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ROYAL GOVERNMENT OF BHUTAN
MINISTRY OF INFRASTRUCTURE AND TRANSPORT

གཞིས་ཆགས་ལས་ཁུངས་།

DEPARTMENT OF HUMAN SETTLEMENT
THIMPHU: BHUTAN



Minutes of Meeting

Investor Day of Bhutan Green Transport Project (BGTP)

Date: June 26th, 2024
Time: 04:00 PM - 06:30 PM
Venue: DHS Conference Hall

A copy of the presentations are attached with the minutes.

The purpose of the Investor Day was to familiarize potential international and national investors, suppliers and contractors with the project, to provide contact points with potential Bhutanese partners or subcontractors, and to explore the most cost-effective ways of dividing the procurement packages and allocating the project risks. The event was organized into following sessions:

1. General Session
2. Bus Priority Lane and Norzin Lam Pedestrianisation
3. Intelligent Transport System (ITS) and Management Information System (MIS)
4. E-Bus and Charging Infrastructure Procurement

There were opportunities for participants to ask questions at the end of the opening plenary session, and the three specialized sessions.

Opening Remarks

Honorable Dasho Secretary of Ministry of Infrastructure and Transport (MoIT) delivered the opening remarks, welcoming the participants and addressing the critical challenges in the transport sector, particularly the rise in private motor vehicle usage, which contributes to traffic congestion and climate change. Dasho emphasized the need to shift the focus from private vehicles to sustainable green urban mobility. The Bhutan Green Transport Project (BGTP) is pivotal in this shift, concentrating on bus priority for Thimphu and the pedestrianization of Norzin Lam. Additionally, the MoIT has prepared the Low Emissions Transport Master Plan (LETMP) for Thimphu, both of which are prioritized in the 13th Five Year Plan (FYP).

Session 1:

Presentation on the Transportation System in Bhutan and Thimphu

The Director of the Department of Human Settlements (DHS) presented an overview of the transportation system in Bhutan and Thimphu, setting the context for the BGTP and LETMP. The presentation highlighted current policies such as the Bhutan Transport 2040 Integrated Strategic Vision, Low Emissions Development Strategy 2021, National Adaptation Plan of



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Bhutan 2023 etc. Detailed strategies on non-motorized transportation and public transport were explained, along with the bus priority scheme and pedestrianization of Norzin Lam.

Introductory Video from World Bank

Ms. Shruti Vijayakumar, the Technical Team Leader (TLL) of the World Bank's transport team, has been overseeing the technical preparations for the BGTP and the LETMP. She highlighted Bhutan's challenges, stressing that the BGTP is not merely an infrastructural initiative but also a critical effort to promote social inclusion and ensure environmental sustainability.

BGTP Film

The film offered a detailed context for the BGTP, emphasizing the project's importance in alleviating traffic congestion and enhancing mobility for Thimphu's residents.

Q&A Session

- Participants raised concerns regarding the pedestrianization of Norzin Lam, particularly the potential loss of the main traffic police hut (policeman in full dress uniform directing traffic manually from the island), a notable landmark in Bhutan. Its potential relocation was suggested. It was clarified that the pedestrianization of Norzin Lam will not involve pedestrianizing the entire stretch but will instead phase the developments by providing more space for pedestrians, increasing the width of the footpaths, and reducing the vehicle carriageway.
- The need for additional overhead crossings was also highlighted, along with the provision of buses to peripheral areas and facilities for car and cycle parks for first- and last-mile trips. The Director of DHS mentioned that while the BGTP project scope includes only the trunk route from Dangrina to Ngabiphu, the LETMP extends beyond the Thromde with proposed public transport interventions. It was clarified that in addition to the BGTP budget, the government, through MoIT, has allocated approximately Nu. 3 billion for implementing the LETMP, addressing the issues the President of Construction Association of Bhutan (CAB) raised.
- Question was also raised regarding the standard of the fuel imported. It was believed that if fuel imports met the new EU standards then air pollution would be greatly reduced in the city.



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Session 2: Procurement of Bus Priority Scheme (BPS) and Norzin Lam Pedestrianisation

Mr. Stephen Ragget of Pegasys presented the main components of BPS which include priority lane, widening of single carriage section and two bridges, improvement of Dechencholing to Dangrina section, installation of bus bays and bus stops, cable ducting and lighting, enhanced drainage, pedestrian crossings, road markings and signage. He also highlighted that separating the Norzin Lam contract from the larger BPS procurement was designed to allow small and medium-sized local contractors to develop the expertise to be able to compete for further NMT improvements and other projects emerging from the implementation of the LETMP. It was explained that the design of both schemes will be reviewed to include measures to enhance the resilience of Thimphu's infrastructure identified in the recently published National Adaptation Plan. The Projects will use the World Bank procurement standards implemented through PIU in Thimphu Thromde.

Q&A Session

- There were questions regarding policies related to the operation of the city bus service and its impact on taxi drivers. Additionally, a query was raised about outsourcing the construction and maintenance of charging facilities to the private sector. The Department mentioned that the City Bus Service (CBS), currently managed by Thimphu Thromde, may soon be granted State-Owned Enterprise status, with the vision of overseeing public transport throughout the country.
- A participant inquired whether new standards would be developed through the LETMP. The Department clarified that the LETMP includes recommendations for Bhutan to develop standards for NMT), including cycle ways. Participants also asked about provisions within the BGTP for future infrastructure expansion and the integration of utilities such as telecom and power within the current scope of work. Mr. Stephen mentioned that Component 3 focuses on implementing the LETMP and advancing further projects for financing under BGTP, which will be discussed in the future.
- Furthermore, the Director of DHS emphasized the Ministry's commitment to establishing high standards in infrastructure planning, design, and implementation. The LETMP and BGTP provide a platform for maintaining these high standards, ensuring that infrastructure is of high quality, sustainable, and resilient. Additionally, there are provisions for future expansion that will accommodate and integrate utilities such as telecom, power, and wastewater management.
- Concerns were raised about the procurement method, questioning whether the project would follow the World Bank procurement system, potentially leading to contracts being awarded to international companies. Participants asked if these companies would bring in external manpower, equipment, and technical experts, and why the project could not be outsourced using the Bhutanese tendering method. Mr. Stephen explained



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that the project must use an international procurement method due to its funding from international organizations. However, the Department assured that the Ministry, along with development partners, would discuss contracting modalities. They would negotiate to outsource components of the project to local contractors, where feasible, without requiring another bidding process.

- Participants inquired whether there are provisions for integrating commercial activities within the transport system, allowing people to shop at bus stops without needing to go to the city center. The Department responded that one of the strategies under the LETMP is transit-oriented development (TOD), which comprehensively addresses land use allocation for different centers. This approach is a major proposal in the Thimphu Structure Plan (TSP). For example, the Bus Priority Lane will connect various economic activities, including commercial areas, offices, residential zones, and other uses, along the route from Dangrina to Ngabiphu.

Session 3: Procurement of Intelligent Transport and Management Information Systems

Director Pasang Tshering gave a summary of the history of City Bus Service, its routes and finances, and demonstrated how the need for an RGoB operational subsidy has been declining in recent years as ridership has grown. He also demonstrated the benefits of the experience gained by the trials of a section of bus priority lane in terms of journey times and of the benefits of deploying an e-bus in terms of fuel cost savings. He explained that all buses now had a smartcard reader and were able to scan Bhutanese bank smartphone apps. The planned purchase of a new server will allow greater functionality for the control room and further improve the management of the bus services. Mr. Stephen Raggett, Pegasys, supplemented the presentation that the ITS has always been part of the BGTP and that it would help achieve the vision and strategies of the plan.

Q&A

- There were inquiries about the need for charging points at existing bus shelters and the necessity for overhead crossings, considering the anticipated increase in the number of buses in the future. It was clarified that the project's implementation would involve various components to enhance bus accessibility and city bus service usability. However, installing charging points at every bus shelter would depend on the reliability of the bus services. The need for overhead crossings or underpasses will be addressed as necessary in consultation with the Thromde.
- Regarding the payment system, it was asked if there are alternatives to the smart card system. It was clarified that CBS is currently in discussions with banks to develop a system that allows citizens to recharge their smart cards online through their banking



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applications. This initiative aims to resolve the difficulty of linking the APIs of the banking systems and the smart card system.

- An online participant asked whether the new e-buses would be integrated into the existing fare and scanning system. Pegasys replied that it was important for the bus fleet to use common interfaces for payment but it would be up to the ITS supplier to determine the best way of meeting the functional specification that will be provided in the procurement documents.
- A second online question was regarding whether a closed-loop fare system was currently in place. Pegasys replied that bidders will be provided with a full technical specification of the existing system in the bidding documents and will also be able to view the existing system at a bidders' conference at the beginning of the bid period, the date for which will be given in the procurement documents. They will also be able to seek further technical clarification during the bidding process.
- A third question related to the need for a depot management system and vehicle planning and scheduling. Pegasys replied that a full Fleet Management System will be required and a full description of the technical requirements will be included in the bidding documents.

Session 4: Procurement of E-buses

Director, CBS and Mr. Stephen Raggett, Pegasys briefed the forum with regard to the procurement of E-buses as stipulated in the project. It was shared that the procurement of the buses will also include the provision of spare parts, battery replacements, chargers, initial training of drivers and mechanics, and possibly an extended warranty period. The project will also include a study of the potential for using Vehicle to Grid (V2G) technologies for using buses as emergency back-up to the electricity grid as a climate resilience measure. BGTP is a demonstration project for other urban areas in Bhutan and further technical assistance will include a study for accelerating procurement of e-buses for the inter-urban bus market. CBS expects to be running an all-electric bus fleet of around 120 buses in Thimphu by 2037. However, it was shared that the details will be shared as and when the project gets initiated. The need for the buses to be customizable given Thimphu's terrain and transport network and the corresponding approach and departure angle was highlighted as one of the main points.

Q&A

- There were queries regarding the installation and maintenance of charging stations after they are installed. It was clarified that the bid would cover both distribution and installation of the charging stations by the supplier to avoid battery incompatibility issues. The maintenance would be handled by the agency operating the city bus service.



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- Participants also raised concerns about battery replacement and the disposal of used batteries, as well as relevant government policies. It was clarified that with modern technology, batteries can be refurbished and reused. Suggestions included having the supplier sign a contract with the manufacturer to take back the used batteries and specifying in the contract that the supplier is responsible for battery disposal.
- Dasho Secretary mentioned that the National E-waste Management Strategy, which has already been formulated, should be taken into account. Additionally, as part of the BGTP, a sustainable business model could be developed.
- An online participant asked whether the development of the charging infrastructure and the depots would be in scope for the bus supplier. Pegasys replied that the provision of the chargers to the buses would be in scope but that the construction of the depots and a metered connection to the grid would be the responsibility of the main BPS contractor. However the provision of specialist maintenance equipment and the deployment of trainers and possibly some maintenance specialists to the terminals and depot during an extended warranty period may also be required.

Vote of Thanks

Ms. Deki Wangmo, Senior Urban Planner, DHS, expressed her gratitude to everyone for their time and participation in the event. She urged continued support for the project to achieve a sustainable transport system.



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List of Attendees:

Sl#	Name	Agency
1	Dasho Secretary	MoIT
2	Mr. Norbu Wangdi	Pegasys
3	Mr. Pasang Tshering	City Bus Service
4	Mr. Sherub	Rigsar Construction Private Limited
5	Mr. Deo Kumar Rimal	iTechnologies
6	Mr. Jamyang Tenzin	Rinson Construction
7	Ms. Kezang Choki	STCBL
8	Mr. Ugyen Wangchuk	Deyjung Construction Pvt Ltd
9	Mr. Trashi Wangyal	President, Construction Association of Bhutan
10	Mr. Roshan Rai	Thimphu Thromde
11	Mr. Tsewang Rinchen	Original Bhutan
12	Mr. Bharuth Chhetri	Samden Vehicle
13	Mr. Namgay Rinchen Jamtsho	Wangthang Construction Pvt Ltd
14	Mr. Gopi Sunuwar	Rinzin Construction, Paro
15	Mr. Sonam Jamtsho	Gyeltshen Builders Pvt Ltd
16	Mr. Karma Gyeltshen	ST Motors
17	Mr. Tshering Dorji	M/s Pema Juney Construction Pvt Ltd
18	Ms. Laxmi Pradhan	STCBL
19	Mr. Jigme Tshering	STCBL
20	Ms. Namzang Dema	PPD, MoIT
21	Mr. Thinley D Dhendup	Smart Tech
22	Mr. Phub Gyeltshen	Yangkhor IT Pvt Ltd
23	Mr. Sonam Tobgay	OST
24	Ms. Kinley Om	Lhojong Construction Pvt Ltd
25	Mr. Penjor	PENJOR Construction Pvt Ltd
26	Mr. Sonam Tobgay	Jigsavy
27	Mr. Tashi Phuntsho	World Bank
28	Mr. Dorji Penjor	Chimmi R.D
29	Ms. Sonam Choden	Department of Surface Transport
30	Ms. Tshering Lhamo	PPD, MoIT
31	Mr. Tshering Dorji	Yangchenma Private Ltd
32	Mr. Chencho Tshering	STCBL



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33	Mr. Kelzang Dorji	STCBL
34	Mr. Shacha Dorji	PPD, MoIT
35	Mr. Rikesh Gurung	Green Road
36	Mr. Dipen Baraily	NTT Construction Pvt Ltd
37	Mr. Tashi Penjor	Department of Human Settlement
38	Ms. Bhawana Chhetri	Department of Human Settlement
39	Ms. Tshering Denka	Department of Human Settlement
40	Ms. Karma Euthra	Department of Human Settlement
41	Ms. Bunisha Pradhan	Department of Human Settlement
42	Mr. Cheki Wangchuk	Department of Human Settlement
43	Mr. Sangay Wangdi	Department of Human Settlement
44	Mr. Tika Ram Acharja	Department of Human Settlement
45	Ms. Kinley Wangmo	Department of Human Settlement
46	Ms. Ngawang Tshomo	Department of Human Settlement
47	Ms. Deki Wangmo	Department of Human Settlement
48	Sonam Tobgay	Druk Chapchab Construction (P) Ltd.
49	Shrikanth Aithala	Neuton Auto Pvt Ltd
50	Brendan Finn	The World Bank
51	Shruti Vijayakumar	The World Bank
52	Matthew Brian Gough	The World Bank
53	Thinley Dorji	Dheyma GV Pvt. Ltd.
54	Zac Lowndes-Bull	Pegasys
55	Stephen Raggett	Pegasys
56	Hirdesh Thakur	EKA Mobility India
57	Mr Y.T.	KGM Commercial
58	Alvin	KGM Commercial
59	Jigme Thinley	SAARC Development Fund
60	Singay Dorji	SKD Construction Pvt Ltd
61	Karma Jamtsho	Desang construction
62	Sushim Shah	Switch Mobility Automotive Ltd
63	Rubi Biswas	NEC Corporation India Pvt Ltd
64	Maqsood Ahmed	NEC Corporation India Pvt Ltd