHA in deep-sea fish oil play a crucial role in human health, especially in cardiovascular health. Similarly, astaxanthin and fucoxanthin are unique compounds found in marine organisms, with significant effects on enhancing antioxidant capacity and promoting weight loss.

However, despite the significant health benefits of blue food, the industry faces challenges such as resource scarcity, high production costs, and delayed market development. Yan Xiaojun recommended forming an alliance between blue food and biomedicine, promoting industry development through resource-driven, structure-driven, and target-driven models.

Transformative Ocean Startups

Speakers:
Utkarsh Goel, Co-founder and CTO, Clearbot, Hong Kong
S**haun Hon**, Founder and General Partner, Motion Ventures, Singapore
Nikolas Pyrgiotis, VP of Technology Ventures, The Signal Group, Greece
QIU Bohua, Chairman and GM of Zhendui Industrial Intelligent Technology Co., Ltd.
WEN Jiangtao, IEEE Fellow, Former Professor at Tsinghua University

Moderator:
Claude Smadja, President, Smadja & Smadja Strategic Advisory Switzerland, Senior Adviser of Global Ocean Capital Promotion Council of Shenzhen

The session focused on the role that marine economy startups can play in accelerating the development and the technology enhancement of the marine economy and the challenges they face as transformative agents for this growing sector of the China's and global economy. On the other side, executives from VC funds focused on investing in the blue economy startups outlined what they are looking at in their process of investment decision-making, and why they are involved in a domain still considered as a high-risk one. They also provided their analysis on how the funding for blue economy startups is evolving, with more and more players interested in providing the necessary financing for the development of the blue economy startups ecosystem.

QIU Bohua, Chairman and GM of Zhendui Industrial Intelligent Technology Co., Ltd., outlined the challenges he faces as the founder of a marine technology innovation enterprise. This includes among other things getting support from investors and the government, cultivating talent inside the company. He believes that innovation in the maritime industry requires focus and perseverance, emphasizing long-term investment and effort.

Due to the vastness and complexity of the maritime field, understanding and support from investors and the government are particularly crucial. The maritime domain involves science, industry, and economic systems, making it a challenge to explain its importance and potential to investors and the government. Although China has many universities in the maritime field, there is still a lack of professional talent, especially

in regions south of the Yangtze River. This is a significant issue for enterprises in marine technology innovation, hence the need for greater focus on attracting and training talent.

The characteristics of the maritime field, such as multi-scenario, small-batch, and complexity, make the promotion of applications difficult. The conservatism of the industrial system and resistance to new technologies pose a significant challenge for maritime innovation enterprises in terms of promotion.

WEN Jiangtao, IEEE Fellow, followed up on the same line, pointing out that marine technology faces similar technical challenges and potential for innovation as space exploration, but lags behind in public attention and investment. Innovation and technological development in the marine sector require a long-term approach and substantial investment. Marine technology innovation enterprises need to clearly convey their value and importance to the public and potential investors. Thankfully, financing for the marine innovation sector is increasing. Large companies and investors are now showing a growing interest in the marine technology sector. More funds from other industry sectors are expected to enter this field in the coming years.

Wen Jiangtao stressed that entrepreneurs have a responsibility to clearly explain their work, objectives, and the importance of what they are trying to achieve to shareholders, potential clients, and the government. Marine technology enterprises need to effectively communicate their value to attract more attention and funding.

Shaun Hon, Founder and General Partner at Motion Ventures in§ Singapore, focused on the transformation and digitalization of the maritime industry, emphasizing the complexity within the industry and the importance of solving problems. He pointed out that compared to popular fields, the shipping and transportation industry faces more stakeholders and complex challenges.

The maritime transportation and shipping industry has numerous stakeholders, including cargo owners, ports, shipowners, etc., making it a complex task to identify specific problems and needs. Compared to other industries, the maritime sector faces greater challenges in conveying objectives and solving problems. This is one reason why global cooperation is so important in the maritime industry, especially in terms of innovative partnership relationships. While different stakeholders have varying goals and paces, effective collaboration can be promoted through finding common ground and incentive mechanisms. Shaun Hon stressed the importance of attracting high-quality talent to the maritime industry. More outstanding individuals can be attracted by clearly showcasing the potential of the industry to potential talent.

Nikolas Pyrgiotis, VP of Technology Ventures at The Signal Group in Greece stressed the importance of evaluating the resilience of teams and talents, in investment decisions. Conducting discussions with founders to understand if their companies

have the resilience to survive and thrive in the long-term in the complex shipping industry environment. A crucial factor is to assess the company's value proposition to ensure that the problems they are solving are truly relevant or even crucial for the industry. Is there a product-market fit? Is the product design neither too complex nor too commonplace?

Innovative partnerships are quite helpful in aiding the deployment of ship hardware and in gaining support from governments and institutions. Venture capital firms and governments have an indispensable role to play in this process, helping startups to expand and develop globally.

Utkarsh Goel, Co-founder & Chief Technology Officer of Clearbot in Hong Kong, pointed out that investment in electric ships and infrastructure dissemination is key to the future development of the shipbuilding industry. Specifically, investment in the electrification of ports is crucial to face the upcoming revolution in ship electrification. The future is definitely in the electrification of ships, which is driving the necessary innovation in the entire industry. Many positive developments are already happening In the maritime industry, and governments are pushing the industry towards a future with better technological support.

Blue Finance: Unlocking Investment for a Sustainable Ocean Economy

Speakers:
DAI Xin, Chief Economist China, Swiss Re Institute
Marisa Drew, Chief Sustainability Officer, Standard Chartered, United Kingdom
QI Kai, Director of ICBC Financial Leasing Ocean Economy Finance Department
ZHOU Hua, Partner at Beijing Dacheng Law Offices, LLP, Expert Consultant on Marine Industry Investment

Moderator:
WU Chen, Chief Editor of The Economist Global Business Review

There is a close connection between the marine industry and the financial sector, particularly in the context of blue finance and sustainable development. As the Chief Sustainability Officer at Standard Chartered Bank in the UK, Marisa Drew, insisted on the importance of the United Nations Sustainable Development Goals in the marine economy, particularly Goal 14, which define the objectives and actions required by 2025 to conserve and sustainably use the oceans, seas and marine resources.

She also discussed the role of banks in supporting maritime sustainability, by assessing investments based on the United Nations Sustainable Development Goals, especially in areas such as carbon monetization, biodiversity protection, adaptive finance, and

convergent finance. The common goal of these areas is to promote the sustainability of the marine environment and it can be achieved through innovative financial solutions. Supporting startups and technological innovation is crucial for the sustainable development of the maritime industry. Banks can do that by providing funding and building platforms, promoting their business models and technological development.

ZHOU Hua, Partner at Beijing Dacheng Law Offices, LLP, Expert Consultant on Marine Industry followed up on the connection between the marine industry and the financial sector, especially in the context of green and blue finance. Despite progress, there are still deficiencies in project supply, diversity of capital supply, information channels, and professional talent in China's blue finance sector. As China is striving to build a marine powerhouse and a financial powerhouse, blue finance has to be seen as an integral part of the financial powerhouse strategy. Enhancing education, fostering interdisciplinary talent, and establishing effective industry linkage mechanisms are part of the necessary actions to further promote the development of blue finance.

QI Kai, Director of Financial Leasing at the Ocean Economy Finance Department, of ICBC stressed the new strategy oh his bank to expand its leasing facilities beyond traditional shipping into the comprehensive marine economy sector, supporting the high-quality development of the national marine economy. He mentioned the company’s over 120 billion RMB in ship assets, covering more than 360 ships and marine equipment, serving over 70 clients in more than 20 countries and regions. ICBC Leasing's activities are focused on three business expansions in green development: low-carbon and zero-carbon shipping fuels, financing for clean energy transport ships (such as LNG ships), and financing for marine clean energy development. The bank is also expanding its role in the marine economy industry chain, including marine digital infrastructure construction, marine ranching, financial services for high-end ship equipment, and attention to the marine tourism sector.

The insurance industry is also expanding its role in the marine economy with the development of blue insurance, as DAI Xin, Chief Economist China, Swiss Re Institute, mentioned. There is a social function of the insurance sector in providing risk protection and risk transfer. The "Guiding Opinions on Promoting the Development of Blue Finance by the Banking and Insurance Industry" issued by the Shenzhen Banking and Insurance Regulatory Bureau, have for the first time introduced the concept of blue insurance, highlighting the importance that policymakers attach to the role of insurance in the development of the blue economy, especially in areas like natural disasters, liability, and health risks.

Ocean Governance, What Next?

Speakers:
Angela Ellard, Deputy Director-General, World Trade Organization
Ran Ruixue, Partner, Covington & Burling, USA
SU Jilan, Academician of the Chinese Academy of Sciences
WANG Yiwei, Jean Monnet Chair Professor, Director of the Institute of International Affairs and Director of the Center for EU Studies at Renmin University of China
ZHANG Haiwen, Director-General, China Institute for Marine Affairs (CIMA), Ministry of Natural Resources (MNR)

Moderator:
WU Chen, Chief Editor of The Economist Global Business Review

The discussions among the five speakers provided comprehensive insights into the current and future challenges of global ocean governance, proposing ideas and approaches for promoting sustainable global marine management.

The World Trade Organization (WTO) Fisheries Subsidy Agreement achieved in 2022 is a historic one with respect to global ocean governance as it is a significant step towards enhancing the sustainable management of fisheries and improving marine ecosystems by reducing subsidies for unreported and unregulated fishing. As Angela Paolini Ellard, Deputy Director-General of the World Trade Organization, pointed out about 20 million tons of fish catches per year come from discouraged fishing practices, illustrating the severity of the overfishing issue and the urgency in addressing it. Two-thirds of member countries need to ratify this agreement for it to take effect.

Angela Paolini Ellard emphasized China's leadership role in passing the agreement and encouraged other countries to expedite the ratification process. It is however crucial to continue the negotiations on subsidy rules that lead to overfishing in the next round of talks. Here again, China could play a leading role in helping to bridge differences between countries to achieve a mutually beneficial outcome.

Another very important aspect of global ocean governance is the issue of dispute resolution - including those between states, between states and private entities, and among private entities. These disputes may involve ecological pollution, ocean cross-border issues, and more, each requiring effective rules with corresponding dispute resolution mechanisms without which these rules would fail to be effectively enforced.

Ran Ruixue, Managing Partner of the Beijing office of Covington & Burling, USA, mentioned that disputes between nations could be resolved through institutions like the International Court of Justice or the International Tribunal for the Law of the Sea. Disputes among private parties are often addressed through maritime courts and maritime arbitration. She particularly emphasized the complexity of resolving disputes between private entities and states, which typically rely on administrative law and procedural law. She also referred to the Shenzhen Arbitration Court's attempts to

handle disputes between the government and individual investment entities, exploring the effectiveness of these mechanisms in practice.

China's actions under the global ocean governance framework have been increasing over the last few years. In that respect, ZHANG Haiwen, Director-General of the China Institute for Marine Affairs (CIMA) at the Ministry of Natural Resources proposed three main directions for developing this effort:

4) China should actively participate in the "United Nations Decade of Ocean Science for Sustainable Development" as part of the United Nations 2030 Agenda for Sustainable Development. The Chinese Ministry of Natural Resources has established a Committee to organize and promote work related to the United Nations Decade of Ocean Science. Beijing has also submitted several plans and projects, which have been adopted by the United Nations Decade of Ocean Science program, and encouraged Chinese government departments, scientific community, and business sector to propose more projects and plans.

5) The Agreement under the United Nations Convention on the Law of the Sea for the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction" (BBNJ Agreement) covers the high seas and the international seabed areas, setting many new systems and rules for the conservation and sustainable use of marine biodiversity. This marks a new era for global ocean governance and poses challenges in coordinating with existing rules. China should play a very active role in implementing this agreement and in adjusting existing rules and creating new ones to ensure the full effectiveness of the agreement.

6) China can make more contributions in the areas of green, low-carbon development, and international cooperation. China's position as the world leader in offshore wind power installation capacity gives the country the credibility for promoting actively the role of the oceans in the global energy transition. China's explorations in estimating the value of ocean carbon sinks, desalination utilization, and blue finance, can also be of great relevance for international cooperation and can contribute to strengthening international exchanges in these areas.

There is no underestimating also the importance of marine ecological environment governance, in the overall context of developing global ocean governance. In that respect, SU Jilan, member of the Chinese Academy of Sciences mentioned the Greater Bay Area, as a typical case of lack of governance of the marine ecological environment, as the area currently faces severe eutrophication, noting that the Pearl River Estuary has reached a critical point. This highlights the urgency and complexity of marine ecological environment governance.

Su Jilan recommended establishing a cross-provincial and cross-regional committee to coordinate the management of the marine ecological environment. Marine environment governance requires long-term and sustained efforts, and the Greater Bay Area should consider international examples, such as the coordination models used in the Baltic Sea and Chesapeake Bay, to achieve effective marine ecological environment governance.

Global ocean governance raises the question not only on how to govern but more importantly, for whom and why. WANG Yiwei, Director of the Institute of International Affairs and Director of the Center for EU Studies at Renmin University of China, suggested that the ultimate goal of ocean governance is to create a maritime community of shared destiny, involving the relationship between humans and the ocean, the role of the ocean, and the application of international maritime law. The ocean is not only the source of ecological systems but also a bond connecting continents, and a manifestation of the coexistence between humans and the ocean. Ocean governance should shift from a model dominated by industrial and commercial exploitation to one emphasizing ecological protection and sustainable development.

As a major developing country, China holds a special position in ocean governance. It should leverage its cultural and technological strengths in ocean governance to promote ecological civilization and the construction of a human community with a shared future, while also paying attention to the needs and challenges of developing countries in developing a full and efficient framework for global ocean governance.

Blue Carbon: Fighting Climate Change and Leveraging Business Opportunities

Speakers:
David M. Baker, Associate Professor, Area for Ecology & Biodiversity, School of Biological Sciences and The Swire Institute of Marine Science, Hong Kong
CHAI Qimin, Director for strategy and planning in National Center for Climate Change Strategy and International Cooperation (NCSC)
Sam LI, Associate Professor, Shenzhen International Graduate School, Tsinghua University
LV Honggang, Senior Engineer of National Marine Environmental Forecasting Center

Moderator:
Claude Smadja, President, Smadja & Smadja Strategic Advisory Switzerland, Senior Adviser of Global Ocean Capital Promotion Council of Shenzhen

The discussions during the session offered a comprehensive perspective on the importance, challenges, and potential for development in the field of blue carbon, showcasing the diverse and in-depth research in this area. The crucial importance and contribution of marine ecosystems and blue carbon as an effective tool to combat climate change is now quite well understood.

David M. Baker, Associate Professor, Area for Ecology & Biodiversity, School of Biological Sciences and The Swire Institute of Marine Science in Hong Kong, mentioned the rich maritime history of Shenzhen and Hong Kong but emphasized the severe damage caused to marine ecosystems by human activities, such as the deforestation of mangroves and the destruction of seagrass beds. He stressed the importance of protecting and restoring ecosystems like mangroves, seagrasses, and salt marshes for carbon capture and storage. In that respect, mobilizing investment through financial instruments like blue bonds and supporting scientific recovery projects are crucial.

The blue carbon storage technology which continues to be developed is a major tool in allowing the oceans to play their full role in fighting climate change. As Sam LI, Associate Professor at the Shenzhen International Graduate School, Tsinghua University, pointed out there are different effects and costs of ecosystem restoration and engineering methods in storing carbon dioxide, taking also in consideration some long-term risks.

The ecosystem restoration approach for blue carbon storage is a natural one, relying on the self-recovery and regeneration of ecosystems to capture and store carbon dioxide. In contrast, the engineering method for blue carbon storage involves using technological means to actively store carbon dioxide, but this approach currently faces high costs and technical challenges.

There is an urgent need for developing new technologies and industrializing existing ones to effectively implement blue carbon storage. If current technologies could be industrialized, they might form a profitable solution, which is crucial for sustainable blue carbon storage projects. However, storing large amounts of carbon dioxide in deep-sea environments necessitates considering some potential long-term risks, such as gas leakage and consequent geological disasters. These risks can be mitigated by using digital technologies and artificial intelligence tools, such as installing sensors, to monitor conditions and risks on the seabed, thus providing necessary safety measures for large-scale storage plans.

One key objective is to develop and implement strategies to enhance blue carbon development capabilities, especially from the perspective of market investors, exploring policy incentives and looking at market best practices. In that respect,

CHAI Qimin, Director for strategy and planning at the National Center for Climate Change Strategy and International Cooperation, (NCSC), highlighted the systematic

promotion of carbon peak - the stage of declining carbon emissions following a historical peak in CO_2 emissions during a certain period – and carbon neutrality (also known as “net zero carbon emissions”) policies implemented by the Chinese government, emphasizing the importance of blue carbon in several national policies and long-term development plans. In addition to the central government, many provinces such as Hainan and municipalities such as Shenzhen have formulated policies related to blue carbon and hydrogen.

It is now important to develop a national carbon emission trading market in China, particularly the voluntary emission reduction trading market, known as the "China Certified Emission Reduction (CCER)" market. Mangroves, as a significant marine blue carbon resource, will become an important part of the carbon emission rights trading market, with an expected annual reduction of at least 30 to 50 million tons entering the national carbon market. Chinese financial regulatory authorities have put in place support policies for green and blue finance such as the carbon reduction monetary support tool launched by the People's Bank of China, providing funding support for carbon reduction and blue carbon projects.

in his speech, discussed the progress and future plans of the Ministry of Natural Resources in the field of blue carbon. He detailed the concept of blue carbon and China's endeavors in this area. The core points of his speech are as follows:

The Ministry of Natural Resources has been working on the area of blue carbon since 2015 and LV Honggang, Senior Engineer at the National Marine Environmental Forecasting Center, stressed the vast potential for blue carbon development in China, noting that it is one of the few countries with all three major coastal blue carbon systems. Various policy supports have been set up by the Chinese government in the blue carbon area, including the overall plan for ecological civilization system reform and the blue carbon action plan proposed at the national ocean work conference.

Optimizing the very important role of blue carbon systems in biodiversity protection and coastal erosion mitigation in China as well as the global level requires addressing some significant challenges such as the need to perfect policy support systems, enhance scientific and technological support, establish a monitoring system, and deepen international cooperation. The future action plan proposed by the Ministry of Natural Resources covers among other things ocean carbon sink surveys, ecosystem protection and restoration, establishment of monitoring stations.
