

SENATE OF PAKISTAN



REPORT OF THE SENATE STANDING COMMITTEE **ON COMMUNICATIONS**

ON

**“THE SUBJECT MATTER OF
SUPPLEMENTARY QUESTION, ASKED BY
SENATOR NAUMAN WAZIR KHATTAK TO
STARRED QUESTION NO.130 ASKED BY
SENATOR MUHAMMAD TALHA MEHMOOD
ON 26-01-2018, REGARDING SUKKUR-
MULTAN (M-5) MOTORWAY”.**

REPORT NO.1 OF 2019

Presented by
(SENATOR HIDAYAT ULLAH)
(CHAIRMAN COMMITTEE)

SENATE SECRETARIAT

REPORT OF THE STANDING COMMITTEE ON COMMUNICATIONS ON THE SUBJECT MATTER OF SUPPLEMENTARY QUESTION ASKED BY SENATOR NAUMAN WAZIR KHATTAK IN CONNECTION WITH STARRED QUESTION NO.130, ASKED BY SENATOR MUHAMMAD TALHA MEHMOOD ON 26TH JANUARY, 2018 REGARDING SUKKUR-MULTAN (M-5) MOTORWAY.

I, Senator Hidayatullah, Chairman of the Standing Committee on Communications have the honour to present, on behalf of the Committee, this report on the subject matter of Supplementary Question asked by Senator Nauman Wazir Khattak in connection with Starred Question No.130 asked by Senator Muhammad Talha Mehmood on 26th January, 2018 regarding Sukkur-Multan (M-5) Motorway, and referred to the Standing Committee on Communications for consideration and report.

2. Following is the composition of the Committee:-

(i)	Senator Hidayat Ullah	Chairman
(ii)	Senator Agha Shahzaib Khan Durrani	Member
(iii)	Senator Ahmed Khan	Member
(iv)	Senator Dr. Jehanzeb Jamaldini	Member
(v)	Senator Mir Muhammad Yousaf Badini	Member
(vi)	Senator Syed Muhammad Sabir Shah	Member
(vii)	Senator Dr. Ashok Kumar	Member
(viii)	Senator Muhammad Usman Khan Kakar	Member
(ix)	Senator Bahramand Khan Tangi	Member
(x)	Senator Islamuddin Shaikh	Member
(xi)	Senator Liaqat Khan Tarakai	Member
(xii)	Senator Fida Muhammad	Member
(xiii)	Senator Molana Abdul Ghafoor Haideri	Member
(xiv)	Minister for Communications	Ex-Officio Member

3. The Standing Committee discussed the matter in its meetings held on 07-08-2018, 06-09-2018, 24-09-2018, 25-10-2018 and 12-12-2018. The Committee was granted 05 extensions in the time period for presentation of Report of the Committee on the said matter from the House and Chairman Senate respectively. The last extension of 30 working days was from 21-12-2018 to 31-01-2019.

4. During meeting of the Standing Committee held on 07-08-2018, the Chairman NHA informed the Committee as under:-

- (i) Framework of agreement was signed between Government of People's Republic of China and Government of Islamic Republic of Pakistan on 20th April, 2015. The scope of agreement included Sukkur-Multan Motorway project.



- (ii) The project envisaged construction of 392 Km 6-lane motorway between Sukkur and Multan including all earthworks, pavement works, structural works including bridges interchanges, culverts, cattle walk and etc., drainage & erosion protection works, ancillary works, electromechanical works and landscaping / greening works as described in the bidding document on EPC / Turnkey basis.
- (iii) The procurement of said project was conducted in a most transparent manner as per Framework agreement and in line with PPRA Rule-5 by obtaining ECC approval. The procurement process was planned on single stage two envelope bidding procedure.
- (iv) Economic & Commercial Counselor, Embassy of China, Islamabad vide letter dated June 3, 2015 communicated that based on the consensus reached between Government of China and the Government of Pakistan, following Chinese companies are nominated for the construction of project Sukkur to Multan Section (392 Km):-
 - a. M/S China State Construction Engineering Corporation
 - b. M/S China Civil Engineering Construction Corporation
 - c. M/S Sinohydro Corporation Limited
- (v) On the date for submission of bids i.e. August 6, 2015, all the three nominated firms submitted their bids. It is also clarified that neither M/S Redco was nominated nor any bid was received from this firm.
- (vi) Subsequent to opening of technical bids on August 6, 2015, these were evaluated. As a result, all the three firms were technically qualified. Subsequently, the price bids were opened. After detailed evaluation, the bid of M/S China State Construction Engineering Corporation was declared as lowest evaluated bid.
- (vii) The original bid of M/S China State Construction Engineering Corporation amounted to Rs.406.332 billion. However, after hectic deliberations on the technical parameters, the finalized price was Rs.294.352 billion. In this manner, a total saving to the national exchequer of Rs.111.98 billion was achieved. These deliberations were conducted in line with bidding provisions without compromising the functionality of motorway or the Employer's requirements.
- (viii) During the deliberations, a reduction in the bid price of Rs.19.047 billion was obtained from the successful bidder on account of exemption from custom duties / taxes on equipment and construction material (to be imported and used for this project only). Any amount over and above of the indicated benefit (Rs.19.047 billion) will be borne by the contractor. In this manner, the national interest has been fully safeguarded. The revised PC-I of Rs. 298.008 billion envisaging such an exemption was approved by ECNEC on December 19, 2015. The contract agreement was signed on December 22, 2015.

5. Senator Nauman Wazir Khattak, Special Invitee, made following observations on Multan-Sukkur Motorway Project:-

- (i) All of the road infrastructure under CPEC is being executed without any data from Chinese of the projected Chinese traffic on it and its subsequent design. Nor has the Chinese guaranteed minimum traffic.
- (ii) Capacity charges (as in thermal projects) has not been finalized with the Chinese government irrespective of the traffic so as to ensure loan repayment to the Chinese Axim bank.



- (iii) NHA board failed to identify the violation of the PPRA rule 5 and the inflated project cost as per CSR rates and the norm being practiced in other projects of NHA. NHA doesn't have a standard model / format for EPC bidding.
- (iv) Toll on the vehicles plying has not been finalized. Even if 5% of the Invoice value is charged it will take 46 years to pay back the loan (assuming 300 TEU enter Gwadar every day).
- (v) In 2014 engineering estimates were made amounting to Rs.240 billion subsequently PC1 was made amounting to Rs.259 billion. In 2015 the project was awarded to China Estate Engineering at Rs.294 billion after negotiation and changes as per original engineering estimate / PC1. After deleting some conditions from the project then cost should have been less than Rs.259 billion.
- (vi) NO EPC contract should be awarded without finalizing the plan alignment and detailed designing which would in normal practice be completed in 1 year. NHA to evaluate both the EPC models and the standard project implementation which includes escalation. NHA to recommend to the Government as to which model is of National Interest. Government officials signing contract with any Foreign Government or contractor cannot be in violation of prevalent laws of Pakistan. Any official accepting / signing such agreement will be held responsible individually and collectively for it and would be liable for prosecution as per laws of Pakistan.

6. The M/O Communications stated that the concept of EPC (Engineer, Procure and Construct) mode is different than the traditional contract. In the traditional contract, the employer is responsible for design of project, as a result a very detailed Bill of Quantities (BOQ) is devised. Subsequently bidding is conducted on this basis. However under EPC Mode, bidding is carried out on the basis of employers requirements which lists down the broad parameters of the infrastructure facility i.e. to be constructed. The bidder carry out their own preliminary decision that meets the employers requirements and submit their bids as per their own BOQ based on their design. Secondly under the traditional contracting mode, the contract price is not fixed and is adjustable depending upon variation in measured quantities and price escalation. On the other hand, under EPC mode, as the contractor is responsible for design so the price is locked and cannot be changed during the currency of contract due to change in quantities or price escalation. Chairman NHA further informed the Committee that Toll Tax will be charged as per notified rate of Motorway which is Rs.1.5 per k.m. The Secretary, Communications stated that in Government to Government agreements, there is exemption of PEPPRA Rule, 5. Senator Muhammad Usman Khan Kakar stated that we should demand many times more toll tax from China, because we are making this road for China. Secretary, M/O Communications was of the view that this is a Government to Government agreement and all Ministries of the Government are bound to act on this frame work agreement of which implementation part is the responsibility of M/O Communications. He further stated



that National honour is prime for all of us. The points/questions raised by Senator Nauman Wazir Khattak were provided to the M/O Communications, Chairman NHA and representatives of the Finance Division and Planning, Development and Reforms Division.

7. The Deputy Chief (T&C), M/O Planning, Development & Reforms informed the Committee that the processing of PC-I of the projects is done by the Planning, Development and Reforms Division. He further stated that initial cost of Sukkur-Multan Motorway Section was Rs.259 billion which was revised to Rs.298 billion.

8. The Joint Secretary, Economic Affairs Division gave following details to the Committee regarding Sukkur-Multan Motorway Section:-

- (i) The Commercial Agreement signed between NHA and M/S China State Construction Engineering Corporation Limited on 22-12-2015. The main components of the Project includes provision of construction of 135 bridges, 11 interchanges, 10 flyovers, 32 services & rest areas, 22 toll plazas, 1,148 culverts, 426 underpasses / subways / cattle creep, nallahs and other allied structures etc.
- (ii) 392 KM long, 6 lanes Sukkur-Multan Section of Karachi Lahore Motorway (1,148 km) located in Punjab and Sindh provinces.
- (iii) Rs.259,353.00 million with FEC Rs.233,418 Original cost
- (iv) Rs.314,977.280 million including FEC of Rs.294,352.080 million Revised cost
- (v) Approved by the ECNEC on 3rd July, 2014, Original
- (vi) Approved by the ECNEC on 19th December, 2015 Revised Original PC-1 was prepared on the basis of feasibility study conducted by a Chinese firm. Due to security reasons, the deployment of Chinese firm was restricted and alignment details were finalized with the help of satellite imagery and google maps. The PC-I was revised on the basis of the final EPC bid cost i.e. Rs.294,352,075,474/-
- (vii) Type of financing/terms of loan / financing:-
 - (a) Government Concessional Loan (GCL) RMB 4800 million
 - (b) Preferential Buyer Credit (PBC) US\$ 1790.113 million
 - (c) Buyers Credit (BC) US\$ 361.224 million

9. Senator Nauman Wazir Khattak, Mover raised questions over transparency in the construction of Sukkur – Multan Motorway Project by the National Highways Authority (NHA). According to him only three Chinese Companies were shortlisted for the project and these companies submitted their bids / feasibilities mentioning the cost of the project from Rs.240 billion to Rs.245 billion. He further stated that later a local company was asked to submit its feasibility to counter check the cost of the project. This local company mentioned the same range of the cost of the project, however the project was awarded for Rs.440 billion.



10. Senator Nauman Wazir alleged embezzlement of Rs.137 billion of public money in the said project. He raised following questions to be answered by NHA in detail:-

Q No.1: Why only three nominated contractors by China were approved by NHA board?

Was requalification carried out by the NHA management and then recommended to the board for the approval or otherwise? Was NHA forced by the political Government to carry out this doctored bidding in which all three bidders were in collusion with each other and have shared the work among themselves?

Q No.2: Was the PC1 made in 2014 amounting Rs. 240 billion correct or the final award Rs.314 billion in which the BOQs were even further reduced by 110 billion. And also both Chinese companies namely Chinese State Construction Company and Syno Hydro submitted feasibility studies amounting to Rs. 240 and 242 billion. Is it not correct that if original PC1 of Rs. 240 billion is changed and BOQs reduced by 110 billion then the actual tendering should have been at Rs.130 billion whereas it has been awarded at Rs.314 billion? Thus causing a loss of Rs.184 billion to our motherland.

Q No.3: Has NHA initiated any proceedings against NHA staff or against the Chinese companies by black listing them who indulged in this massive corruption? Is it right that Mr. Javed Sadiq the commission agent for BCS has received 6% commission and Chinese State Construction Company and China Power (Syno Hydro) have the patronage of Mr. Shahbaz Sharif, Ex CM Punjab through Mr. Javed Sadiq and Mr. Nawaz Sharif, Ex. PM Pakistan through Saifur Rahman?

Q No.4: Is it right that Lahore-Abdul Hakim Motorway was constructed at a cost of 64 Crore/Km and the said Multan-Sukkur Motorway has been constructed at Rs.103 Crore/Km? Kindly provide the comparative analysis of both BOQs rates and quantity.

11. The Secretary, M/O Communications informed the Committee that on the observations / points raised by Senator Nauman Wazir Khattak during last meeting of the Standing Committee held on 25th October, 2018, a meeting was held in the Ministry of Communications of all the stake holders / concerned Ministries and consensus replies have been made, which are at Annexure-A. Response of M/O Planning, Development and Reforms is at Annexure-B. During meeting of the Standing Committee held on 03-01-2019, the NHA provided the projected traffic count on Sukkur-Multan Motorway as desired by Senator Nauman Wazir Khattak which is at Annexure-C.

12. After thorough consideration the Standing Committee unanimously made following observations / recommendations:-


- (i) The construction of Sukkur-Multan Motorway project (392 Km, 6-lane) is included in the Framework Agreement signed between the Government of People's Republic of China and the Government of Islamic Republic of Pakistan on 20-04-2015. Under the said Agreement, the Chinese companies shall be responsible for engineering, design, procurement and construction (EPC) and supervision work of the projects. The Chinese side will provide a name list of recommended Chinese companies by relevant associations.



- (ii) Pakistani companies should be allowed to participate in the tendering process for fair competition.
- (iii) No EPC contract should be awarded without finalizing the plan alignment and detailed designing. NHA may evaluate both EPC models and the standard project implementation which includes escalation and recommend to the Government as to which model is in the national interest.

13. The Standing Committee in its meeting held on 03-01-2019 unanimously adopted the report of the Committee. The meeting was attended by the following members:-

(i) Senator Hidayat Ullah	Chairman
(ii) Senator Molana Abdul Ghafoor Haideri	Member
(iii) Senator Ahmed Khan	Member
(iv) Senator Dr. Jehanzeb Jamaldini	Member
(v) Senator Mir Muhammad Yousaf Badini	Member
(vi) Senator Syed Muhammad Sabir Shah	Member
(vii) Senator Dr. Ashok Kumar	Member
(viii) Senator Muhammad Usman Khan Kakar	Member
(ix) Senator Liaqat Khan Tarakai	Member
(x) Senator Agha Shahzaib Durrani	Member
(xi) Senator Fida Muhammad	Member


(SHAUKAT JAVAID)
Joint Secretary/Secretary Committee


(SENATOR HIDAYAT ULLAH)
Chairman Standing Committee on
Communications

**Reply submitted by M/O Communications in the meeting of
the Standing Committee held on 12-12-2018.**

MULTAN SUKKUR MOTORWAY FINDINGS / RECOMMENDATIONS

S. No	Question	Reply
1.	All of the road infrastructure under CPEC in being executed without any data from Chinese of the projected Chinese traffic on it and its subsequent design. Nor has the Chinese guaranteed minimum traffic.	<p>An exhaustive feasibility study for Sukkur – Multan Motorway section was carried out as a part of Peshawar – Karachi Motorway project in year 2014 by a Chinese firm under a Memorandum of Understanding with Government of Pakistan. The feasibility study inter alia included comprehensive traffic study which formed the basis of project's technical and commercial viability. Under the principle of combining quantitative calculations and qualitative analysis, the Traffic Study Report forecasted the traffic volume of the proposed project in the future.</p> <p>In addition to this, it is highlighted that even in the absence of Chinese traffic; the project will be highly beneficial in addressing the increasing traffic congestion on N-5 between Multan and Sukkur (Annex-I).</p> <p>It was recorded in the Minutes of the Joint Site Visit of Chinese Expert Group on Transport infrastructure from April 14 - 27, 2014 that, "Traffic volume in this corridor is very high", and "approximately 80% of the vehicular traffic on southern section of N-5 is heavy which mostly include containers, oil tankers, trucks/trailers" (Annex-II).</p>
2.	Capacity charges (as in thermal projects) have not been finalized with the Chinese government irrespective of the traffic so as to ensure loan repayment to the Chinese EXIM Bank.	<p>The question does not relate to road infrastructure projects as Capacity Charges are applied in electric power generation projects.</p> <p>Road infrastructure projects were executed under EPC + Financing mode</p>
3.	NHA agreed with the Senate Committee that 3 nominated Chinese contracting companies do not qualify as "fair competition". In the Joint Working Group (JWG) meeting in China; Pakistan's reservation on holding competition among 3 nominated companies instead of competition among all Chinese State Construction Companies was	<p>It is submitted that nominated bidding among three Chinese constructors was carried out in line with the Framework Agreement signed between the Government of Pakistan and Government of China on 20th April 2015. The Federal Cabinet granted the necessary approval for signing the Framework Agreement between M/o PD&R of Pakistan and NDRC of China on 17-10-2014 as per Rule 16(2) of Rules of Business 1973.</p> <p>Subsequently the Framework Agreement was signed between the Government of Pakistan and Government of China on 20th April 2015.</p> <p>It is submitted that nominated bidding among 3 Chinese constructors was carried out in line with the Inter Governmental Framework Agreement, it is further apprised</p>

	<p>argued. This would have resulted in lower CAPEX and subsequent loan from China EXIM Bank. In the joint working group Pakistan was represented by EAD, Planning Commission and PM office. All 3 of them in violation of PPRA Rule 5 and without the approval of ECC accepted Chinese demand and entrusted this inflated project capital expenditure on NHA for implementation.</p>	<p>that the procedure adopted was in accordance with Public Procurement Rule-5 which states <i>"whenever these rules are in conflict with an obligation or commitment of the Federal Government arising out of an international treaty or an agreement with a state or states, or any international financial institution the provisions of such international treaty or agreement shall prevail to the extent of such conflict"</i>.</p> <p>Moreover, approval of ECC was also obtained on 12th August 2015 for invoking Public Procurement Rule 5.</p>
4.	<p>NHA plea of being brown beaten into accepting inflated project entrusted on them by EAD and Planning commission does not absolve them of their national responsibility.</p>	<p>It is submitted that NHA is an executing agency and is obliged to develop roads entrusted to it by the Government of Pakistan. Clarification meetings spanning over several months were conducted with the lowest evaluated bidder and after hectic efforts of NHA, the cost was rationalized by Rs. 111 Billion.</p>
5.	<p>NHA board failed to identify the violation of the PPRA Rule 5 and the inflated project cost as per CSR rates and the norm being practiced in other projects of NHA. NHA doesn't have a standard model/format for EPC bidding.</p>	<p>As explained under Sr. No.3, no violation of Public Procurement Rule 5 was done. Furthermore, the high cost of project was rationalized thereof resulting in reducing the loan amount by Rs. 111 billion. It may be kept in mind that EPC projects by virtue of offering a fixed cost without possibility of escalation cannot be equated to normal item-rate contracts. The constructors are pricing the risk of inflation and variations and offering a firm cost upfront in EPC bidding. Pakistan Engineering Council (PEC) bidding document format for EPC Contracts was utilized in this project.</p>
6.	<p>Toll on the vehicles plying has not been finalized. Even if 5% of of the Invoice value is charged it will take 46 years to pay back the loan (assuming 390 TEU enter Gwadar every day).</p>	<p>The technical, financial and commercial viability of Road infrastructure projects is not determined solely on the basis of Toll. <i>Multi-criteria Decision Analysis</i> is carried out wherein all possible direct and indirect benefits are taken into account with reasonable judgment.</p> <p>Results of the economic analysis are given below:</p> <p>Benefit Cost Ratio @ 12% Discount Rate: 1.80 Net Present Value @ 12% Discount Rate: Rs. 185,649.90 Million</p>

		Internal Rate of Return: 19%												
		<table> <tr> <th></th><th>20% Increased Costs</th><th>20% Reduced Benefits</th></tr> <tr> <td>Benefit / Cost Ratio</td><td>1.50</td><td>1.44</td></tr> <tr> <td>Net Present Value:</td><td>Rs. 139,098.56 Million</td><td>Rs. 65,106.66 Million</td></tr> <tr> <td>Internal Rate of Return:</td><td>16%</td><td>16%</td></tr> </table>		20% Increased Costs	20% Reduced Benefits	Benefit / Cost Ratio	1.50	1.44	Net Present Value:	Rs. 139,098.56 Million	Rs. 65,106.66 Million	Internal Rate of Return:	16%	16%
	20% Increased Costs	20% Reduced Benefits												
Benefit / Cost Ratio	1.50	1.44												
Net Present Value:	Rs. 139,098.56 Million	Rs. 65,106.66 Million												
Internal Rate of Return:	16%	16%												
7.	In 2014 engineering estimates were made amounting to Rs.240 billion subsequently PC1 was made amounting to Rs. 259 billion. In 2015 the project was awarded to China Estate Engineering at Rs. 294 billion after negotiation and changes as per original engineering estimate/PC1.	Under EPC (Engineer, Procure & Construct) mode of contracting, the bidders are obliged to offer their bid price as per their preliminary design. In this manner, the Client then holds clarification meeting with the lowest evaluated bidder to agree to the final scope of work and cost. Again, this mode is completely different from item rate contracts where the contractor is just required to quote the rates against the quantities fixed by the Client in the bidding document.												
8.	2-Lane E-35 Mansehra - Abbottabad has been escalated 1300 times on NHA intervention of padded amount of Rs. _____ were roved resulting in saving of Rs. _____ is appreciable.	The observation/ Question require elaboration please as it is not self-explanatory.												
9.	No EPC contract should be awarded without finalizing the plan alignment and detailed designing which would in normal practice be completed in 1 year. NHA to evaluate both the EPC models and the standard project	A comparative study of item rate contracts with EPC contracts shall be conducted in due course of time and submitted accordingly.												



<p>implementation which includes escalation. NHA to recommend to the Government as to which model is the National interest. Government officials signing contract with any Foreign Government or contractor cannot be in violation of prevalent laws and Pakistan. Any official accepting/signing such agreement will be held responsible individually and collectively for it and would be liable for prosecution as per laws of Pakistan.</p>		
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Chapter 1: INTRODUCTION

1.0 Background

In May 2013, Pakistan Muslim League Nawaz Group PML(N) won the parliamentary elections in Pakistan, as a result of which Mr. Muhammad Nawaz Sharif, leader of PML(N) was elected as the Prime Minister of Pakistan for the third time. His government promised to allocate full support in promoting the economic development of Pakistan.

In July 2013, Sharif visited China and held talks with Chinese Prime Minister Li Keqiang, and signed a MOU with China State Construction Engineering Corporation Ltd. (CSCEC) on July 5 concerning the construction of the Karachi-Multan-Lahore Motorway Project.

On August 30, 2013, the Pakistani Prime Minister assigned CSCEC to perform the feasibility study of the project on a meeting held in Lahore.

Based on the traffic survey in the affected areas of the Pakistan Karachi-Multan-Lahore Motorway Project, this report shall give comprehensive considerations to the current social-economic situations, the situation of land utilization, comprehensive transportation conditions and respective development planning, etc. Under the principle of combining quantitative calculation and qualitative analysis, the report forecasts the traffic volume of the proposed project in the future, so as to provide necessary basis and reference for the determination of subsequent construction plans.

1.1 Main Contents of the Study

The main contents of the study include:

- Conducting traffic surveys:
 - (i) Origin-Destination (OD) survey within 24 hours;
 - (ii) Traffic observation within 24 hours;
 - (iii) Willingness to pay survey;
 - (iv) Traveling speed survey on related roads;
 - (v) Turning movement observation within 24 hours;



Minutes of the Joint Site Visit of Chinese Expert Group on Transport Infrastructure
from April 14-27, 2014

minimize risks emanating from possible geological calamities during operation. Security issues along the whole alignment needs to be addressed.

- e. The Bridges must be built as per existing river width. Pakistani side assured that they will undertake the hydrology/ hydraulic study of all the bridges and review the hydraulic data as per the recommendations to which Chinese side agreed.

4. Regarding proposed Karachi – Lahore Motorway (KLM), the Chinese Delegation agreed with the importance of KLM project particularly after the instant Site visit. Following points were highlighted by the Chinese side:

- a. Traffic volume within this corridor is very high.
- b. It was also noted that approximately 80% of the vehicular traffic on southern section of N-5 is heavy which mostly include containers, oil tankers, trucks/trailers.
- c. It was observed that since heavy road traffic, such as containers, provides efficient door to door service, therefore, shift from road to railway is not envisaged.
- d. Commercial traffic is passing through the most economically developed area of the Country. The socioeconomic condition of the people of area is on the rise resulting in higher vehicular traffic.
- e. There are very large cultivated areas rich in fruits, crops, vegetables etc. The KLM shall facilitate the transport of agricultural products to bulk market and processing areas.
- f. The distance from Karachi to Lahore along the proposed motorway is approximately 1,150 Km and a vehicle can cover this stretch within one day resulting in the saving of time and improvement of transport efficiency.

Conclusion

5. Karachi – Lahore Motorway is very essential and necessary. Keeping in view the increasing traffic volume, the need for construction of 6-Lane Motorway is understandable "youdaoli".

- Regarding KLM sections along the river Indus, taking into consideration the potential flood risks, the Chinese Delegation suggested to NHA to study possible alternative options.
- Chinese side also suggested certain design improvements. Pakistani side agreed to consider and incorporate them in future endeavors.

On K826+000~K868+510 section, there are 5 long bridges of 1,025m, 8 short bridges of 256m, accounting for 3.01% of this section's length. There are and 1 grade separation, 3 interchanges, 3 flyovers, 76 underpasses, 3 slip road toll plazas, and 1 rest area.

The total investment amount of the project is estimated as Rs. 837,944,868,118, including Rs. 808,350,737,191 for K79+000~K770+000 section and K868+510~K1100+103.971 section (construction cost per Km is Rs. 876,721,894), and Rs. 29,594,130,927 for K826+000~K868+510 section (construction cost per Km is Rs. 696,168,688). The total amount excludes the cost of K770+000~K826+000 on M-4 motorway as well as the costs of land acquisition and resettlement, crop compensation, temporary land occupancy and other expenses related to the project.

The project is tentatively scheduled to commence in October 2015 and complete in October 2018 with duration of 36 months.

The flow sheet of cost-benefit of this project is prepared according to the economic costs and benefits calculation results. Economic internal rate of return (EIRR) of this project is 15.51%, which is larger than the social rate of discount (12%). It means this project is feasible from the perspective of analysis on cost-benefit.

Cost-Benefit Index

Index	ENPV (million Rs.)	EIRR
Evaluation result	260,222	15.51%

The sensitivity analysis result of cost-benefit is obtained by considering the construction cost and future change range of the operation benefits in this project. EIRR can still reach 13.45%, which is greater than social rate of discount (12%) if the benefits are 10% reduced and the costs are 10% increased. It thus enjoys strong anti-risk capacity.

Analysis Result of Cost-Benefit Sensitivity

Cost change Effectiveness change		-10%	0%	10%
-10%	ENPV (million Rs.)	240,492	175,805	111,119
	EIRR	15.57%	14.44%	13.45%
	EBCR	1.3830	1.2520	1.1448
0%	ENPV (million Rs.)	324,909	260,222	195,536
	EIRR	16.69%	15.51%	14.48%



Multan – Sukkur Motorway Findings / Recommendations

The response of MPDR on Findings No.3 and 4 is required. Rest of the findings relate to Ministry of Communications and NHA.

Response to No.3 and 4

The statement regarding Planning Commission / MPDR needs to be seen in following correct perspective:

- i) The approval of the Prime Minister for the Framework Agreement for Multan-Sukkur Motorway was accorded on a Summary moved by Ministry of Communications.
- ii) The framework agreement states that the bidding will be conducted between the Chinese companies nominated by Govt. of China.
- iii) Neither MPDR directed Ministry of Communications to move the Summary for approval of the Framework agreement nor it directed NHA to sign MoU with China State Construction Engineering for conducting free of cost feasibility study.
- iv) The CPEC Joint Working Group (JWG) on Transport Infrastructure is led by Secretary Communications from the Pakistani side as the focal ministry for this Joint Working Group.
- v) The projects in CPEC JWG on Transport Infrastructure are proposed by respective ministries / departments. In case of Multan-Sukkur Motorway, the project was proposed by NHA and further framework agreement / loan applications with Chinese side was done by MoC / NHA.
- vi) The recommendations given by the JWG on Transport Infrastructure are then presented to the Joint Cooperation Committee (JCC) for approval. M/o Communications should provide Minutes of six JWG meetings on Transport Infrastructure to the Honorable Senator.
- vii) It is clarified that MPDR / Planning Commission has never given any direction to the line ministries / departments to submit a particular project for implementation. The projects through a PC-I are submitted in MPDR for technical / economic / financial scrutiny and thereafter a Working Paper is presented to the CDWP for its consideration. If CDWP recommends, then the project through a Summary is presented to the ECNEC for consideration. After approval from ECNEC, authorization is issued by MPDR and administrative approval is issued by the concerned ministry for project implementation.
- viii) The original PC-I of the Multan-Sukkur Motorway based on NHA CSR was processed and examined in MPDR and after clearance from a high level Post CDWP Committee under Secretary Planning which included representatives of MoC/NHA, the project cost was rationalized from Rs.276 billion to Rs.259 billion and the same approved by the ECNEC.
- ix) It may further be clarified that MPDR / Planning Commission has no role in the bidding process, selection of the contractor and thereafter execution of the project. Reportedly, in the limited bidding carried out by NHA, the lowest bid was received at Rs.406 billion, NHA through an alternate bid reduced the bid price from Rs.406 billion to Rs.294 billion. MPDR had no involvement in the bidding, negotiations and final selection of the EPC bid price by NHA. Thereafter, MoC / NHA submitted the revised PC-I at the cost of Rs.314 billion. The revised PC-I of Multan Sukkur Motorway was approved by the ENCEC at the cost of Rs.298 billion which included Rs.294 billion EPC bid price.

Note: T&C section apprehension on the cost of the revised PC-I are on record i.e. Part B of the Working Paper where comment has been made on the unit cost comparison with Lahore – Abdul Hakim Motorway. Lahore Abdul Hakim Motorway through open bidding was given to a JV of Chinese-Pakistani firm. The unit cost of Multan-Sukkur Motorway is higher than Lahore Abdul Hakim Motorway to the tune of Rs.100 million / km.

Traffic:

1. Diverted/Generated Traffic for the Project:

Traffic counts were conducted by NHA in December 2013. These counts have been carried out at various cities, Multan, Lodhran, Bahawalpur, A.P. East, T.M.Pinnah, Pir Zahir, R.Y.Khan, Sadiqabad, Ubaro, Mirpur Mathelo, Ghotki, Panno Aqil & Rohri. On the basis of these counts, an average traffic has been established for consideration in the analysis. Depending upon these counts, only 60% of the average Traffic is assumed to be diverted from N-5 and 25% traffic from other linking National Highways, Provincial Highways/Roads in the project vicinity have been assumed for the analysis. The assumption of growth rates which applies to the different vehicle categories are based on the growth rates of related sectors of the economy like transport and communication sector, road transport growth and GDP growth in general. However, the assumed growth rate for CPEC-specific freight traffic is conservative 6.5% although Chinese GDP is growing at much higher rate.

The details of these growth rates and assumed traffic growth rates are given in the tables below:

Basis of Traffic Growth Rate

Description	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
T & C Sector growth *	3	2.4	8.9	3.4		
Road Transport growth*			2.88	2.24		
GDP growth *	2.6	3.7	4.4	3.6	4.1	
GDP growth **				3.5	3.3	4.0

* Pakistan Economic Survey 2014-15

** :<http://www.imf.org/external/country/pak/index.htm>

A very conservative approach has been adopted in the forecast of traffic in the years ahead, by adopting an annual compound growth rate of 3% to 4% & in the year 2023, it is considered that KLM would be fully operationalized and Heavy Buses and Cargo vehicles (trucks) would grow @ 5% & 7.5% respectively in the year 2023. The same assumption has

been considered in the analysis. Generated Traffic has been assumed @ 10% starting from the year 2019.

Construction of Motorway from SUKKUR TO MULTAN (KLM)
Diverted Traffic

Year	Car/Jeeps	Pickup/Wagon	Mini Bus	Large Buses	TRK - 2XL	TRK - 3XL	TRK - 4XL	TRK - 5XL	TRK - 6XL	AADT
ACGR%	3.5%	3.5%	3.5%	3.5%	4.0%	4.0%	4.0%	4.0%	4.0%	
2019	4214	926	470	478	1857	1752	2651	259	916	13524
ACGR%				5%	7.5%	7.5%	7.5%	7.5%	7.5%	
2023	4835	1063	550	564	2246	2118	3205	313	1108	16004
2033	6821	1499	815	919	4629	4366	6606	646	2284	28585
2043	9621	2115	1206	1498	9540	8998	13616	1330	4707	52632

Construction of Motorway from SUKKUR TO MULTAN (KLM)
Generated Traffic

Year	Car/Jeeps	Pickup/Wagon	Mini Bus	Large Buses	TRK - 2XL	TRK - 3XL	TRK - 4XL	TRK - 5XL	TRK - 6XL	AADT
2019	421	93	47	48	186	175	265	26	92	1352
2023	484	106	55	56	225	212	321	31	111	1600
2033	682	150	81	92	463	437	661	65	228	2859
2043	962	212	121	150	954	900	1362	133	471	5263

3. Traffic Projection/Estimation for China-Pakistan Economic Corridor (CPEC)

It is important to analyze China's Import/Export volume by weight (tonnage, TEUs/ FEUs) from the point of view which may enable us to reasonably estimate and translate some of its share into freight traffic for CPEC. China is the largest importer of Crude Oil in the world and more than half of its demand for energy comes from Middle East and its shipment route is through Strait of Malacca and island of Sumatra which involves huge costs⁽¹⁾. One of the short, safe and cost-effective route could be CPEC, going through Khunjrab Pass and using ports of Gwadar and Karachi. China, however, is not only considering the transportation of Crude Oil by Road but is also considering other modes of transportation, i.e., Rail and Pipelines⁽¹⁾.

Twenty-foot equivalent unit (TEU) is a standard unit for describing a ship's cargo carrying capacity, or a shipping terminal's cargo handling capacity. A standard forty-foot (40x8x8

feet) container equals two TEUs (each 20x8x8 feet). Tianjin Port of China was handling 447 million tons of cargo in the year 2012 and the containers throughput was 12.3 million TEUs. China forecasts that for the year 2017, Tianjin Port will handle more than 600 million tons of cargo and container volume will surpass 20 million TEUs.⁽²⁾

As China is the largest importer of the Crude Oil in the world,⁽¹⁾ therefore, to estimate a share of cargo and translate it into CPEC freight traffic volume it is important that we classify it into two broad categories: imports of petroleum & liquids and other solid trade volume. In 2014, China imported 302 million tons ⁽¹⁾ of petroleum & liquids from different parts of the world, which when converted to liquid unit of measurement is equal to 273,969.568 million liters. Average daily import can be worked out if we divide it by 365, i.e., 750.601 million liters per day. Now, a typical bowser (5-XL Truck) can carry 44,000 liters of oil; therefore, if hypothetically 100% of it is carried by road then it will require a daily fleet of 17,069 bowsters. For our analysis we assume that only 10% oil would be carried through CPEC and therefore 1,706 bowsters (5-XL trucks) would be required for carrying the cargo up to China's Dry port.

For other (solid/dry) category of cargo and its corresponding traffic estimation share, we may assume that the "remaining" forecast cargo of year 2017 at the Tianjin Port is 300 million tons and it would be handled by 10 million TEUs. As one TEU requires one 2-XL truck, therefore if we convert it into Forty-Foot Equivalent Unit (FEU), the total remaining annual trade volume would require 5 million 4-XL Trucks annually. For our analysis we assume that only 20% of this cargo would be carried through CPEC and therefore would be transported on average by 2,740 trucks (4-XL) daily.

Thus, the total CPEC-specific freight traffic is 4,446 vpd (1,706 5-xl and 2,740 4-xl) considered for Economic Analysis of Multan - Sukkur Motorway (KLM). This traffic is assumed to ply on KLM after 5-years of its completion.

⁽¹⁾ Wikipedia

⁽²⁾ Source: <http://www.chinadaily.com.cn/tianjinport>

Construction of Motorway from SUKKUR TO MULTAN (KLM)
CPEC Traffic



Year	Car/ Jeeps	Pickup/ Wagon	Mini Bus	Large Buses	TRK - 2XL	TRK - 3XL	TRK - 4XL	TRK - 5XL	Total
2023	0	0	0	0	0	0	2740	1706	4446
2028	0	0	0	0	0	0	3754	2337	6091
2038	0	0	0	0	0	0	7046	4387	11433
2043	0	0	0	0	0	0	9654	6011	15665

Construction of Motorway from SUKKUR TO MULTAN (KLM)
AADT for the Project

Year	Car/Jeeps	Pickup/ Wagon	Mini Bus	Large Buses	TRK - 2XL	TRK - 3XL	TRK - 4XL	TRK - 5XL	TRK - 6XL	AADT
2019	4635	1019	518	526	2043	1927	2916	285	1008	14876
2023	5319	1169	605	621	2471	2330	6266	2050	1219	22050
2033	7503	1649	896	1011	5092	4803	12410	3912	2512	39789
2043	10584	2327	1327	1648	10494	9898	24631	7474	5178	73561



NATIONAL HIGHWAY AUTHORITY
Construction of 6-Lane Motorway (Sukkur - Multan) 392 Kms - KLM

Generated Traffic

		% for Generated Traffic									
		10%									
Construction Period		Car / Jeep	Bus / Van / Minivan	Auto / Rickshaw	Light / Heavy	TRK / DTL	TRK / SYL	TRK / TAL	TRK / SOL	TRK / GLE	Total
	2016										
	2017										
	2018										0
1	2019	421	93	47	48	186	175	265	26	92	1352
2	2020	436	96	49	50	193	182	276	27	95	1404
3	2021	451	99	51	52	201	189	287	28	99	1457
4	2022	467	103	53	54	209	197	298	29	103	1513
5	2023	484	106	55	56	225	212	321	31	111	1600
6	2024	500	110	57	59	241	228	345	34	119	1694
7	2025	518	114	60	62	260	245	370	36	128	1793
8	2026	536	118	62	65	279	263	398	39	138	1898
9	2027	555	122	64	69	300	283	428	42	148	2011
10	2028	574	126	67	72	322	304	460	45	159	2130
11	2029	594	131	70	76	347	327	495	48	171	2258
12	2030	615	135	72	79	373	351	532	52	184	2394
13	2031	637	140	75	83	401	378	572	56	198	2539
14	2032	659	145	78	88	431	406	615	60	212	2694
15	2033	682	150	81	92	463	437	661	65	228	2859
16	2034	706	155	85	97	498	469	710	69	246	3034
17	2035	731	161	88	101	535	505	763	75	264	3222
18	2036	756	166	92	106	573	542	821	80	284	3423
19	2037	783	172	95	112	618	583	882	86	305	3637
20	2038	810	178	99	117	665	627	948	93	328	3865
21	2039	838	184	103	123	714	674	1020	100	352	4109
22	2040	868	191	107	129	768	724	1096	107	379	4369
23	2041	898	197	112	136	826	779	1178	115	407	4648
24	2042	930	204	116	143	887	837	1267	124	438	4945
25	2043	962	212	121	150	954	900	1362	133	471	5263

NATIONAL HIGHWAY AUTHORITY

Construction of 6-Lane Motorway (Sukkur - Multan) 392 Kms - KLM

Existing Traffic/Diverted Traffic

% of Provincial, Local & other NH Traffic

25%

25%											
Year		Truck	Truck/Wagon	Mini Bus	Large Bus	TRK - XL	TRK - XL	TRK - XL	TRK - XL	TRK - XL	Total
Construction Period	2016	3801	835	418	425	1651	1557	2357	230	815	12089
	2017	3934	865	435	442	1717	1620	2451	239	847	12550
	2018	4071	895	452	460	1786	1684	2549	249	881	13027
1	2019	4214	926	470	478	1857	1752	2651	259	916	13524
2	2020	4361	959	489	497	1932	1822	2757	269	953	14039
3	2021	4514	992	509	517	2009	1895	2867	280	991	14574
4	2022	4672	1027	529	538	2089	1971	2982	291	1031	15129
5	2023	4835	1063	550	564	2246	2118	3205	313	1108	16004
6	2024	5005	1100	572	593	2414	2277	3446	337	1191	16935
7	2025	5180	1139	595	622	2595	2448	3704	362	1281	17926
8	2026	5361	1179	619	653	2790	2632	3982	389	1377	18982
9	2027	5549	1220	644	686	2999	2829	4281	418	1480	20106
10	2028	5743	1262	670	720	3224	3041	4602	450	1591	21303
11	2029	5944	1307	696	756	3466	3269	4947	483	1710	22579
12	2030	6152	1352	724	794	3726	3514	5318	520	1838	23939
13	2031	6367	1400	753	834	4006	3778	5717	559	1976	25389
14	2032	6590	1449	783	876	4306	4061	6145	600	2124	26936
15	2033	6821	1499	815	919	4629	4366	6606	646	2284	28585
16	2034	7060	1552	847	965	4976	4693	7102	694	2455	30345
17	2035	7307	1606	881	1014	5349	5045	7635	746	2639	32222
18	2036	7562	1662	916	1064	5751	5424	8207	802	2837	34226
19	2037	7827	1721	953	1118	6182	5831	8823	862	3050	36365
20	2038	8101	1781	991	1174	6645	6268	9484	927	3279	38650
21	2039	8384	1843	1031	1232	7144	6738	10196	996	3525	41089
22	2040	8678	1908	1072	1294	7680	7243	10960	1071	3789	43695
23	2041	8982	1974	1115	1358	8256	7787	11782	1151	4073	46479
24	2042	9296	2044	1160	1426	8875	8371	12666	1238	4379	49453
25	2043	9621	2115	1206	1498	9540	8998	13616	1330	4707	52632

NATIONAL HIGHWAY AUTHORITY
CONSTRUCTION OF HASSANABDAL (BURHAN) - HAVELIAN EXPRESSWAY (E-35) 59.1 KMS - 6 LANE

Additional Traffic for China Pak Economic Corridor (CPEC) Sukkur - Multan Section

Construction Period	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CPEC Traffic Projection:

Total Cargo Exports/Imports in the year 2012	477.00 Million Tons	Total Import of Petroleum in 2014	302.00	Million Tons
Number of TEUs required in the year 2012	12.30 Million	Tons into Liters @ 1 ton = 907.184 lit p.a	273,969.57	Million Liters
Projected Cargo Exports/Imports handling in the year 2017	300.00 Million Tons	Oil p/d	750,601,556.2	Liters
Projected TEUs required in the year 2017	10.00 Million	5-XL Vehicles required p/d as one carry 44,000 lit	17,059.13	vpd
Projected TEUs Equivalent to FEUs in the year 2017	5.00 Million	10% Assumed	1,705.91	vpd
Projected FEUs equivalent to Vehicles p/d	13,698.63 Vehicles			
20% Assumed	2,739.73 Vehicles p/d			

Addl Traffic for CPEC (Trucks) have been projected to increase with ACGR @ 6.5% keeping in view that Economic Corridor would be fully operationalized in year 2023.

NATIONAL HIGHWAY AUTHORITY
Construction of 6-Lane Motorway (Sukkur - Multan) 392 Kms - KLM

TOTAL TRAFFIC (Pairing+Directed+Generated)

	Year	Pairing	Directed	Generated	Pairing	Directed	Generated	Pairing	Directed	Generated	Total ADT
Construction Period	2016										
	2017										
	2018										
1	2019	4635	1019	518	526	2043	1927	2916	285	1008	14876
2	2020	4797	1055	538	547	2125	2004	3032	296	1048	15443
3	2021	4965	1092	560	569	2210	2084	3154	308	1090	16031
4	2022	5139	1130	582	591	2298	2168	3280	320	1134	16642
5	2023	5319	1169	605	621	2471	2330	3266	2050	1219	22050
6	2024	5505	1210	630	652	2656	2505	6708	2187	1310	23363
7	2025	5698	1253	655	685	2855	2693	7182	2333	1409	24761
8	2026	5897	1296	681	719	3069	2895	7690	2489	1514	26250
9	2027	6104	1342	708	755	3299	3112	8233	2655	1628	27835
10	2028	6317	1389	737	792	3547	3345	8816	2832	1750	29524
11	2029	6538	1437	766	832	3813	3596	9439	3021	1881	31324
12	2030	6767	1488	797	874	4099	3866	10107	3223	2022	33242
13	2031	7004	1540	829	917	4406	4156	10823	3438	2174	35286
14	2032	7249	1594	862	963	4737	4468	11589	3667	2337	37465
15	2033	7503	1649	896	1011	5092	4803	12410	3912	2512	39789
16	2034	7765	1707	932	1062	5474	5163	13289	4174	2701	42267
17	2035	8037	1767	969	1115	5884	5550	14231	4453	2903	44910
18	2036	8319	1829	1008	1171	6326	5966	15240	4750	3121	47729
19	2037	8610	1893	1048	1229	6800	6414	16321	5068	3355	50738
20	2038	8911	1959	1090	1291	7310	6895	17479	5407	3607	53948
21	2039	9223	2028	1134	1355	7858	7412	18719	5768	3877	57375
22	2040	9546	2098	1179	1423	8448	7968	20048	6154	4168	61032
23	2041	9880	2172	1227	1494	9081	8565	21472	6566	4480	64938
24	2042	10226	2248	1276	1569	9762	9208	22997	7006	4816	69107
25	2043	10584	2327	1327	1648	10494	9898	24631	7474	5178	73561