

3. Risk Factors

The Company realizes the significance of the management of risks from business operations under the changes of internal and external factors affecting its operational results. Risk management is considered a key instrument for business administration to ensure efficient and effective achievements and promote its competitiveness, as well as a key factor of the Good Governance. The Company thus arranges for the systematic risk management, monitoring and measures to minimize risks continuously. The Board of Directors has appointed the Corporate Governance and Risk Management Committee for policy-level consideration on the adequacy and appropriateness, with the Management to supervise the overall risk management process of the organization and perform daily routine work on behalf of the Corporate Governance and Risk Management Committee to monitor, evaluate and prepare a report on risk management to the Board of Directors for information.

In addition, the Company has also prepared an annual risk management plan and a risk management handbook as guidelines in the operations, and regularly monitor, evaluate and review risks to be in line with the ever-changing internal and external circumstances, including a backup plan in case of emergency, in order to ensure prompt action in solving problems and coordination with relevant units at all times. The risk management policy of the Company is as follows:

1. To adopt a risk management process in accordance with international standards or practices to ensure the efficiency of risk management, implementation and development in the same direction on an enterprise level in line with the business operation policy of the Company.
2. To treat the risk management as part of work, significant decision-making regarding management, and strategic planning to achieve the specified objectives, goals, missions and vision of the Company.
3. To carry out a proactive risk management to manage risks which may result in the Company's loss of interests and opportunities.
4. To delegate a risk management as staff's responsibility at all levels and manage risks within their work units and the organization to contain risks at adequate and appropriate level.
5. To determine guidelines for prevention or reduction of risks at a level acceptable to the Company in order to formulate plans to manage and control risks to at an acceptable level. All work units must consider the justification of expenses or costs to implement risk management measures in comparison with expected benefits.
6. To efficiently communicate the risk management within the Company for staff's effective learning, development and compliance.
7. To prepare an annual risk management plan subject to consideration and approval of the Corporate Governance and Risk Management Committee in respect of sufficiency and appropriateness to the current business circumstances.
8. To regularly follow up and assess the results of risk management to make sure that the risk management is duly and properly conducted.

Risk factors which may materially affect the Company's business operations are as follows:

3.1 Systematic Risk

3.1.1 Risk from Business Operations under Agreements with Government Sector and Government Policy

Given that the Company operates its businesses under the relevant Concession Agreements subject to the supervision of the government agencies, namely, MRTA and EXAT, differences in the contractual parties' interpretations on terms and conditions of the Concession Agreement may arise in various matters, such as, revisions of toll or fare rates, consideration to extend the concession periods under the Concession Agreements and responsibility for costs under the Agreements, which may require a certain period of time to come to a solution, and may impact the Company's business operations.

In addition, the political uncertainty and changes in government administration from the political party in charge may result in changes in policies, relevant laws or regulations, that possibly affect consideration to extend the concession periods under the Concession Agreements or terms and conditions stated, thereby rendering EXAT or MRTA unable to perform its obligations under the relevant Agreements or may require the Company to proceed beyond those specified in the relevant Agreements or undertakings.

The Company's core revenue is tolls under the Second Stage Expressway Agreement, which its term of 30 years will end in February 2020. Despite the conditions of the Agreement specifying that prior to the termination of the contract term of 30 years, the Agreement may be renewed twice of 10 years each, subject to the conditions to be agreed upon between EXAT and the Company, the political uncertainty or changes in government policies may affect the consideration to renew the Agreement. In such case, if the Company is not granted approval for renewal of the Agreement, the Company will lose such toll revenue. To minimize such risk, the Company has already submitted an application for renewal of the Second Stage Expressway Agreement, which is currently pending the consideration of EXAT.

In addition, the Company will establish a joint operation system with the government agencies both at the administrative and operation levels, by sharing sufficient information to ensure good understanding towards each other, as well as closely and regularly monitoring the political situations and changes in policies. The Company will review the strategies and operation plans to be reasonably suitable to the situations and for their mutual interest in the long run.

3.1.2 Risk Relating to Revenues less than Projections

As the Company provides both expressway and metro services, therefore, the Company's core revenues are tolls and fares, which may be affected by several external factors beyond the Company's control, such as, metro network expansion, improved feeder systems, fare rates of other available alternative transit systems, road traffic congestion, oil prices, and growth of real estate and condominium projects as well as other businesses surrounding the metro routes, which would serve as people's destinations, etc., all of which will affect the volume of service users. In addition, the Company generates commercial development revenue, which may vary depending upon the local and overseas economic conditions, competition in advertising media and retail space lease business, as well as the progress in opening of retail shops in the stations, several factors of which are beyond the Company's control. Therefore, should the Company's revenues differ from study results or projections, it may affect the liquidity and serviceability management with respect to the existing financial obligations, such as, interest expenses, scheduled repayment of loans, operating expenses under the Agreements, as well as compensation for expressway site acquisition cost or remuneration payable to MRTA, etc.

To minimize such risk, the Company will establish a unit to closely monitor any impact which may affect the initial factors, and formulate appropriate strategies. In addition, the Company can limit potential impacts from risk factors, such as, oil prices, road traffic congestion, and fare rates of other available alternative transit systems, due to the Company's full services of expressways and metro, both of which are considered substitute products. With respect to the commercial development, the Company will develop new advertisement media to increase its commercial development revenue, such as, advertisement media management via the Passenger Information Display System (PIDs), platform billboards, and digital media, including its plans to develop more retail space.

3.1.3 Risks from Interest Rate and Foreign Exchange Rate Fluctuations

Given that the Company remains obliged to service interest-bearing liabilities to lenders, and plans for future investment in several projects, therefore, it may require a large amount of long-term loans. Thus, interest expenses are considered the significant expenditures for the Company. The increased interest rates on loans may affect the Company's operational results due to the fact that the interest cost in respect of the certain credit facility was at the floating interest rate, thereby exposing the Company to a risk from interest rate fluctuation or increase in the money market. However, the Company will manage such risk from interest rate fluctuation, by arranging for the loan structure, divided into loans at floating interest rates and loans at fixed interest rates including plans to issue debt instruments or debentures as suitable to the economic conditions and the Company's view of the future interest rates.

The Company issued the debentures at the fixed interest rate, in order to arrange for the loan structure to ensure appropriate proportion of loans at fixed interest rate and loans at floating interest rates, and to minimize risk from interest rate fluctuation.

In 2017, the Company issued additional debentures in the amount of Baht 5,000 Million, with a maturity of 5-7 years, at the fixed interest rate, in order to invest in projects and for use as working capital. As at the end of 2017, the debt ratio at the fixed interest rate was 78.38 percent.

In addition, the Company incurred expenses in foreign currencies, for example, maintenance cost of the M&E Equipment, and insurance premiums, part of which had to be paid in foreign currencies. Thus, should the Baht value depreciate, the Company's expenses will increase accordingly. However, the proportion of the expenses in foreign currencies is low. Moreover, the Company will set up a policy to minimize risk from exchange rate, such as, negotiations for reduction of foreign currency expenses and buying forward, etc.

3.1.4 Risk from Serious Accidents, Public Unrest, or Natural Perils

The Company's businesses of both construction and management of the expressways and metro are exposed to an event or external factor which results in an emergency, namely, peril, serious accident, earthquake and such events which may be caused by terrorism or sabotage as bombing and riot, including gathering of activities for inciting public unrest, which may cause the Company to suspend its services and lose its revenues. For this reason, the Company has set forth emergency plans in response to any events which may suddenly occur, for example, removal of various significant and essential M&E equipment in the management of the expressways for storage at the safe place, and arranges for staff training to ensure that the staff in charge will be able to immediately take actions to resolve such emergency, for instance, emergency drills of all relevant units inside and outside the Company by way of simulation of such various situations as emergency in the metro stations from bomb threat and bomb blast in the metro stations, train breakdown and stop inside the tunnel, fire in the rolling stock, metro stations or tunnel, etc., as well as establishes a unit for monitoring, alerting and coordinating with relevant agencies to prevent the occurrence of any serious accident and to be ready for rescue operations.

The Company has taken out insurance against property all risks, business interruption, public liability, and terrorism in respect of the metro service business.

3.1.5 Risk in respect of Personnel

As the government realizes the significance for solving problems on traveling and traffic in Bangkok by using the mass rapid transit system, it is thus expedited to expand the metro network and the connecting system to other transportation systems. Therefore, it is highly possible that there will be governmental organizations or private agencies operating the mass rapid transit system business which requires an increase in personnel having knowledge, expertise and skills in the rail business. As a result, it is likely that the Company's main personnel will be enticed away from the Company.

The risk from shortage of competent personnel is considered one of the Company's main risks, as they are key factor to drive our organization to success. The Company gives priority to the personnel risk management, starting from the nomination and selection of good and qualified personnel suitable for the Company; continuous staff training courses to improve knowledge, skills and abilities in various fields necessary for performance of work based on each staff's position and designated duties; encouragement of the staff morale; consideration of appropriate and fair remuneration and welfare; review and revisions of the operation process and work system to ensure readiness at all times, as well as preparation of succession plan, whereby the Company has prepared the succession plan and appointment of a working group comprising high-level executives to set up guidelines in the selection of staff to ensure the availability of personnel, both in the executive and supervisor levels, in order to prevent the risk from shortage of personnel having knowledge, expertise and technical skills for specific work. The Company has arranged for collection of the body of knowledge for specific work and extended the results to the knowledge management program, in order to continuously improve the work process.

3.2 Corporate Specific Risk

3.2.1 Risk from Legal Disputes

The Company and NECL have a total of 11 disputes with EXAT on different interpretation of several matters, such as, adjustment of toll rates and responsibility for costs under the Agreements. The disputes were referred to the Arbitral Tribunal in accordance with the dispute settlement procedures under the Agreements and in the Administrative Court, divided into the disputes that the Company and NECL referred to the dispute settlement proceedings under the Agreements and demanded for damages with the total amount until the date of submission of the disputes of approximately Baht 28,179.8 Million; and the disputes that EXAT submitted claims for damages with the total amount until the date of submission of the disputes of approximately Baht 1,589.2 Million.

Most of the major claims for high value damages are made by the Company from EXAT. Therefore, the decision should not materially have any negative risk towards the Company's operational results.

3.2.2 Risk from Return on Investments in Companies less than Projections

The Company may be exposed to a risk from return on investments in companies less than projections should the operational results of such companies whose shares were held by the Company not meet the projections. To minimize such risk, the Company will take into account the proportion of investments in companies in line with the Company's investment policy, which would enable the Company to participate in setting out policies and monitor the operations of the invested companies.

3.2.3 Risks Relating to Fluctuation of Cost of Rail Business

Costs of rail business comprise cost of fare and cost of train service, which are deemed the main expenditure of the Company's business operations, comprising repair and maintenance costs for the metro and civil infrastructure, public utility cost, personnel cost, and payment of remuneration from fare revenue.

As for the maintenance costs under the M&E contract, the Company's contract is in foreign and Baht currencies, subject to adjustment based on the Consumer Price Index as specified in the contract. Given the long-term contract, the Company will be then exposed to risk due to changes in such indices.

The public utility cost mainly comprises the cost of electricity used at the metro stations and for train operations. The cost of electricity may be adjusted according to the electricity rates of the Metropolitan Electricity Authority, which may result in the Company's increased cost.

Therefore, the Company's costs of rail business in respect of cost of fare box vary according to the aforesaid costs. However, in the past, the Company was able to effectively control its cost of fare box. Besides, the cost of fare box is mostly fixed cost, not varying directly according to the increased volume of passengers, provided that there is no material change in the volume of passengers to the extent that the Company is required to add the number of trains for service to enhance the capacity to accommodate the passengers.

In the MRT Purple Line Concession Agreement, the service fees for the O&M Services payable by MRTA to the Company are calculated and based on the projections of operating expenses estimated by the Company, whereby such service fees may be adjusted only based on the actual inflation rate and electricity charge rate under the method specified in the Concession Agreement. Therefore, profits from the Operation Service will vary according to the Company's ability to manage the actual costs and expenses to mirror the specified projections. Should the actual costs and expenses be different from the projections, the Company's operational results may be affected since the Company is not able to request compensation or increase the service fees from MRTA.

However, with the expertise and experience in management of the MRT Blue Line Project, the Company is confident in its ability to efficiently manage costs and expenses for operations to be close to the projections.

3.2.4 Risk from Work Operations of Expressway Construction and Management Business

The Company takes into account the risk from operations of expressway construction and management business which may be resulted from primary factors, i.e., personnel, work system, operation system and external factors, which cause error or insufficiency of work procedures, employees, work system or information technology system, including employees' fraud and events or external factors, which may give rise to monetary and non-monetary damage, namely, damage to reputation or security of the Company. Therefore, it is greatly necessary to have a thorough supervision system with due care. The Company has then arranged for a specific unit having duties to monitor and maintain the routes and toll collection system in accordance with the operation standards, which can be assured by the experience and expertise of staff in charge from all divisions, thereby leading to the quality and availability of efficient, complete and continued service.

In addition, the Company has also established the preventive measure for the significant structures of the expressway systems so as to be available for full-time service by way of drawing up a plan for inspection of the structures of both the Si Rat Expressway, the Udon Rattaya Expressway, and the Si Rat - Outer Ring Road Expressway to be in line with the inspection by JMI Pacific Co., Ltd., a designing company with expertise in structural inspection. The monitoring, surveillance and maintenance were conducted to ensure that there would be no impact on the use of the expressways. With respect to the toll collection, communication and traffic control systems, which are important to its operations, the Company has provided the preventive maintenance as well as the data backup system, the standby power system and the management of purchase of spare materials.

Moreover, the Company may be exposed to the risk from non-functional toll collection system equipment which may arise by various causes, such as, non-functional electrical system due to power outage from the Metropolitan Electricity Authority, error processing by the operating system or computer virus infection in the system which destroys data in the operating system, including data and information hacks, thereby causing damage to the system, etc. In this regard, the Company gives high priority to such risk management by arranging for power backup system, security system for access to significant systems by third parties, determination of authorization levels of access to information and equipment, and installation of virus scan software and data backup in the operating system to ensure instant substitution.

3.2.5 Risks from Engagement of Outsourced Experts as Main Contractors for Supply and Maintenance of the M&E Equipment

The Company has accepted the transfer of the agreement for procurement of the M&E Equipment and an agreement for maintenance of the M&E Equipment with main contractors, namely, Siemens Limited, Thailand, and Japan Transportation Technology (Thailand). Thus, in the event that such outsourced expert group, as such main contractors, is unable to provide services under the agreements to the Company or there is any change in the maintenance agreement, the Company's business operation may be affected.

According to a study of information from members in the international federations of public transport operators, e.g., UITP, APTA, NOVA Group of Metros, as well as advice from Lloyd's Register Rail, the Company's highly experienced consultant, it is possible to select and procure M&E Equipment from other manufacturers which will be compatible with its existing system. In this regard, the Company has a policy to develop the quality of its personnel to have sufficient capabilities in working with local and overseas equipment manufacturers and contractors in the maintenance and repair of the M&E Equipment and the rail system to improve its efficiency without reliance on the sole existing manufacturer.

3.2.6 Risk from Delayed Construction and Operation of the Projects

On March 31, 2017, the Company executed the Concession Agreement for the MRT Blue Line Extension Project with the Mass Rapid Transit Authority of Thailand (MRTA), whereby the Company shall have duties in supply, installation, and test run and commissioning of the M&E Systems for the MRT Blue Line Extension Project, provided that such M&E Systems shall be connected with those of the M.R.T. Chaloem Ratchamongkhon Line Project in order to provide the train operation service in phases as planned, namely, Phase 1: Bang Sue Station - Tao Poon Station, opened for service by August 15, 2017; Phase 2: Hua Lamphong Station - Lak Song Station, to be opened for service within 30 months (September 2019); and Phase 3: Tao Poon Station - Tha Phra Station, to be opened for service within 36 months (March 2020).

The Company then managed such risk by entering into an agreement engaging CH. Karnchang Public Company Limited as Project Manager, as well as for supply, installation, and test run and commissioning of the M&E Systems for the Project, Phase 1 of which, Bang Sue Station - Tao Poon Station, was completed and opened for service on August 11, 2017. At present, the risk from operation of the MRT Blue Line Project, Phase 1, no longer exists. There remains the risk from operation of Phases 2 and 3, which currently progresses as planned.

3.2.7 Risk in Financing the MRT Blue Line Project

In the operation of the MRT Blue Line Project, the Company requires investment in the amount of approximately Baht 22,000 Million. As for management of risk relating to source of funds, the Company will use funds from internal source, i.e., cash flow as a result of debt repayment from NECL in the amount of approximately Baht 6,000 Million, and the remainder will be derived from the external source by way of taking out loans from financial institutions or issuance of debentures. The Credit Facility Agreement for the MRT Blue Line Project has been executed in January 2018.

4. Property Used in Business Operations

4.1 Main Assets

As at December 31, 2017, the Company and its subsidiaries had main assets used in business operations, per the following :

Unit: Million Baht)

Class of Assets	Net Book Value
1. Building and equipment	360
2. Rights to operate completed expressway sectors	38,449
3. Rights to use sites for expressway construction	719
4. Intangible assets under the Concession Agreement for the MRT Blue Line Project	25,954
Total	65,482

The main assets of the Company and its subsidiaries as indicated above can be classified into class of assets and companies, per the following :

4.1.1 Building and Equipment

As at December 31, 2017, the book value of the building and equipment as per the consolidated financial statements of the Company and its subsidiaries were as follows:

(Unit: Million Baht)

Company	Net Book Value	Ownership	Encumbrance
The Company	315	Owner*	None
NECL	32	Owner**	None
BMN	13	Owner	None
Total	360		

Remarks: * This refers to building, construction improvement and certain structures of the Second Stage Expressway System. Despite the fact that the title to such building is owned by EXAT, the Company is granted the right to use such building to operate the Second Stage Expressway Project under the conditions as specified in the Agreement. The Company takes on lease of a building for use as its head office located at No. 587 Suttthisarnvinitchai Road, Dindaeng Subdistrict, Dindaeng District, Bangkok 10400. The lease is on a year by year basis at the rental rate of Baht 10,000 per month.

** NECL does not own any property, plant and equipment, but takes on lease of a building for use as its head office located at No. 587 Suttthisarnvinitchai Road, Dindaeng Subdistrict, Dindaeng District, Bangkok 10400. The lease is on a year by year basis at the rental rate of Baht 10,000 per month. NECL uses the Bang Pa-in - Pak Kret Expressway Control Center Building, which is part of the Bang Pa-in - Pak Kret Expressway Project, to supervise the operations. Despite the fact that the title to such building is owned by EXAT, NECL is granted the right to use such building to operate the Bang Pa-in - Pak Kret Expressway Project under the conditions as specified in the Agreement.