MINISTRY OF SHIPPING YEAR END REVIEW, 2019

A. INLAND WATER TRANSPORT

Jal Marg Vikas Project

- i. The Hon'ble Prime Minister dedicated to the nation the Multimodal Terminal at Sahibganj (Jharkhand) on September 12, 2019 at Ranchi. The construction of the terminal has been completed in scheduled time under Jal Marg Vikas Project to augment the navigation capacity of National Waterway-1 (River Ganga).
- ii. It has been decided to assign Operation, Maintenance and Development of the Multimodal Terminal at Varanasi and Sahibganj to a private operator on PPP basis.
- iii. Under contracts awarded by the IWAI to private operators under JMVP, dredging operations are going on in three stretches of NW-1 to provide requisite least available depth.

IWAIs role in Ganga Sagar Mela and Kumbh Mela

iv. IWAI vessels MV Zakir Hussain, R. V. Rajagopalachari and V. V. Giri were deployed for transporting people and material during the Ganga Sagar Mela, 2019 (West Bengal). IWAI also participated in the Kumbh Mela, 2019 at Prayagraj (Uttar Pradesh) and provided two vessels to facilitate movement of pilgrims on the waterways. Further, five temporary IWT terminals were placed in the Kumbh Mela area to facilitate berthing of vessels/ boats etc. for embarkation and disembarkation of pilgrims.

Optimal utilization of IWAI vessels

v. To promote optimal utilization of vessels of the IWAI for movement of cargo on National Waterways, six cargo vessels of IWAI have been given on hire to the private shippers for a period of three years on bare boat charter basis through an open tender.

MoU between IWAI and Indian Oil Corporation Limited

vi. IWAI and Indian Oil Corporation Limited (IOCL) signed a Memorandum of Understanding (MoU) for jointly developing infrastructure for producing fuels, lubricating oil, Liquefied Petroleum Gas (LPG), Natural Gas and any other related fuel and gas for meeting the requirement of National Waterways. The MoU to provide an understanding over general modalities of mutual cooperation

leading to addressing futuristic demand of any form of energy for Inland Waterways and associated services. It also covers development of infrastructure for receipt, storage, dispensing and supply of fuels, lubricating oils, LPG (for domestic & commercial use), Natural Gas (NG) and any other related fuel and gas. The MoU will further lead to development of business activities along the National Waterways. IWAI and IOCL have also agreed to conduct technoeconomic feasibility studies for preparation of detailed land requirement, storage facilities and other supporting infrastructure with details of the cost. These studies will be based on the traffic potential, proximity to the local industries and waterways and its connectivity to rail heads.

International Cooperation -Bangladesh

- vii. Under the Protocol on Inland Water Transit and Trade since 1972 and the Coastal Shipping Agreement, 2015 between India and Bangladesh only cargo movement was permissible so far. To promote movement of passenger and cruise services on the inland waterways between the two countries, an MoU in April, 2017 and a Standard Operating Procedure (SOP) in October, 2018 were signed. As a follow up, Secretary, Shipping flagged off an inaugural cruise service between Kolkata and Dhaka on 29.03.2019. The cruise vessel "RV Bengal Ganga" of M/s. Heritage River Cruises Pvt. Ltd reached Dhaka on 06.04.2019. A similar cruise service was initiated by Bangladesh which commenced from Dhaka and reached Kolkata on 02.04.2019. Four cruise vessels have travelled between India and Bangladesh in 2019.
- viii. Bangladesh has allowed India use of its Chattogram and Mongla Ports for transit movement of our goods through waterways, rail, road or multi-modal transport in its territory for which an Standard Operating Procedure (SOP) was signed by the two countries on 5.10.19. The alternative connectivity is expected to boost development of the North East Region (NER) by increasing trade volumes and reducing logistic costs. Eight routes are provided under the Agreement which would enable access of NER via Bangladesh. The routes identified allow entry/exit to Agartala and Srimantpur in Tripura, Dawki in Meghalaya and Sutarkandi in Assam. Bangladesh agreed to furnish a proposal on the Administrative fee to be charged for Indian transit cargo, after discussions on the subject held by the two countries at Dhaka on 5.12.19.

International Cooperation- Nepal

ix. India and Nepal have agreed to include Inland Waterways connectivity as an additional mode of transport in the Treaty of Transit. Three routes for evacuation of cargo have also been agreed by both countries.

International Cooperation - Myanmar

Inland Waterways Authority of India (IWAI) is the Project Development Χ. Consultant (PDC) for the Kaladan Multimodal Transit Transport Project (KMTTP) being implemented by Ministry of External Affairs (MEA). The objective of the project is to provide an alternative connectivity to the North East Region from the Kolkata/Haldia port. Phase-I of KMTTP has been completed. MEA has decided to appoint an Operator for commercial utilization of Port & IWT facilities established under the project. IWAI in association with MEA organized a stakeholders' conference in Kolkata on 15.05.2019 in connection with the selection of а Port Operator for Phase-I of KMTTP. Private Operators/stakeholders in Myanmar and India along with Officers of Government of Myanmar, Myanmar Port Authority, MEA and Ministry of Shipping/IWAI attended the conference. During discussions, operators/ stakeholders in Myanmar and India evinced keen interest in bidding as O&M operator for KMTTP.

International Cooperation – Bhutan and Bangladesh

xi. An Indian waterway was used for transportation of cargo between two countries, using India for transit on 12.07.2019, for the first time ever. An Inland Waterways Authority of India (IWAI) vessel carrying 1000 ton cargo from Bhutan to Bangladesh over National Waterway-2 (Brahmaputra) and the Indo-Bangladesh Protocol Route was digitally flagged-off by Shri Mansukh Mandaviya, Hon'ble Minister of Shipping.

B. PORTS

Policy Guidelines for Land Management

i. Policy Guidelines for Land Management 2014 were issued to all Major Ports for implementation w.e.f. 2.1.2014. Later, some of the provisions of the Land Policy Guidelines, 2014 were further clarified to ease the implementation of the Policy Guidelines by the Major Ports on 17th July, 2015. Many Major Ports had, however, raised various difficulties in implementing some of the provisions of PGLM, 2015 and requested for further clarifications on the same. To accommodate the various difficulties arising with regard to implementation of the guidelines so as to meet the practical exigencies & requirements in public interest, clarifications on these were issued by the Ministry from time to time and all the clarifications issued have been compiled and have been issued afresh on 29.4.2019. The then Hon'ble Minister of Road Transport & Highways, Shipping & Water Resources, River Development and Ganga Rejuvenation, Govt. of India

inaugurated Paradip Port's Multipurpose Berth to handle Clean Cargo including Containers of 5 MTPA Capacity on 06.02.2019.

Maritime State Development Council (MSDC)

ii. The 17th Meeting of Maritime State Development Council (MSDC) was held on 15.10.2019 at New Delhi under the chairmanship of Hon'ble Minister of State for Shipping (Independent Charge) with Ministers and officials from various Maritime States and Government of India. The meeting agreed that there is a need for a closer and active interaction between the Central Govt. and the Maritime States/UTs for augmenting the infrastructure development and safety & security of the ports as ports play a vital role in EXIM Trade.

Ease of Doing Business - Improved ranking under the Trading Across Border (TAB)

iii. India improved its ranking under the Trading Across Border (TAB) parameter of Ease of Doing business (EoDB) from 80 to 68. This impressive record has been facilitated due to various measures like Direct Port Delivery (DPD), Direct Port Entry (DPE), Introduction of RFID, Installation of scanners/container scanners, Simplification of procedures etc., taken by the major ports.

Upgraded Port Community System (PCS)

iv. An upgraded Port Community System (PCS) (PCS 1x version) has been introduced for all ports. The system enables seamless data flow between the various stakeholders through common interface. To move towards complete paperless regime, E-DO (Electronic Delivery Order) through PCS made mandatory along with e-invoicing and e-payment.

Strategic disinvestment in Dredging Corporation of India

v. The Government has accorded approval for Strategic disinvestment of 100% GOI shares in Dredging Corporation of India Ltd. (DCIL) in favour of a consortium of four Major Port Trusts viz. Visakhapatnam, Paradip, Jawaharlal Nehru and Deendayal. The share purchase agreement was executed between the GOI and the four ports on 8.3.2019 and in the process the entire 73.47% holding of GOI in DCIL has been transferred to the four ports. The Government has mobilized a total amount of Rs. 1049 Cr. through this strategic sale. With this transfer of shares, the management and control of the company has also been transferred to the four Ports. The entire process will provide the company more operational and financial freedom in decision making and in taking up and executing more works in an efficient manner.

Floating Storage Re-gasification Unit (FSRU)

vi. To meet the infrastructure requirement for LNG imports, Floating Storage Regasification Unit (FSRU) within Port limits offer a low cost, fast track and flexible option, as compared to traditional onshore terminals. Guidelines for establishing FSRU at Major Ports have been issued by the Ministry of Shipping on 7.3.2019. Under the guidelines, the entire investment of the gasification and storage units including pipeline shall be made by the entity setting up the FSRU. The FSRU projects are to be taken up on license basis upto 30 years under the provisions of the Guidelines on Land Management at Major Ports. The water area, land area and other facility/permission such as right of way for pipelines shall be provided by the Port at applicable charges.

Super Specialty Hospital at Paradip Port

vii. On 17.06.2019 it has been decided to establish a 400 bedded Super Specialty Hospital at Paradip Port at an estimated cost of Rs.200 crore with an option to further develop a Medical College and expand the hospital on PPP basis.

India Nepal Logistics Summit

viii. KoPT was the Host partner for India Nepal Logistics Summit held at Kathmandu, Nepal on 28.07.2019, which was inaugurated by Hon'ble Prime Minister of Nepal. On the sidelines of the Summit, KoPT held discussions with various stakeholders such as Govt. Officials, Importers and other Business chambers. The Summit and the interactions were attended by Special Secretary (Logistics), Jt. Secretary (Logistics), Gol, Chairman and Dy. Chairman, KoPT. Meeting was held with importers from Nepal to understand the issues related to cargo movement.

Inauguration of two multipurpose berths at Deendayal Port, Kandla

ix. Two multipurpose berths, No.14 & No.16 at Deendayal Port, Kandla were inaugurated by the then Union Minister for Shipping on 8.3.2019. The optimal capacity of each berth is 4.50 MMTPA with a draught of 13.0 M and designed for vessels of size upto 75000 DWT. The development of back up area of 21.0 ha. at each berth is part of the project. The new berths would help in reducing the congestion in the port. These berths constructed at a cost of Rs 280 Crore and completed in 22 months i.e. two months prior to the scheduled completion time.

Inauguration of RFID Operation and CCTV Operations at Kolkata Dock System

x. Hon'ble Union Minister of Shipping (Independent Charge) inaugurated the RFID Operation at KDS, CCTV Operations at Kolkata Dock System (KDS) and

Rabindra Setu and three Truck Parking Terminals at KDS. The RFID system will provide single window system to the port users for obtaining permit/ passes through cashless transactions.

One Time Settlement Scheme (OTSS) for settlement of major ports of dues with Government of India/ State Government Ministries/Departments

xi. A large extent of Land belonging to Major Ports is under lease with Departments of GoI and State Governments on which interest and Penal interest have been levied in cases of unpaid lease rentals. These interests and penal interests over a period of time have increased quite substantially which is coming in the way of settlement of lease rent. In order to facilitate and expedite the recovery of these huge pending dues of Major Ports, Ministry of Shipping has issued "One Time Settlement Scheme (OTSS)" for settlement of dues with Government of India/ State Government Ministries/Departments on 13th August, 2019.

Cruise operations at Mumbai Port

- xii. Two majestic cruise liners, Karnika& Costa Victoria, home ported together at Mumbai harbour on 9-11-2019. This development is on the lines of cruise operations at Miami and Singapore. In a historic move, the Mumbai Port extended its capacity to berth two longer cruise ships at its twin berths of BPS and BPX enabling Costa Victoria (829 feet) and Karnika (805 feet). Costa Victoria operated by Carnival Maritime, has a total passenger capacity of 2400, along with crew capacity 800, arrived from Goa at Mumbai Port on 8.11.2019 and sailed to Maldives via New Mangalore, Kochi, Colombo and Goa on 10.11.2019. Karnika operated by Jalesh Cruises, has a total passenger capacity of 1700, along with crew capacity of 720, arrived from Muscat at Mumbai Port on 9th November 2019 and sailed to High Seas the same day. Karnika is a premium luxury cruise ship with exclusive decor and cuisine to attract not only the vast majority of the Indian travellers but also the discerning foreign tourists.
- xiii. Mumbai Port had four cruise ships docked on the same day on 18.11.2019, a momentous occasion in its history. 'Mein Schiff 6' coming from Muscat, having 2500 passengers on board arrived at 5.00 a.m. 'Karnika' having 800 passengers arriving from Goa berthed at 6.00 a.m. 'Silver Spirit' arriving from Muscat with 570 passengers docked at 8.00 a.m and 'Angriya' arriving from Goa with 124 passengers docked at 07.00 a.m. With about 1700 passengers booked for departure on 'Karnika', 136 passengers booked for departure on 'Angriya' and 500 passengers on 'Silver Spirit', there were in all more than 6000 passengers transiting through Mumbai Port.

BIMSTEC Conclave of Ports

- xiv. The BIMSTEC region brings together 167 billion which is 22% of world population and a combined GDP of US \$3.71 Trillion. Providing Connectivity is one of the key priorities among BIMSTEC countries. The first ever BIMSTEC Conclave of Ports, was inaugurated by Shri Mansukh Mandaviya Minister of State for Shipping(I/C), at Vishakhapatnam on 7-8 November, 2019. The conclave provided a platform to strengthen maritime interaction, port-led connectivity initiatives and sharing best practices among member countries.
- xv. Three Memorandums of Understanding (MoUs) were signed between Ranong Port (Port Authority of Thailand) and the Port Trusts of Chennai, Vishakhapatnam and Kolkata during the Conclave today. These MoUs will contribute to BIMSTEC objectives of strengthening connectivity and is part of India's Act East Policy. These MoUs will enhance connectivity between ports on Thailand's West Coast and Ports on India's East Coast i.e. Chennai, Vishakhapatnam and Kolkata. These MoUs will enhance economic partnership by cutting down the sea travel time between India and Thailand from 10- 15 days to 7 days.

C. SHIPPING

Ship Recycling

- i. The ship recycling industry is at present regulated under the Shipbreaking Code (Revised), 2013. The Code lays down comprehensive procedures and requirements for the entire process of ship recycling, to ensure safe and environmentally sound ship recycling and proper disposal of hazardous bye products of ship recycling.
- ii. To give boost to the ship recycling industry in India, the Government has acceded to the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (HKC) on 28.11.2019. Simultaneously, the Recycling of Ships Bill, 2019 has been passed by Lok Sabha on 03.12.2019 and Rajya Sabha on 09.12.2019. It is now awaiting assent of the President. The Bill provides a legislative framework for implementation of the provisions of the Hong Kong Convention. It also contains provisions of the Convention which are not covered in the Shipbreaking Code (Revised), 2013.
- iii. With the enactment of Recycling of ships Bill, 2019 and acceding to the Hong Kong Convention, the country stands to become a prime destination for green ship recycling and the ship recycling volume in the country is expected to double

by 2024, with corresponding increase in the number of persons employed directly and indirectly in ship recycling industry.

Shipbuilding subsidy - Earlier claims

iv. A proposal regarding settlement of long pending subsidy claims for executed shipbuilding contracts under the shipbuilding subsidy scheme, 2002-2007 has been approved on October 9, 2019. This would involve release of committed liability of shipbuilding subsidy through budgetary support of approx. Rs.153 crore for a total number of 51 vessels, including retained subsidy for 47 vessels and full subsidy for 4 vessels. Guidelines for release of the subsidy are being formulated by this Ministry.

Shipbuilding subsidy scheme

v. Under the current financial assistance scheme on shipbuilding (2016-2026), financial assistance of Rs. 39.7 crore for seventeen vessels has been released to four Indian shipyards. Further amended and consolidated guidelines have been issued in February 2019 to facilitate Indian shipyards to be more competitive internationally and to boost building of river water dredgers of 10 m and above. Guidelines have been uploaded on the website of this Ministry.

Grant of Right of First Refusal to Indian shipyards-Guidelines revision

vi. Ministry of Shipping has amended the guidelines regarding Grant of Right of First Refusal to Indian shipyards by Government departments or agencies for procurement of vessels by them for own use or Government use. Eligibility criteria have been relaxed by Government for Indian shipyards to qualify for ROFR. Technical qualification of Indian shipyards will be based on the relaxed norms for infrastructure availability and capability of the shipyards to execute the shipbuilding contracts Amended guidelines have been issued in February 2019 and the same have been uploaded on the website of Ministry of Shipping.

Promotion of Cruise Tourism

vii. Ministry of Shipping has been taking steps for promotion of international and domestic cruise tourism in the country. The arrival of the first premium luxury cruise liner 'KARNIKA' on 13.04.2019 operated by Jalesh Cruises has added another chapter in domestic cruise tourism in India. "KARNIKA" is a 14-deck, 245-meter long passenger ship built in Italy. It can accommodate 2000 Passengers at a time and will have 725 crew members including hospitality and marine crew. "KARNIA" home ported in Mumbai from 17.04.2019 offering for the first time opportunity to Indians to experience cruise tourism between Mumbai –

Goa, Mumbai – Ganpatipule (Jaigad), Mumbai – Diu, Mumbai – Gulf routes. It is expected to do about 100 voyages in this year having completed 45 voyages from its homeport Mumbai, upto 30th November, 2019.

Cochin Shipyard Limited-New contracts

viii. On March 01, 2019, CSL signed contracts for 4 Nos. 8000 T Mini Bulk Carriers with M/s. Utkarsh Advisory Services Private Limited (Part of JSW group) for their Indian Coastal Operations. On March 08, 2019, CSL received the formal 'Letter of Intent' for nine (9) nos. Floating Border Outpost Vessels from Ministry of Home Affairs (MHA), which was accepted by CSL on March 22, 2019. The Company has also signed a contract with the Ministry of Defence on 30 April 2019 for construction and supply of eight Anti-Submarine Warfare Shallow Water Crafts (ASWSWCs) for the Indian Navy at a contracted price of Rs. 6,311.32 crore. On October 29, 2019, CSL signed contract with Kochi Metro Rail Limited for design and construction of 23 Nos. of Hybrid-Electric Passenger Ferries for the Kochi Water Metro Project. Apart from the above the company also executed the Phase III contract for the Indigenous Aircraft Carrier for the Indian Navy with the Ministry of Defence on October 31, 2019.

Cochin Shipyard Limited- Financial performance

ix. Cochin Shipyard Limited (CSL)) posted yet another year (FY 2018-19) of excellent financial performance with a turnover of Rs. 2962 crore, an increase of 25.7%, and a PAT of Rs. 481 crore, an increase of 21.2% over the previous year. In 2018-19 it achieved around 23% increase in shipbuilding turnover. For the half year ended 30 Sep 2019, the company posted a turnover of Rs 1706.64 crore as against the previous year's achievement for the same period amounting to Rs 1458.13 crore, registering an increase of 17%. The profit Before Tax for the half year ended 30 Sep 2019 was 449.04 crore, which was 14% more than the profit before tax for the half year ended 30 Sep 2018 of Rs 393.49 crore. Likewise Profit After Tax increased from Rs 253.95 crore for the half year 2018 to Rs 327.83 crore for the half year 2019 thus registering an increase of 29%. The company had a healthy order book position as on 30 Sep 2019.

Cochin Shipyard Limited- Major projects progress

x. The two main infrastructure projects of Cochin Shipyard viz. the new Dry dock of 310 M and the new International Shiprepair facility (ISRF) at the land leased from Cochin Port Trust are progressing well. As on 30 Sep 2019, a total amount of Rs 366.29 crore was spent on the new dry dock and an amount of Rs 333.13 crore was spent on ISRF, as against the estimated cost of Rs 1799 crore for the Dry dock and Rs 970 crore for ISRF.

Directorate General of Shipping

Increase in no. of seafarers

xi. The number of seafarers increased from 1,54,349 in 2017 to 2,08,799 in 2018 and to 2,31,776 in 2019. India has seen an unprecedented growth of Indian seafarers employed on-board Indian and foreign flagged vessels, as a result of cumulative impact of decisions of the Government to improve the quality of Maritime Training, increase in the training capacity, increase in the number of training berths, standardisation of course curriculum and course material, improvement in examination system and above all by ease of doing business brought through simplified processes and with e-governance modules in the year 2019.

Biometric Seafarers Identity Document (BSID)

xii. India has become the first country in the world to issue Biometric Seafarers Identity Document (BSID) capturing the facial biometric data of seafarers. The new document will give a foolproof identification to our seafarers which will facilitate their movement across countries, providing ease of getting jobs and also helping in identification at any location in the world.

International Maritime Organization (IMO)

xiii. The Assembly of the International Maritime Organization (IMO) has elected the new 40-member IMO Council for the biennium 2020-21 that will be responsible, under the Assembly, for supervising the work of the international organization. In the election held at IMO, London on 29 November, 2019, India was re-elected to the IMO Council under Category "B" - States with the largest interest in international seaborne trade.

International Convention/Cooperation

- xiv. Denmark is one of the important trading partners with India. In order to boost the bilateral trade between the two countries and to ensure cooperation and coordination in the maritime sector, the Union Cabinet approved the Memorandum of Understanding (MoU) on Maritime issues between India and Denmark. The MoU was signed on 18th January, 2019.
- xv. MoU signed between India and Maldives for the establishment of passenger and cargo services by sea, on June 8, 2019. This MoU will pave the way for ferry services between Maldives & Kerala. It also opens the way for connecting Kochi and other Indian ports with Male and other ports in Maldives by sea route.

- xvi. India, one of the world's five major ship recycling countries, has acceded to IMO's Hong Kong International Convention for Safe and Environmentally Sound Recycling of Ships on 28th November, 2019.
- xvii. An agreement has been signed with Sweden for mutual recognition of the certificates of seafarers on 02.12.2019. This will enable the employment of Indian seafarers' on-board Swedish flag ships.

D. SAGARMALA

Central Inland & Coastal Maritime Technology (CICMT) at IIT Kharagpur

i. The Hon'ble Minister of Shipping laid the foundation stone for the Central Inland & Coastal Maritime Technology (CICMT) at IIT Kharagpur on 8.3.2019. The cost of the project is Rs. 69.20 cr. (Capex - Rs. 61.05 cr. and Opex - Rs. 8.15 cr.). The funding for CICMT is for 5 years only and once the facility is functional, revenues generated from the end users will make it sustainable. The establishment of CICMT signifies a major leap in indigenous innovation and cutting-edge technology support to the Port and Maritime sector directly contributing to the Sagarmala programme and support 'Make in India' and is based on close collaboration amongst government, academic institutions and industry to make applied research relevant to day to day ground work in the port and maritime sector. An MoU was also signed with the Germany for technology collaboration for the centre during the state visit of German Chancellor.

Multi Skill Development Centre (MSDC) in Maritime Logistics at JNPT

ii. Under the Pradhan Mantri Kaushal Kendra (PMKK) programme of Ministry of Skill Development and Entrepreneurship, the Hon'ble Minister of Shipping inaugurated a Multi Skill Development Centre (MSDC) in Maritime Logistics at Jawaharlal Nehru Port Trust on 8.3.2019. The MSDC will provide skill development in Maritime Logistics to over 1050 students per year in the Port and Maritime sector.

National Maritime Heritage Complex at Lothal

iii. Ministry of Shipping has approved setting up of a National Maritime Heritage Complex at Lothal with total cost of Rs 478.9 Cr, the first of its kind world class complex in the country to showcase India's rich Maritime Heritage dating back from Harappan times.

Sagarmala DeenDayalUpadhyayaGrameen Kaushal Yojana

vi. Phase 2 of Sagarmala DeenDayalUpadhyayaGrameen Kaushal Yojana (DDUGKY) for convergence for skill development in Port and Maritime Sector has been launched in Gujarat, Maharashtra, Kerala, Andhra Pradesh and Tamil Nadu. Dedicated training centers have been inaugurated in Kerala, Andhra Pradesh and Tamil Nadu and workshop with potential employers and prospecting partners have been held in each of these states.

Multi-skill Development Centres (MSDC) at all major ports

v. Multi-skill Development Centres (MSDC) are being setup at all major ports. MSDCs linked to Jawaharlal Nehru Port and Chennai Port are operational.

Coastal Shipping

vi. Promotion of Coastal Shipping is top most priority of the Ministry of Shipping under Sagarmala and ministry has undertaken several initiatives to promote coastal shipping in the country. In order to continue this pace and seek further growth of coastal trade, a perspective plan upto 2025 on development of coastal shipping in India has been prepared by Asian Development Bank. The plan takes a holistic view of the coastal shipping sector discerning its potential and challenges and addresses them with necessary infrastructure, regulatory and commercial intervention.
