FICCI

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Gateway to the ASEAN
India's north east frontier



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Foreword

North east India, home to 45 million people and surrounded by 5300 kms of international borders could easily be India's portal to the east. Given its geographic position, the richness of resources and the increasing focus on engaging with the east, the region could very well become the new growth engine for the country.

In fact, during the early part of the previous century, the north east was at the forefront of economic and social development. The region was a net foreign exchange earner and had a per capita income higher than the national average. A seamless border with East Bengal and Burma, access to riverine and overland routes of communication ensured that the region had begun to emerge as a major hub of economic activity. All these changed when the country was partitioned in 1947 and the region was virtually sealed from almost all sides. While the narrowness of the 22-km link with mainland India has proven to be a stumbling block for development, we believe the long international border of over 5300 kms with countries such as Myanmar, Bhutan, Bangladesh and China can be turned to advantage for the region.

Over the course of the last two years, the North East Advisory Council of FICCI has deliberated at length about the idea of connecting the region. We have consulted a cross-section of people from the government, businessmen, professionals in the north east and in our neighbouring countries. While our belief in the potential of the region has grown stronger, it has also become apparent that the most critical part is to restore the connectivity linkages.

Some of the key ideas envisaged in the report include the development of a seamless river transport system, a 4000-km-long ring road connecting all the north eastern states, development of an economic corridor connecting north east India with Myanmar and Bangladesh, 53 development nodes, border townships, development of a railway network, a number of new airports, etc.

We are hopeful that the North East Connectivity Summit will help refine and transform some of these ideas into reality. We are happy to have PricewaterhouseCoopers as our knowledge partner for the summit. This FICCI-PwC report will serve as a good reference point for the discussions on all connectivity related issues pertaining to the north east. We would be glad to play a facilitating role by connecting stakeholders in the state governments, central government, business and various social groups, to help achieve the objective of seamless connectivity.



Ranjit Barthakur
Chairman
FICCI, North East Advisory Council

Message

In the six and a half decades since Independence, India has made great strides in many areas of human endeavour and is today well on its way to becoming one of the leading nations of the 21st century. While we have seen substantial economic progress in the last two decades or so, the fruits of development could not always be distributed equitably to all parts of the country and some areas like the north eastern states have lagged behind.

Given its geographic position, long international borders, proximity with the ASEAN countries and its rich resources, the north east has great potential to become a hub of economic activity and trade for India and the sub region. We believe that the north east could be transformed into an economic corridor connecting India, Myanmar, Bangladesh and ASEAN. The benefits of such a transformation would be multifaceted, impacting not only India but the entire sub region, and would pave the way for the integration of India's north east with the world economy.

Admittedly, this is no mean task and calls for massive investments in connectivity infrastructure–roads, railways, airports, inland waterways, etc. apart from other enablers such as industrial infrastructure and basics such as skill development, education and healthcare.

This report makes an attempt to highlight the connectivity needs of the region and the opportunities the region represents.

I hope the report serves as a clarion call for all stakeholders in India to move beyond the limitations of the present and work towards realising the very real potential for transformation that the future holds.



Dr A Didar Singh
Secretary General
FICCI

Preface

The north east region of India comprising Arunachal Pradesh, Assam, Meghalaya, Tripura, Mizoram, Sikkim, Manipur and Nagaland constitutes 8% of India's geographical area. The region is blessed with rich natural resources and accounts for 34% of the country's water resources. It possesses almost 40% of India's hydro power potential.

But despite being blessed with a fairly wide resource base, the region remains among the most under-developed areas in the country. Partition of the country resulting in the formation of Bangladesh has turned the region into a landlocked territory, with just a 22-km wide connecting link called the Chicken's Neck (through Siliguri) with the rest of India.

The region shares international borders with China, Myanmar, Bangladesh and Bhutan summing up to a total length of 4,500 km. India and these countries constitute a market of about 2.81 billion people which is roughly 40% of the world population and due to its geographical location, the north east of India has the potential of transforming into an economic hub.

India's trade with its neighbouring countries such as Nepal, Bhutan, Bangladesh, Cambodia, Lao PDR, Myanmar, Thailand and Vietnam has grown from ~ 81, 385 crore INR in 2009-10 to ~ 184,687 crore INR in 2013-14 at a CAGR of 23%. But despite the region's geographical proximity to these countries, the share of north east India in this trade has been consistently hovering in the range of 1 to 2% while contributing only 5% of the total exports to Bangladesh, Myanmar and Bhutan.

This shows that most of the trade between India and its eastern neighbours is happening from industries in regions other than the north east. From the perspective of geographical location and cost savings, it makes more sense for these industries (at least for those industries which raw material base is present in the region) to locate themselves in north east India.

The region is currently lacking in adequate infrastructure and requires significant investment. Along with physical infrastructure development, policy interventions in the areas of decentralisation, facilitation of border trade, promotion of local industries and entrepreneurs, capacity building, taxation and exchange rate reforms need to be worked out for developing the north east into an economic hub.

This paper attempts to map the above requirements across critical infrastructure sectors as we wish to elicit discussions around the interventions required to realise the true potential of the north east.



Manish R Sharma
Leader, Capital Markets and Infrastructure
PwC India

Introduction

Stretched far across the eastern arm of India, the eight states of Arunachal Pradesh, Assam, Meghalaya, Tripura, Mizoram, Sikkim, Manipur and Nagaland are the most unique part of India. These states with a total area of 2,62,179 sq km, occupy about 8% of India's total geographical area. The region is bestowed with rich natural resources, which bring in a key ingredient for development. Forest cover is about 52% of the total area.

Most of the states have a good mineral resource base and water is also present aplenty. With two major rivers, Brahmaputra and Barak, flowing through the region, the north east accounts for about 34% of the country's water resources and possesses almost 40% of India's hydro power potential. Along with the availability of varied natural resources, the region has a fair amount of diversity in its population. With a total population of around 40 million people (which is about 4% of India's total population), the north east is home to over 200 ethnic groups.

Before Independence, this region was among the most industrially developed regions in the country. The industrial sector was based mostly on the rich resource endowments of the region. Tea plantation and tea manufacturing, plywood manufacturing, coal mining and oil refining were some of the prominent industry segments. Furthermore, the British set up one of their earliest railway lines in the region which ran between Dibrugarh and Chittagong. Transport through railways, roads and inland waterways remained fairly developed and enabled trade, both within the region and outside.

However, today after six decades of independence and even with a fairly wide resource base, the region remains among the most underdeveloped areas in the country. The state of affairs at the time of Independence left the region completely aloof from the rest of India. Due to Partition, the region was turned into a landlocked territory, with just a 22-km connecting link (through Siliguri) with the rest of India.

Most of the boundary of the region is an international border shared with China, Bhutan, Myanmar, Bangladesh and Nepal. This had an adverse impact on the industry and trade from the region. Additionally, undertaking any development in the region has been challenging due to difficult topography and political divisions.

Given this history of difficult circumstances, the states in the region have been granted the status of 'special category'. In order to meet their developmental expenditures, these states receive support from the central government under various schemes. Since the late 1990s, the government of India has been making concerted efforts for the economic development of the north east. Apart from substantial investments in infrastructure, a special package of incentives aimed at industrial development was announced in 1997. This was followed by the more comprehensive North East Industrial and Investment Promotion Policy in 2007.

Despite special assistance schemes of the government, the states in this region have largely remained laggard in comparison to the other states of the country. They have registered an annual average growth rate of 6.9% since 2005-06, which is below the national average of almost 8%. In 2004-05, the region's contribution to the overall national GDP was about 3% but now stands at mere 2.66% (in 2011-12).

Further, there have been wide disparities in growth recorded across the eight states. Some states such as Meghalaya, Mizoram and Tripura have grown in sync with the overall

GDP growth of the country. However, others such as Manipur, Assam and Nagaland have seen only moderate growth. This differential in economic performance is also reflected in the per capita income of the states. Per capita income in Arunachal Pradesh, Meghalaya and Sikkim have exceeded the all-India average level but others such as Assam, Manipur and Mizoram have per capita income much below the average for India. Sector-wise analysis shows that agriculture still remains a predominant economic activity in the north east employing a majority of the population. Though the contribution of agriculture to the GDP for the region has fallen from 20.9% in 2004-05 to 17.2% in 2011-12, it is still relatively high in comparison with the national figures.

Average annual growth rate over the period 2005-06 to 2011-12 (in %)

	Agriculture	Industry	Manufacturing	Services
Arunachal Pradesh	8.3	8.0	8.6	10.5
Assam	3.4	2.5	1.8	8.9
Manipur	7.6	4.4	6.9	6.6
Meghalaya	2.6	10.1	25.6	8.8
Mizoram	10.4	12.7	8.3	9.6
Nagaland	3.3	11.2	15.5	8.0
Sikkim	4.2	37.1	190.0	9.4
Tripura	4.8	9.4	5.3	8.3
NER	**4.0**	**6.0**	**6.9**	**8.7**

Source: Central Statistical Organisation

Industry and services contribute over 25% and over 50% respectively in the region's GDP. The manufacturing sector registered an annual average growth of 6.9% during 2005-06 to 2011-12, as against 9% average growth registered for India as a whole. Further, the contribution of the manufacturing output from the region to the total manufacturing output of the country is low at around 1.2%.

There has not been much growth in large-scale industries and the industrial sector in the region primarily consists of small and medium enterprises. Most of the large industries are based in Assam and are in sectors such as refining, cement, chemical and fertilisers, paper and paper products. Also food processing is one of the fastest growing segments in the region.

Detailed studies on the north east region, assessing major impediments to industrial growth in the region reveal that industrial units in the region face constraints in the form of land acquisition, availability of power, transport and logistics, credit disbursal, skilled labour, marketing and taxation issues.

Accordingly, three fundamental areas that need to be focussed on for the development of the north east are economic, ecological and social development. The primary hurdle to development in all the three fronts is the lack of adequate infrastructure. Lack of physical and industrial infrastructure facilities have been a significant roadblock for the small and medium enterprises in the region as it impacts both the movement of goods and people in the region. It is therefore imperative that the primary developmental focus be on infrastructure.

The region is strategically placed to act as a land bridge between mainland India and the ASEAN countries because of its geographical connect. The proposed infrastructure projects such as Asian Highway 1 and 2, connecting Asian countries, will pass through the NE region of India. Hence, there lies a great opportunity for increasing India's trade with ASEAN and other border countries, which can be fruitfully exploited by creating world-class infrastructure for transport, logistics, processing and value addition.

Accordingly, there is an urgent need for not only augmenting international trade with the NE region acting as a major gateway, but also the development of key infrastructure in the region.

PwC India and the Federation of Indian Chambers of Commerce and Industry (FICCI) have prepared this knowledge paper to elicit discussions around the potential of overall trade and commerce from the region and the necessary physical and policy interventions required to meet this objective.

The macroeconomic scenario

India has emerged as one of the world's most attractive investment destinations. The opening-up of FDI in several sectors of the country and the relaxation of norms by the government has attracted several foreign investors, competing for greater share in the Indian market.

According to a World Bank report, India currently holds 6.4% share of the global GDP on purchasing power parity basis. The prospects of the industrial sector in the country looks positive, as industrial production grew at a 13-month high rate of 3.4% in April 2014[1], mostly driven by electricity generation and manufacturing, as indicated by the Index of Industrial Production (IIP). In the forthcoming years, automotive, technology, life sciences and consumer products sectors are expected to grow.

Exports posted double digit growth in May 2014, as the shipment of key commodities experienced a significant increase. By 2030 India is expected to become the world's third largest economy.

According to a recent study by international consulting firms, private wealth in India is expected to increase by 150% in total from 2 trillion USD in 2013 to 5 trillion USD by 2018, thereby making it the world's seventh largest nation in terms of private wealth.

2.1. Economic affairs in the ASEAN countries

The ASEAN bloc comprising 10 countries has an aggregated economic size of 2.3 trillion USD[2]. It is the third pillar of growth in Asia after China and India, with a GDP growth rate of 6% per annum over the last 15 years.

The region seeks to achieve a single market and production base through an ambitious integration effort to facilitate higher mobility of labour and capital within the region and will also promote connections with the key economies in the region, including India. Projects to increase and improve connectivity, communication and IT networks are already in the pipeline.

The ASEAN bloc's annual real GDP growth is expected to reach around 6% in the next five years. The emerging middle class will also fuel the growth in consumption in the region.

Economies of ASEAN, India and China



Source: IMF, DB Research

India (2012)	
Real GDP growth rate	4%
Nominal GDP (USD)	1.8 trillion
GDP per capita (USD)	1,492
Population	1,223

China (2012)	
Real GDP growth rate	7.80%
Nominal GDP (USD)	8.3 trillion
GDP per capita (USD)	6,076
Population	1,354

ASEAN (2012)	
Real GDP growth rate	5.40%
Nominal GDP (USD)	2.3 trillion
GDP per capita (USD)	3,745
Population	616

1 *Indian Economic Overview, India Brand Equity Foundation*
2 *ASEAN Economic Community (AEC), Deutsche Bank*

2.2. Potential of trade between India and ASEAN countries plus China, Nepal, Bhutan and Bangladesh

The bilateral trade between India and the ASEAN countries along with China, Nepal, Bhutan and Bangladesh has been estimated at ~ 152 billion USD during 2013–14.

It has been forecast that India's bilateral trade with ASEAN countries, China, Bhutan, Nepal and Bangladesh will cross 1000 billion USD by 2035.

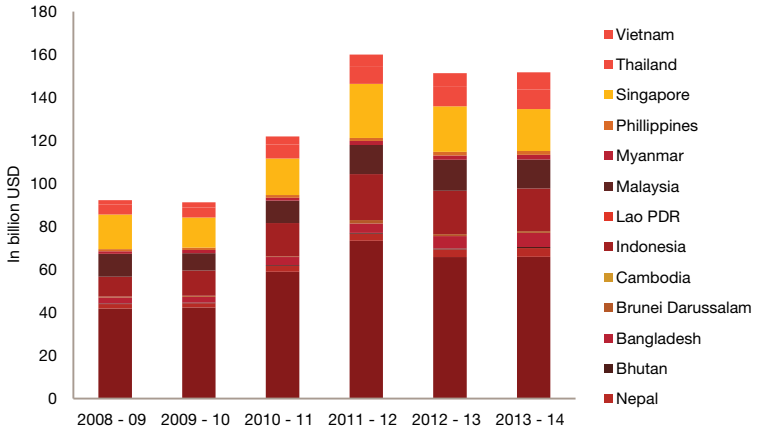
2.3. Potential for the north east

The region shares international borders with China in the north, Myanmar in the east, Bangladesh in the south west and Bhutan to the north west. While the inadequate land connectivity with the rest of India has been a hurdle, the region's long international border of more than 4,500 km in length can be a great advantage and has the potential to transform the region. India and the countries that share borders with the north east constitute a market of about 2.81 billion people which is roughly 40% of the world population.

With 98% of north east India's periphery as international borders, the region has the potential of transforming into a principal gateway to international trade.

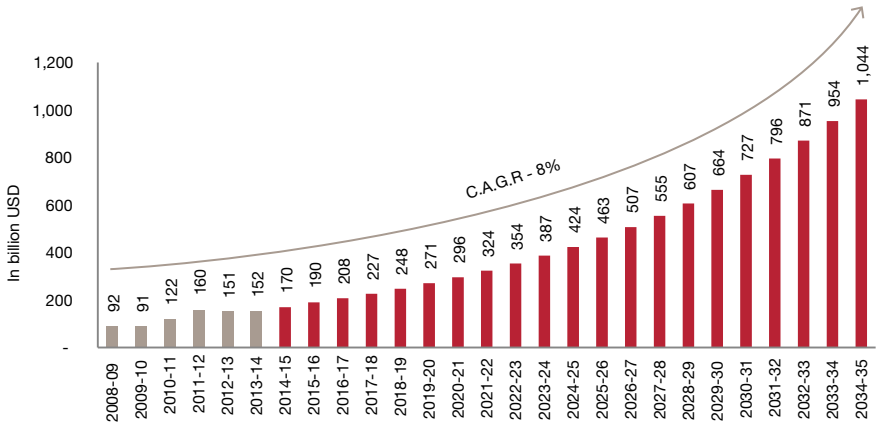
India's trade with Nepal, Bhutan, Bangladesh, Cambodia, Lao PDR, Myanmar, Thailand and Vietnam has grown from ~ 81, 385 crore INR in 2009-10 to ~ 184,687 crore INR in 2013-14 at a CAGR of 23%.

India's bilateral trade with ASEAN + 4 countries



Source: Import-Export Databank, Ministry of Commerce, Government of India

Forecast of India's bilateral trade with ASEAN + 4 countries



Source: Import-Export Databank, Ministry of Commerce, Government of India

India's trade with its eastern neighbours (in crore INR)

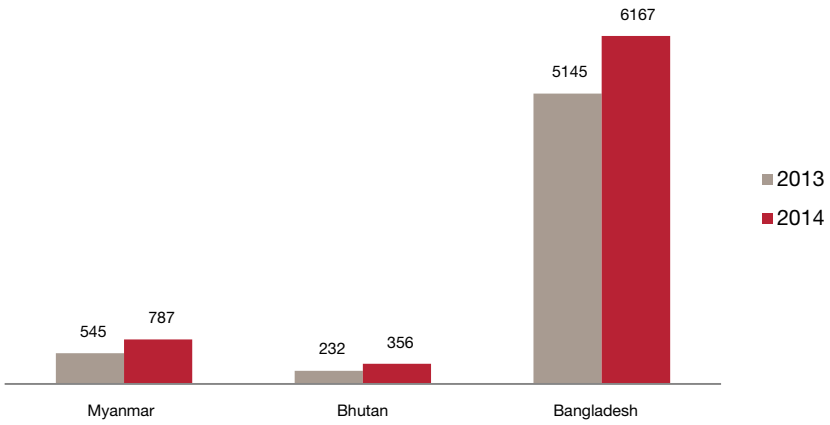
	2010	2011	2012	2013	2014	CAGR
Nepal	11,916	16,089	19,629	21,792	24,696	20%
Bhutan	1,632	2,266	2,594	2,383	2,927	16%
Bangladesh	16,131	22,138	26,250	34,706	39,599	25%
Cambodia	304	450	640	745	924	32%
Lao PDR	222	80	625	1,005	847	40%
Myanmar	8,987	8,030	11,559	11,744	13,082	10%
Thailand	28,030	39,278	49,469	54,515	54,407	18%
Vietnam	14,165	22,298	32,652	37,693	48,207	36%
Total	**81,385**	**110,628**	**143,419**	**164,583**	**184,687**	**23%**
North east trade	**1628**	**1154**	**1643**	**2118**	**2615**	**13%**
Percentage of NE trade to the total potential	**2%**	**1%**	**1%**	**1%**	**1%**	

Source: Import-Export Databank, Ministry of Commerce, Government of India

On the contrary, ***the share of the north east in this trade has been consistently hovering in the range of 1 to 2%;*** thereby suggesting the immense potential for augmentation of trade from the NE to these countries.

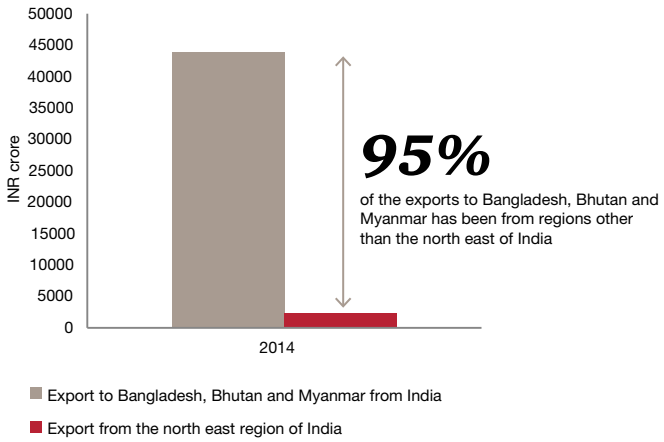
Given its geographical location, NE India needs to capture a much larger share of the growing trade between India and its eastern neighbours. The region needs to have larger influence in the trade with countries with which it shares its borders such as Bangladesh, Myanmar and Bhutan as these regions present a ready-to-serve market for the industrial base in the north east. For example, ***export from India to Myanmar, Bhutan and Bangladesh amounts to ~ 7,310 million USD , a significant market base for industries, if set up in the NE region.***

India's export to Myanmar, Bhutan and Bangladesh (in million USD)



Source: Import-Export Databank, Ministry of Commerce, Government of India

Comparison between NE and other regions of India in % share of exports to Bangladesh, Bhutan and Myanmar



Source: Import-Export Databank, Ministry of Commerce, Government of India

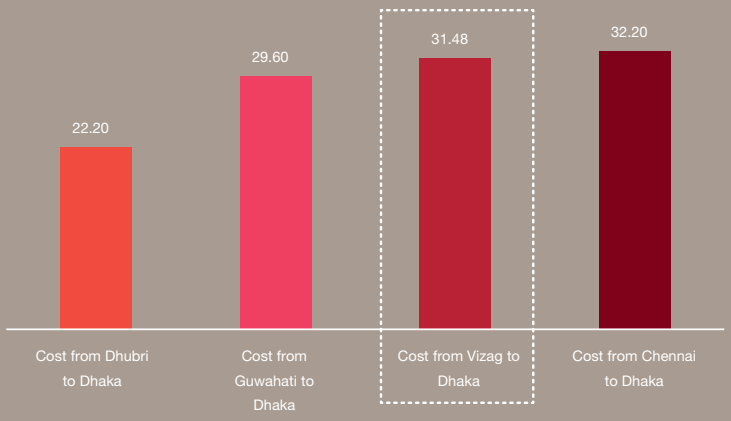
2.3.1. Why north east: A logistics cost perspective

From the above analysis, it is evident that around 95% of the total export to countries such as Bangladesh, Bhutan and Myanmar and around 99% of the total trade with these countries is happening from regions other than the north east. Alongside, from the perspective of geographical locations, industry will save significant logistics costs, if they set up shop in the NE region.

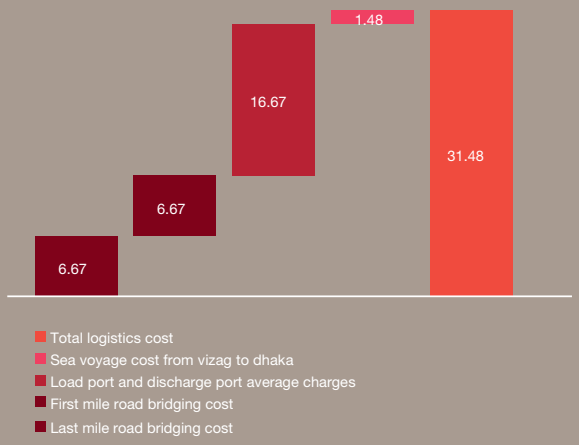
Similar savings may be observed for Myanmar and these vary in the range of 7 to 32 USD per MT depending upon the O-D pair, rendering industries in the NE region at an advantageous position to serve the markets of Bangladesh, Bhutan and Myanmar vis-à-vis industries in mainland India.



Comparison of total logistics cost in USD per MT

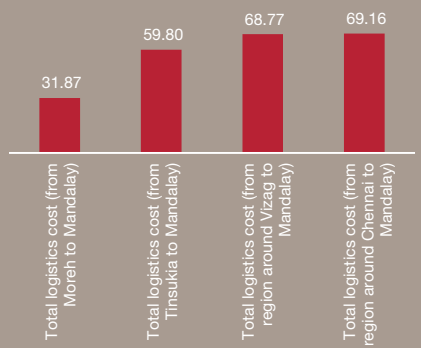


Break-up of total logistics cost (Vizag to Dhaka) in USD per MT



Source: Searates.com, Platou Research Singapore, Bunker World and PwC analysis[3]

Total logistics cost in USD per MT



3 The above savings may vary from location to location, change in ports, bunker prices, charter rates of the sea vessels, diesel prices that influence the road connectivity, etc.

2.3.2. Assessment of trade potential

There is a huge potential of trade with Bangladesh. World Bank statistics on India's trade status with Bangladesh points out the following interesting facts:

- Over 15% of Bangladeshi imports come from India.
- Bangladeshi exports to India receive tariff concessions (under South Asia Free Trade Area).
- Illegal trade between the two countries amounts to three-fourth of the regular trade.

Against this backdrop, popular argument in support of strengthening economic ties with Bangladesh has been that closer ties will be mutually beneficial. Tripura, Meghalaya, Mizoram and Assam share a 1880-km-long border with Bangladesh, and a large number of people reside right beside the border. Bangladesh needs the north east market to sell its products. Importing goods from Bangladesh will also be cheaper than products brought in to the region from other parts of the country. This will implicitly impact the lives of the people of the region as the cost of living will come down substantially.

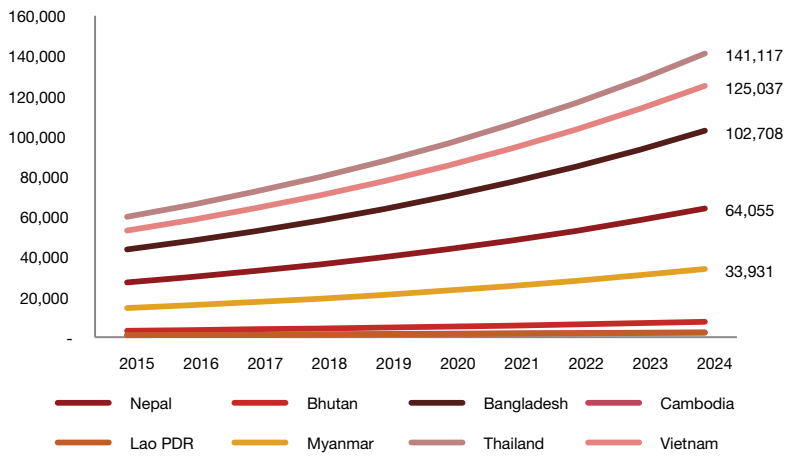
There is the potential to utilise the substantial refining capacity in the north east by importing crude from neighbouring countries such as Myanmar which have rich petroleum and gas reserves. There are four refineries in the state of Assam with a total refining capacity of ~ 7 million tonnes of crude annually. If these refineries are operated near capacity, the region will have sufficient surplus of refinery products for export.

The refined petroleum products could then be exported back to Myanmar, where energy needs are growing rapidly. Already, an informal trade of kerosene exists between the north east and Myanmar. It can be formalised with kerosene and other refinery products exported to Myanmar. Exporting these products to neighbouring countries is a more economical proposition than transporting the products to mainland India.





Projected trade potential with neighbouring countries @ 10% YoY



Source: Import-Export Databank, Ministry of Commerce, Government of India

The demand for energy will rise with rapid economic development. Supply from Myanmar with rich deposits of natural gas will be a great advantage to the Indian economy. ONGC is already involved in the exploration of natural gas in Myanmar and pipelines can be laid through the NE region. The gas supply from Myanmar coupled with the Tripura gas reserves can be used for thermal power generation and other industrial uses in the region as well as in other parts of the country.

Given this backdrop and notwithstanding the fact that trade of India with the adjoining countries in the ASEAN region and Bangladesh, Bhutan and Nepal has been growing at a healthy rate, one may project the trade to grow at 10% CAGR for the next 10 years.

In order to assess the potential that the NE region may capture from this growing trade, three scenarios have been developed:

NE India has the trade potential of anywhere between 35,000 crore and 180,000 crore INR.

Having assessed the potential opportunity in the region, it is pertinent to understand the existing infrastructure scenario, challenges and development interventions required to realise the above potential.

Trade Potential Estimation

The region's % share of total trade with ->	Nepal	Bhutan	Bangladesh	Myanmar	Cambodia, Lao, Thailand and Vietnam	Trade potential of NE by 2023-24 (crore INR)
Scenario 1	30%	30%	10%	10%	0%	35,158
Scenario 2	50%	50%	20%	20%	10%	90,226
Scenario 3	80%	80%	50%	50%	20%	179,786

Source: PwC Analysis

Potential for north east India

3.1. Infrastructure in the region

3.1.1. Connectivity

The NE region is connected by rail and road with the rest of India only through the 22-km-wide Chicken's Neck (Siliguri Corridor). Lack of connectivity through Bangladesh has made connectivity between most parts of the region and mainland India rather difficult and circuitous. For example, the distance between Agartala and Kolkata through Bangladesh is only 457 km while through the Chicken Neck, the distance becomes 1650 km.



3.1.1.1. Roads

Road is an important mode of travel in hilly areas as other modes of travel are either too expensive or difficult. At present, the road infrastructure is relatively deficient in the region, although the region's road density per capita is significantly higher as compared to the rest of the country which is intuitive, given the low density of population and the hilly terrain of the region. The road length per unit area is higher only in Nagaland, Assam and Tripura. The percentage of surfaced road in the NE region is only 29% compared to the national average of 62%.

Road density in north east India

States	Road density/1000 sq km	Road density/1000 population
Arunachal	196.96	13.77
Assam	2936.51	7.83
Manipur	739.11	6.98
Meghalaya	438.67	3.89
Mizoram	292.11	6.35
Nagaland	1345.32	10.27
Sikkim	263.95	3.17
Tripura	3026.23	9.09
India	**965.73**	**2.77**

Source: 1 Material supplied by TRW, M/o Road Transport and Highways; 2 Annual Report, published by M/o Road Transport and Highways

Note: Excludes roads constructed under Jawahar Rozgar Yojna and Pradhan Mantri Gram Sadak Yojana

The total length of NHs in the region is 8,480 km and the states have 5,711 km of state highways (SHs) and 15,154 km of major district roads (MDRs). In most NE states, village and district roads are dominant. These roads are particularly important for facilitating intra state movement of people and freight.



3.1.1.2. Railways

The region has about 2,600 km of railway lines, but till today only two state capitals are connected by railway with most of the lines lying in the states of Assam and Tripura. While the railway ministry has announced major railway projects for the region as well as its intention to connect all state capitals of the region, most of the projects are running behind schedule.

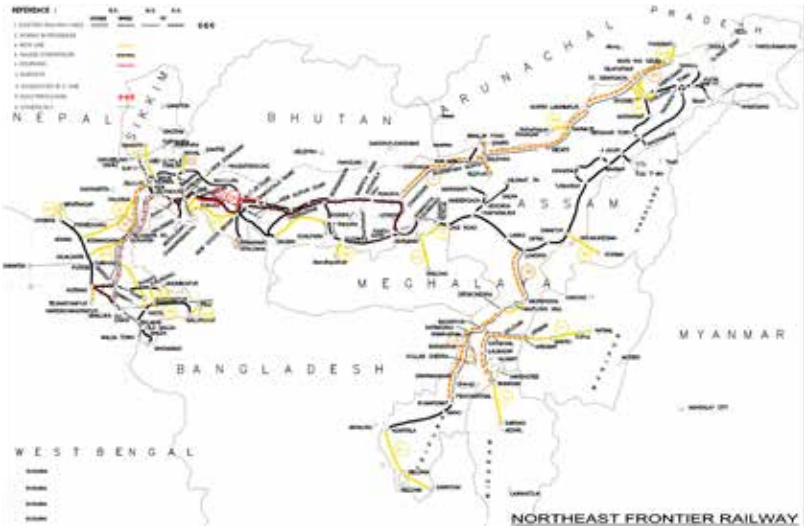
The hilly terrain of the region makes it difficult and expensive to set up rail networks in the region. This has led to absence or nominal presence of railway lines in the hilly states such as Arunachal Pradesh Manipur, Meghalaya and Mizoram.

Current status of railway network in north east India

States/UTs	Route (km)	Area (sq km)	Route km per 1,000 sq km
Arunachal Pradesh	1.26	83,743	0.02
Assam	2,283.71	78,438	29.11
Manipur	1.35	22,327	0.06
Meghalaya	0	22,429	0
Mizoram	1.5	21,081	0.07
Nagaland	12.85	16,579	0.78
Sikkim	0	7,096	0
Tripura	1,51.4	10,492	14.43
NER	**2,452.07**	**2,62,185**	**9.35**
India	64014.88	3287869	19.47

Source: Rajya Sabha Unstarred, Question No. 1467, dated on 6 August 2010

North east frontier railway map



Source: Indian Railways

3.1.1.3. Air

Although significant improvements are noticeable in air connectivity with mainland India, intra-regional air connectivity is still poor. In fact, the number of functioning airports in the region has reduced from 17 in the '70s to 11 at present.

The Lokpriya Gopinath Bordoloi International (LGBI) Airport in Guwahati, Assam, is the region's only international airport, During 2011-12, the Guwahati airport received 2.2 million passengers. Besides Guwahati, Assam has five other domestic airports in Tezpur, Jorhat, Dibrugarh, Silchar and North Lakhimpur. Mizoram has one operational airport with daily air connectivity, at Lengpui. The Shillong airport (Umroi) is fully operational, while the Baljek airport is under construction and up-gradation. In Sikkim, airport construction is underway in Pakyong. A greenfield airport has been proposed near Itanagar, environmental clearance for which was received in April 2010.

3.1.1.4. Inland water transport

Inland water transport can be a viable, cost-effective alternative in the plains of the region, given the high cost of expanding other modes of transportation. Major river routes in the region are the Brahmaputra and the Barak rivers in Assam which have been declared as National Waterways 2 and 6 respectively. In all, the region has about 3,839 km of navigable river routes.

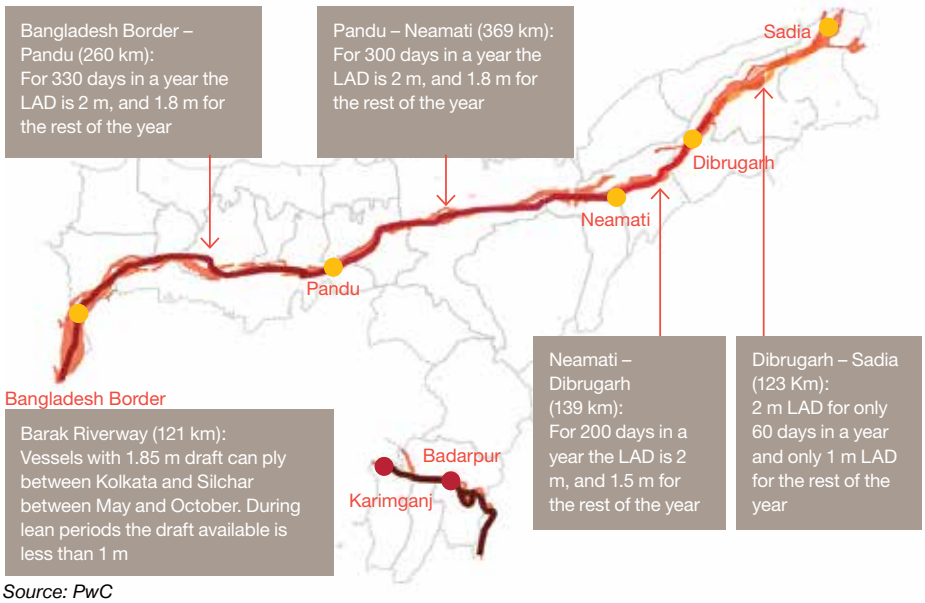
At present, both NW2 and NW6 lack adequate draft to support vessels with draft of 2 metres or more for most part of the year.

There is a need for significant capital dredging and development of permanent river conservancy works on both the waterways. Moreover, night navigational facilities are only available in the stretch from Dhubri to Neamati, in NW2 and needs to be provided along the entire length of both the waterways.

In the entire region, there is only one IWT terminal (Pandu, Assam) which meets the minimum requisite criterion of a terminal.

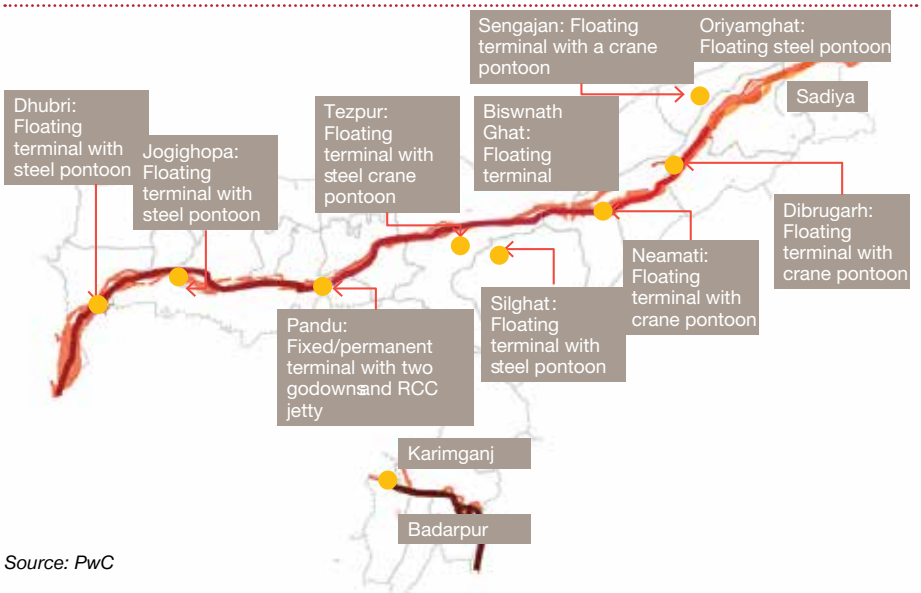
Significant investments will be required to develop the sector. In addition to developing the physical infrastructure, protocol route issues with Bangladesh need to be resolved.

Least available draft (LAD) in Brahmaputra and Barak rivers



Source: PwC

IWT terminals in Brahmaputra and Barak rivers



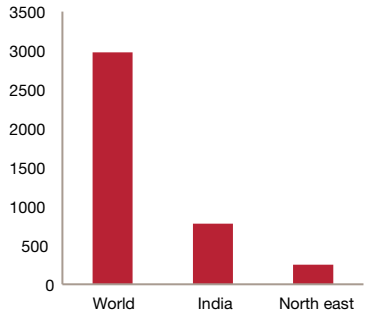
Source: PwC



3.1.2. Power

The north east has per capita power consumption of around 249 kWh which is low compared to the national average of 778 kWh. Despite low per capita power consumption and having great potential for power generation, the region still suffers from power shortages.

Per capita power consumption comparison among the world, India and the north east (2009 - 10)



Source: International Energy Agency

The region has a total installed capacity of around 2905MW and the requirement is around 2251MW. However, due to low plant load factor, the actual power available within the region is significantly lower at all times, thereby necessitating substantial imports. The situation is further aggravated by the fact that the capacity of transmission lines connecting the NE region with the eastern and northern grid is limited. The distribution capacity within the region also needs improvement.

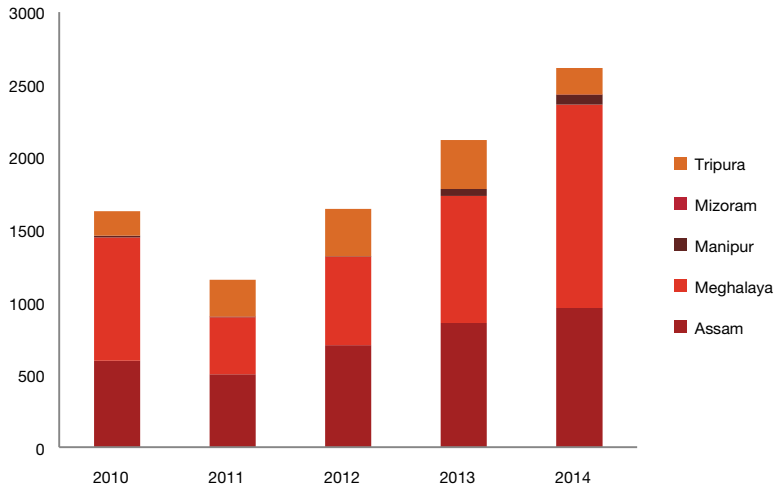
A comprehensive short-term, medium-term and long-term plan for the power sector is required to ensure that lack of power does not continue to impede development.

3.2. Economic conditions of and the trade activities in the region

At current prices, the GSDP of the region in 2012-13 was 240, 527 crore INR which was 3% of India's total GDP. The GSDP (at current prices) for the region is growing at an annual average rate of 13% on par with the national average annual rate of 15%. Assam contributes ~60% of the total GSDP of the region. This can be attributed to its relatively more developed infrastructure owing to its geographical advantage.

The overall trade involving NE India has grown from ~1,628 crore INR in 2009-10 to ~2,615 crore INR in 2013-14 at a CAGR of 13%, with exports from the region constituting a significant 89%. However the share of the region in trade between India and its eastern neighbour is only 1%.

Trend of total trade involving NE India (crore INR)



Source: PwC

The total trade between India and its immediate neighbours, Nepal, Bhutan, Bangladesh and Myanmar in 2013-14 was to the tune of ~80,303 crore INR, and has been growing at a CAGR of 20%, but despite sharing its border with these countries the share of the NE region of this trade was only 1 to 2%.

Despite its geographical and demographic advantage, the region's economic development has been lagging behind the rest of the country.

Potential sectors for development

The limited industrialisation that the region has so far seen has been centred around a few resource-based industries such as petroleum and natural gas, tea, coal, jute, forest products, some mineral based industries and some micro household industries such as handloom and handicrafts.

The organised sector includes tea, petroleum, paper, cement, plywood, coal, jute, sugar and a few others while the unorganised sector represents a majority of enterprises in the region and includes the handloom and handicrafts, small food processing units, etc. By far the most important industries in the region are the tea and petroleum industries.

The flow of trade in the NE region has therefore been witnessed around these commodities. With rich mineral bases, the region's exports have primarily been raw materials such as coal, limestone, bamboo, fruits and vegetables while it has been importing mostly finished products from neighbouring countries, especially Bangladesh.

Raw material driven exports from the NE region and finished product imports from neighbouring countries reflects the current complementary trade outlook in the region. However, the extent of the trade from the NE region forms only 1 to 2% of the total potential in the region.

Most of the imports in the region are for Tripura. These imports are primarily from Bangladesh and constitute mostly finished products. On the other hand, the exports from the region witnessed a relatively uniform trend with Meghalaya and Assam being the

Commodity-wise imports by NE states (2013-14) (crore INR)

Commodities	Assam	Manipur	Meghalaya	Mizoram	Tripura	Grand total
Cement	1.61	-	0.66	-	80.30	82.57
Betelnut	-	51.96	-	-	-	51.96
Broken or crushed stones	-	-	-	-	39.59	39.59
Dry fish	-	-	-	-	18.69	18.69
Extra natural alcohol	14.50	-	-	-	-	14.50
Misc. food items	13.41	-	-	-	-	13.41
Flavoured drinks	-	-	-	-	8.85	8.85
Food items	-	-	-	-	4.76	4.76
Plastic furniture	-	-	1.00	-	3.32	4.32
Plywood/ block board	3.61	-	-	-	-	3.61
Others	6.99	0.09	13.29	0.34	27.91	48.61
Grand total	40.11	52.05	14.94	0.34	183.41	290.85

Source: Office of the Commissioner of Customs, Shillong

Commodity-wise exports by NE states (2013-14) (crore INR)

Commodities	Assam	Manipur	Meghalaya	Grand total
Coal	35.67	-	1,044.51	1,080.18
Tea	704.53	-	-	704.53
Limestone	-	-	211.10	211.10
Boulder stone	4.44	-	113.02	117.45
High speed diesel oil	66.25	-	-	66.25
Insulated-gate-bipolar –transistor	66.12	-	-	66.12
Motor spirit	19.43	-	-	19.43
Rice	17.71	-	-	17.71
Wheat flour	-	10.89	-	10.89
Stone boulder	-	-	6.53	6.53
Limestone	0.01	-	5.37	5.38
Others	13.84	6.92	0.62	21.38
Grand total	927.99	17.81	1,381.16	2,326.96

Source: Office of the Commissioner of Customs, Shillong



largest exporting states.

Coal, tea, limestone and other minerals form the key export based commodities from the region. Most of the exports (with tea as an exception) are to countries such as Bangladesh, Myanmar, Bhutan and Nepal.

The above trend is not surprising, with the NE region being rich in mineral resources while 98% of its border is surrounded by the ASEAN region market, Bangladesh, Nepal, Bhutan and mainland India. Accordingly, it is pertinent to understand the extent of existing commodity-wise trade of India with adjoining countries such as Bangladesh, Myanmar and Bhutan and how much of this is being currently contributed by the NE region. A corollary to this analysis will also highlight the potential sectors that can be developed in the region.

In order to do such an analysis, commodity-wise import data of Bangladesh, Bhutan and Myanmar with India has been superimposed

Comparison of select commodity-wise exports of the NE region with total imports by Bangladesh, Myanmar and Bhutan from India (2013-14) (million USD)

	Export	Import			Percentage of the total trade potential catered by the north east (commodity wise)
	North east	Bangladesh	Bhutan	Myanmar	
Articles of apparel and clothing accessories, knitted or crocheted		17.10			0%
Articles of apparel and clothing accessories, not knitted or crocheted		78.97			0%
Beverages, spirits and vinegar		8.02			0%
Coffee, tea, mate and spices	117.42			4.68	2509%[4]
Copper and articles thereof		17.15	3.30		0%
Cotton		19.74			0%
Edible fruit and nuts; peel or citrus fruit or melons		56.78		9.69	0%
Edible vegetables and certain roots and tubers	0.53			624.13	0%
Fish and crustaceans, molluscs and other aquatic invertebrates	0.01	14.24			0%
Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, or radi. Elem. Or of isotopes.			26.46		0%
Iron and steel		9.57	97.88		0%
Knitted or crocheted fabrics		8.50			0%
Other made up textile articles; sets; worn clothing and worn textile articles; rags		48.18			0%
Other vegetable textile fibres; paper yarn and woven fabrics of paper yarn		83.30			0%
Plastic and articles thereof			6.11		0%
Raw hides and skins (other than fur skins) and leather	0.09	8.76			1%
Salt; sulphur; earths and stone; plastering materials, lime and cement	57.20	20.73	7.92		200% [5]
Wood and articles of wood; wood charcoal			3.12	748.74	0%

Source: Office of the Commissioner of Customs, Shillong, EXIM data bank, Ministry of Commerce, Government of India and PwC analysis

4 The percentage is high as tea is exported all around the world and not primarily restricted to the above analysed countries.

5 Minerals and its products are prominent exports from the NE region to areas other than Myanmar, Bhutan and Bangladesh.

with the corresponding export data from the NE region:

The highlighted rows in the above table indicate the areas that can be developed in the NE region. There is high potential as the primary demand for such products exists in the neighbouring countries. Currently, this demand is being fulfilled by the other regions in mainland India. To serve countries such as Bangladesh, Myanmar and Bhutan, industries located in the NE region will have a significant logistics cost advantage vis-à-vis industries located in other parts of India. It is equally important for the region to graduate up in the value chain by exporting semi-finished or finished products, rather than exporting raw materials. Together, this makes a compelling business case for setting up an industrial base in this region to meet and serve the demand of these neighbouring countries.

Creation of development nodes

The first step to attract industries to the region is to improve the industrial, transportation and support infrastructure. Currently, the region suffers from issues like poor roads and connectivity, inadequate power and storage facilities, insufficient number of custom clearance facilities, inefficiency in handling, etc. These issues are hindering the prospects of serious investments by industrial players in the region. Hence, we propose the setting up of development nodes at strategic locations along the transportation corridors and also the feeder corridors. It is proposed that 53 development nodes be set up across the region in tandem with the development of highways and railways. Further, 20 more nodes can be set up along the two major IWT routes of the Brahmaputra and Barak rivers.

The integration centres should be designed to provide the following:

- Logistics facilities for trade and movement of goods
- Travel amenities at par with international standards
- The nucleus for upscaling economic activities in the area
- An environment for economic development by the creation of multiple planned urban centres with modern amenities

The potential locations for development nodes are listed in the table below:

Once set up, the facilities will create alternative urban areas, decongest new cities, promote trade and business, and create job opportunities for people in the surrounding areas. These facilities will also make improved social infrastructure facilities accessible to rural population in the influence areas.

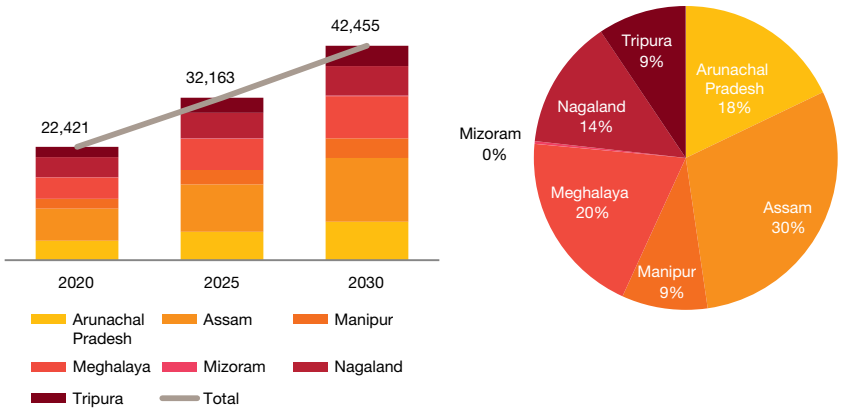
Infrastructure development along these development nodes is expected to bring in cumulative investments of 42,500 crore INR over the next 15 years. Around 70% of the investment is expected to be in Assam, Arunachal Pradesh and Meghalaya.

State	Locations	
Arunachal Pradesh	1. Bhalukpong	5. Tezu
	2. Bomdila	6. Daporizo
	3. Sela	7. Zero
	4. Pasighat	
Assam	8. Srirampur	16. Charduar
	9. Krishnai	17. Bokajan
	10. Bijni	18. Silonijan
	11. Darranga	19. Amguri
	12. Udalguri	20. Makum / Dumduma
	13. Sonapur	21. Kalain
	14. Balipara	22. Karimganj
	15. Koliabor	23. Jirighat
Manipur	24. Mao Gate	27. Oinamlong
	25. Palel	28. Churachandpur
	26. Ukhrul	
Meghalaya	29. Nongpoh	32. Baghmara
	30. Ladrymbai	33. Tura
	31. Nongstoin	34. Phulbari
Mizoram	35. Kolasib	38. Champhai
	36. Serchip	39. Saiha
	37. Lunglai	40. Mamit
Nagaland	41. Mokokchung	45. Wakching
	42. Piphema	46. Bhandari
	43. Wokha	47. Naginimara
	44. Tuensang	
Tripura	48. Dharmanagar	51. Bishalgarh
	49. Manu	52. Satirbazar
	50. Teliamura	53. Sabroom

Source: FICCI analysis

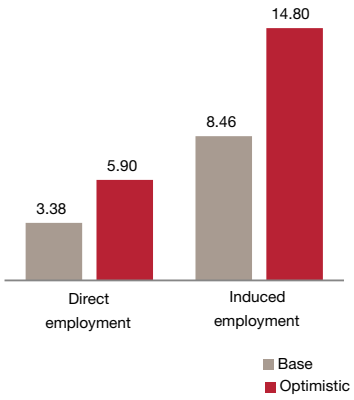
Development of the above nodes are expected to bring in cumulative investments of around 42,500 crore INR, with resultant direct employment in the range of 3.4 to 6 million over the next 15 years.

Investment in industries due to development of nodes (in crore INR; 2014 prices)



Source: Capex database and PwC analysis

Employment generation: Direct and induced (in millions)



Source: Economic Survey and PwC Analysis

The development resulting from this investment is expected to create direct employment in the range of 3.4 to 6 million, while the induced employment is expected to be in the range of 8.4 to 15 million over the next 15 years.

The identified nodes can be developed as 100-acre nodes with industrial townships. While 70% of the area will be allocated for industries, the remaining 30% will be used for developing social infrastructure. The cost of providing basic infrastructure such as power, water, internal roads, sewerage and drainage networks, street lights, effluent transmission and solid waste management has been estimated at 50 crore INR per 100 acres.

Investment for providing basic infra to development nodes

State	No. of nodes	Investment required (crore INR)
Assam	16	800
Arunachal Pradesh	7	350
Manipur	5	250
Meghalaya	6	300
Mizoram	6	300
Nagaland	7	350
Sikkim	NA	NA
Tripura	6	300
Total	53	2,650

Necessary infrastructure development

4.1. Integrated economic corridor connecting all the development nodes

An integrated economic corridor can be developed in north east India for exploiting the potential the region has to offer

To take advantage of the region's geographic location and speed up the evolving connectivity with Southeast Asia and the ASEAN countries, it is proposed that a north east frontier economic corridor should be developed. Economic corridors that connect economic agents along a defined geography could provide a vital boost to the pace of development in resource-rich regions such as the north east, where economic development has been slow.

Economic corridors provide connection between economic nodes or hubs, where a large amount of economic resources and actors are concentrated. They do not stand alone, as their role in regional economic development can be comprehended only in terms of the network effects that they induce. They link the supply and demand sides of the markets. To harness the full potential that could be unleashed by improved connectivity, it is proposed that an economic corridor along the primary route of connectivity from the west to the east, with a connection to the neighbouring countries, should be developed in the north east.

4.1.1. Project concept

The project could be developed around a system of two integrated transportation corridors running from the 'Chicken's Neck' area to Tinsukia in Assam and Sabroom in Tripura. A band of about 150 to 200 km on both sides of the freight corridor should be developed as the economic corridor, thereby including all north eastern states in the project influence area. In addition, feeder routes (rail and road connectivity) will need to be developed to connect the hinterland and production areas.

The proposed corridor would connect the region with the Asian Highway and the Trans-Asian Railway project, thereby connecting with markets in the ASEAN countries, Bangladesh, Bhutan and Nepal, apart from the large domestic market in mainland India.

The economic corridor will not only provide a structure for industrial development, but also facilitate development of important service sectors like tourism, healthcare and education, and further spur urban development.



Integrated transport corridor

The two transportation corridors will encompass four modes of transport, namely, roads, railways, airways and inland waterways (IWT) (through the Brahmaputra and Barak rivers). To ensure inclusive development in the region, existing networks will need to be strengthened and some new connectivity infrastructure will need to be created.

Apart from intraregional connectivity, the upcoming international connectivity projects like the Trilateral Highway, the Trans-Asian Railway Project and the Kaladan Multimodal Transit Transport Corridor will need to be expedited. Further, it will be essential to upgrade the road connectivity with Bhutan and Nepal and establish new linkages with Bangladesh.

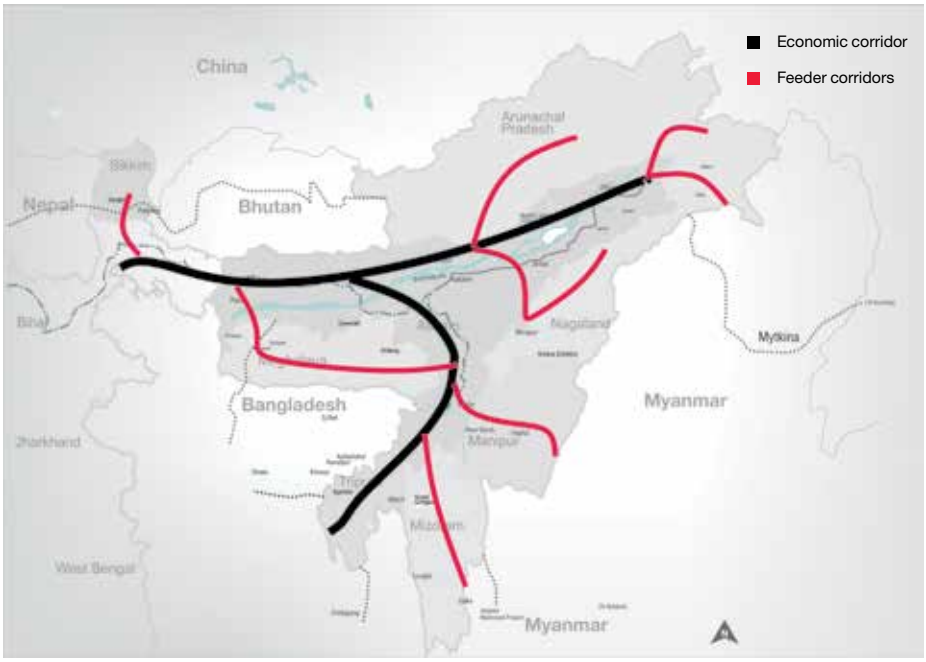
Industrial and economic development

To induce economic development in the region, the project will create integrated economic development nodes at strategic points to facilitate industrial development, enable tourism and create the structure for urban development by creating high-impact social infrastructure. The project will also facilitate the development of the power potential in the region.

The economic development nodes will be self-sustaining townships with highly developed connectivity (road, rail, air and IWT), reliable power and quality social infrastructure including healthcare and education. The townships will provide globally competitive environment for setting up and running businesses.

Based on availability of natural resources and market demand each node will be developed to focus on specific industrial and economic activity and facilities will be created accordingly. For example, a node at Bhalukpong could focus on tourism and facilities focused on the tourism industry like hotels, resorts, wayside amenities, recreation centre, etc could be created, while another node at Kharupetia could focus on food processing and create facilities necessary for the food processing industry.

Integrated transport corridor



4.1.2. Transport corridor

4.1.2.1. Roads

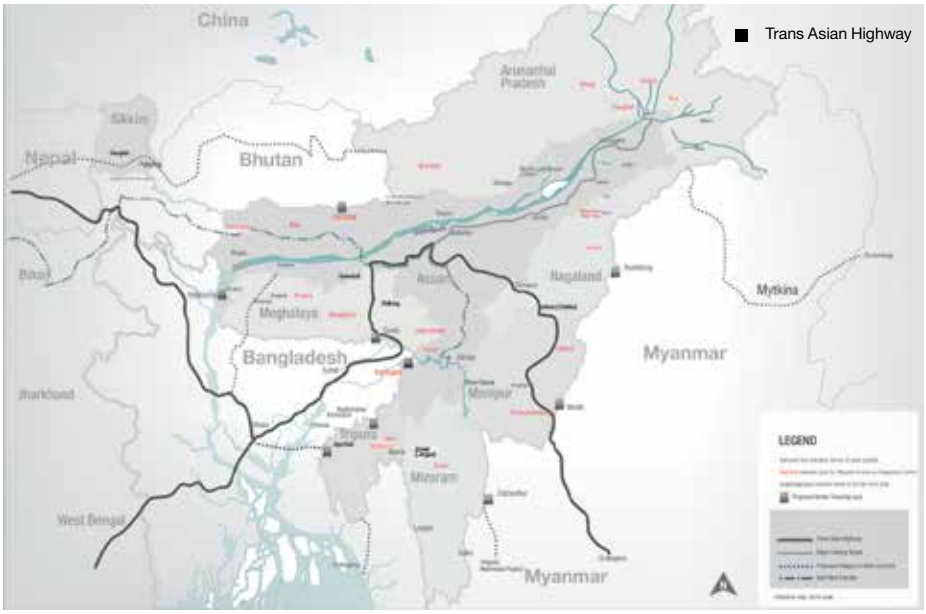
Asian Highway

The two Asian Highways will pass through the north east and will overlap with each other to effectively provide north east India connectivity with Bangladesh apart from Myanmar and other ASEAN countries. The highways will follow the alignment of NH39, NH36, NH37 and NH40.

Routes of Asian Highway 1 and 2

Highways	Routes
Asian Highway 1	Bangkok – Moreh – Imphal – Kohima – Dimapur – Nagaon – Jorabat – Shillong – Dawki – Tamabil – Sylhet – Katchpur – Dhaka – Petrapole – Barasat
Asian Highway 2	Bangkok – Moreh – Imphal – Kohima – Dimapur – Nagaon – Jorabat – Shillong – Dawki – Sylhet – Dhaka – Siliguri – Nepal

Trans Asian highway



However, to fully integrate the region with the Asian Highway, approximately 431 km of roads in the region that are Class III or below, which are on the Asian Highway will have to be upgraded to Class I.

Stretches of the Asian Highway in India and investment required for their enhancement

Estimated investments for developing the stretches of Asian Highway running through north east India

NH no.	Name of the state	Section	Length (km)	Estimated cost (crore INR)
NH 39	Nagaland	Kohima – Dimapur	81	1175
NH 36 & NH 37	Assam	Daboka – Nagaon – Jorabat	145	1192
NH 40	Meghalaya	Jorabat – Barapni – Shillong	80	800



The North East Ring Road

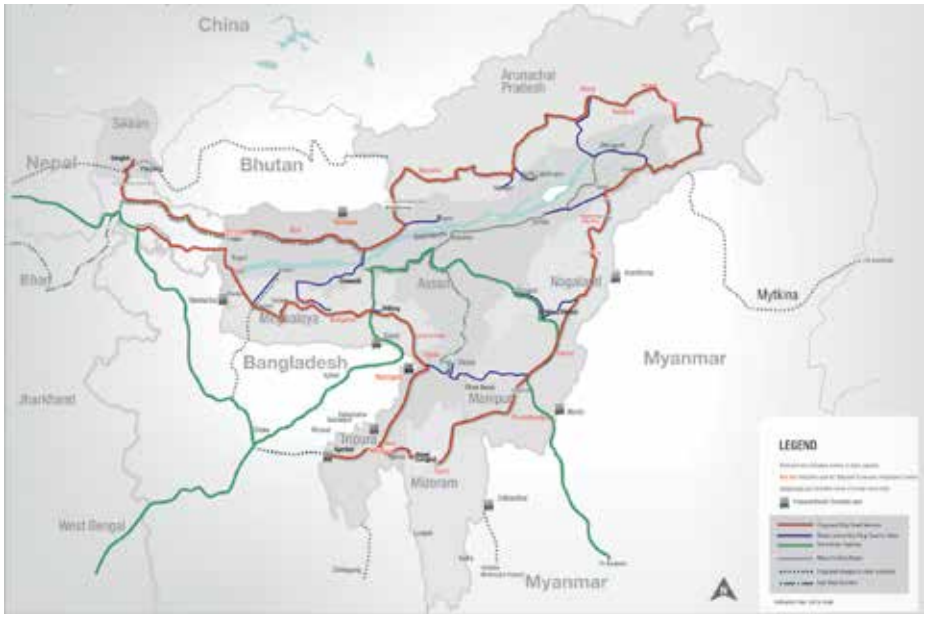
It is proposed that a ring road should be developed connecting all the north eastern states. The road would cover a distance of around 4,000 km and would mostly follow existing road alignments, except for a few small stretches.

The proposed route for the ring road is as follows:

Gangtok – Rangpo – Alipurduar – Srirampur – Bongaigaon – Nalbari – Udalguri – Arnatula Kalkatag Road – Chanditop – Seppa – Itanagar – Ziro – Along – Pasighat – Dambuk – Tezu – Wakro – Miao – Joypur – Sonari – Wakching – Mokokchung – Tuensang – Ukhrul – Imphal – Churachandpur – Darlawn- Tuiral – Aizwal – Mamit – Teliamura – Karimganj – Shillong – Nongstoin – Rongjeng – Phulbari – Dhubri

The road is proposed to be developed as a four-lane expressway. Except for a few stretches in Assam and West Bengal, the entire route will require substantial enhancement.

The North East Ring Road



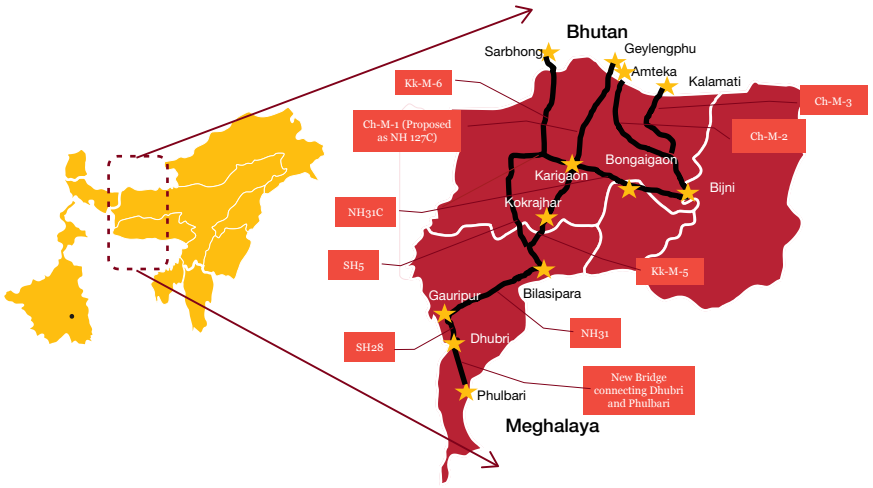
State-wise distribution of stretches in the proposed North East Ring Road

State	Particulars	Length for substantial development in the state (km)	Estimated cost (crore INR)
Arunachal Pradesh	From Bhairabkunda in Assam to Miao	1,330	19,285
Assam	From Nalbari to Bhairabkunda; from Jagun-Miao Road to Tizit; from Agartala-Shillong Road (Near Tripura-Assam border) to Dam Cherra Khasie Punjee; from Phulbari to Kochugaon Road, Dhubri	398	3,184
Nagaland	From Tizit Police Station, Tizit Town to Kohima-Meluri Road	404	5,858
Manipur	From Kohima-Meluri Road to Guite Road	420	3,780
Mizoram	From Guite Road to Aizawl-Mamit-Vanh-mun-Kumarghat Road	348	3,132
Tripura	From Aizawl-Mamit-Vanhmun-Kumar-ghat Road to Agartala-Shillong Road (Via Agartala)	286	2,574
Meghalaya	From Dam Cherra Khasie Punjee to NH127B	515	4,635
Sikkim	From Gangtok to Rangpo	38	551
West Bengal	From Rangpo border to Srirampur border	240	1,920
Total		3,979	

A network that provides Bhutan an access to Brahmaputra via the IWT terminal at Dhubri

The network will connect Bhutan to the IWT terminal in Dhubri and beyond to Bangladesh and Kolkata through the IWT mode. It will make the IWT terminal at Dhubri attractive for exporting goods to Bhutan. Trade between India and Bhutan stood at approximately 3,046 crore INR in 2013-14, and this network has the potential of influencing a portion of this trade movement as well as trade between Bhutan and Bangladesh, with the IWT terminal at Dhubri as the key node in the trade path to Bhutan.

Road network connecting Bhutan to the IWT terminal at Dhubri



Other major networks

Road	Total length (Approx, km)	Length of stretches in India
Bangkok – Mandalay – Moreh – Imphal – Silchar – Karimganj – Sylhet	2,345	500
Guwahati – Ledo – Myitkyina – Kunming (Stilwel Road)	2,243	516
Guwahati – Tura – Jamalpur – Dhaka – Petrapole – Kolkata	833	223
Aizwal – Silchar – Agartala – Sabroom – Chittagong	784	611
Aizwal – Champhai	180	188
Bomdila – Thimphu – Gangtok – Kathmandu – Patna	2,000	2,000
Total	6,392	

Investment required for development of necessary road networks

State	Asian Highway	North East Ring Road	Other major networks
Assam	1,192	3,184	11,416
Arunachal Pradesh		19,285	1,530
Manipur		3,780	970
Meghalaya	800	4,635	3,210
Mizoram		3,132	2,510
Nagaland	1,175	5,858	
Sikkim		551	3,320
Tripura		2,574	885

Apart from these core networks, a total investment of 3,06,052 crore INR has been envisaged for developing the entire road network, including national highways, state highways and major district roads in the region.

State-wise estimated investment for overhauling of entire road network (excluding rural roads)

State-wise estimated investment for overhauling of entire road network (excluding rural roads)	Investment required for overhualing of the entire network excluding rural roads (crore INR)[6]
Assam	1,30,000
Arunachal Pradesh	70,776
Manipur	23,682
Meghalaya	24,260
Mizoram	19,341
Nagaland	17,502
Sikkim	7,000
Tripura	16,020
Total	3,06,052

Based on our analysis of the road networks in the region, we have identified critical stretches which need to be prioritised and those which can be developed with relatively minimal expense. These stretches can be developed earlier.

Recommended short-, medium- and long-term development goals in the road sector in the region are given below.

Development goals for road sector

Short-term	Medium-term	Long-term
✓ Imphal – Silchar – Sylhet Road ✓ Agartala – Dhaka – Petrapole – Kolkata ✓ Aizwal – Silchar – Agartala – Sabroom – Chittagong ✓ Start work on North East Ring Road ✓ Network connecting Bhutan to the IWT terminal at Dhubri	✓ Guwahati – Ledo – Myitkyina –Kunming (Stilwel Road) ✓ Guwahati – Tura – Jamalpur – Dhaka – Petrapole – Kolkata ✓ All-weather roads connecting all villages	✓ Bomdila – Thimpu – Gangtok – Kathmandu – Patna ✓ Completing North East Ring Road

North east India: Existing and proposed connectivity



Source: FICCI

6 *The investment figures in the table are the average of the figures estimated based on the area and population ratios.*

4.1.2.2. Railways

The Trans-Asian Railway (TAR) would pass through north east India and will provide a cheaper mode of transportation between north east India, ASEAN and China. It would pass through Mandalay-Imphal-Jiribam-Silchar-Agartala-Dhaka. A 257-km railway route from Jawahar Nagar railway station in north Tripura to Kolasib in northern Mizoram and Myanmar's Darlon has been proposed to connect with the TAR network. If Tripura and Manipur are linked with the TAR network, the north eastern states would be the gateway to South East Asian countries. To benefit from the emerging situation, it will be important to boost intraregional rail connectivity. Also, the work on the Jiribam-Tupul-Imphal-Moreh (219 km) section within India must be expedited.

Railway connectivity through Bangladesh

The TAR will enter India at Moreh and after passing through Imphal, Jiribam and Silchar, the line is proposed to enter Bangladesh at Mahisashan near Karimganj and re-enter India at Gede. While the TAR will take time to fructify in its entirety, the connectivity with Bangladesh can be established with minimal investments. Steps should, therefore, be taken to re-establish the rail links with Bangladesh.

Railway connectivity to all state capitals

At present, only state capitals of Assam, Tripura and Arunachal Pradesh are connected by rail. Though Indian Railways has drawn up plans to connect the other state capitals as well, implementation is progressing at a slow pace. It is important that these lines be completed in a time-bound manner so that they can be an effective part of the proposed economic corridor.

New border railway line

It is proposed that a new railway line along the India–Myanmar Border connecting the states of Assam, Nagaland, Manipur and Mizoram be constructed. The line will link all the north eastern states with the TAR network. The two terminal stations for the line could be Tinsukia in Assam and Agartala in Tripura.

Other important railway projects

Some of the important railway lines that need to be completed in a time-bound manner are listed below.

Other important railway projects

Proposed lines	Approximate length (km)
Murkongselek – Pasighat	30
Gauge Conversion of Lumding Silchar- Jiribam and Badarpur Kumarghat The meter gauge line connecting Lumding with Silchar, Agartala and Jiribam is inadequate. Also for the TAR which will pass through Moreh, Imphal and Jiribam to become operational, it is important to complete the gauge conversion work.	368
Bogibeel bridge with linking lines between Dibrugarh and North Bank Line	73
Dudhnoi – MendiPathar	11.75
Tetelia to Shillong This line will put Meghalaya into the railway map of India. The line may later be expanded to Dawki and other parts of Meghalaya including the Garo Hills.	130
Bhairabi to Sairang This line will effectively include Mizoram in the railway map.	52
Jiribam Imphal Railway Line Early completion of this line is critical for development of the land-locked state of Manipur.	125
Imphal Moreh Mandalay Along with the Jiribam-Imphal Link this line will form a crucial link in the TAR.	581
Imphal – Kohima	120
Kohima – Tizit	390
Tizit – Tirap	90
Aizwal – Agartala	290
Lwangtlai – Sittwe	241
Lwangtlai – Aizwal	210
Lwangtlai – Imphal	500
Dimapur – Kohima line Although Dimapur is connected by rail, there is no rail connectivity in the interiors of Nagaland, and the Dimapur – Kohima line will be a critical link for development of railways in the north east.	40
Sevok – Rangpo line This line will nominally include Sikkim in the railway map.	53
Agartala – Sabroom line Sabroom is situated on the southernmost tip of Tripura and is very close to Chittagong in Bangladesh. Rail connectivity up to Sabroom will be a crucial for accessing Chittagong port.	110
Sabroom – Chittagong line Once developed, this line will enable goods to be transported to and from Chittagong Port	70
Total	3,484

North east India: Existing and proposed railway connectivity



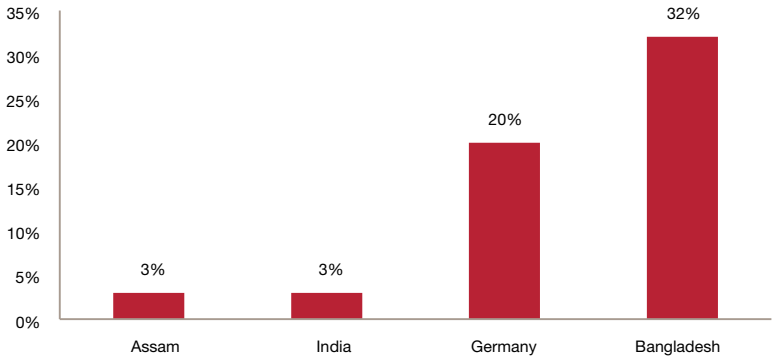
Investment required for development of railway network

State	Total length for development (km)	Total investment (crore INR)
Assam	1639.75	16,398
Arunachal Pradesh	732.1	43,926
Manipur	174.16	10,450
Meghalaya	130	7,800
Mizoram	71.68	4,301
Nagaland	309	18,540
Sikkim	53	3,180
Tripura	180	7,560
Total	3,290	1,12,154

4.1.2.3. Inland water transport

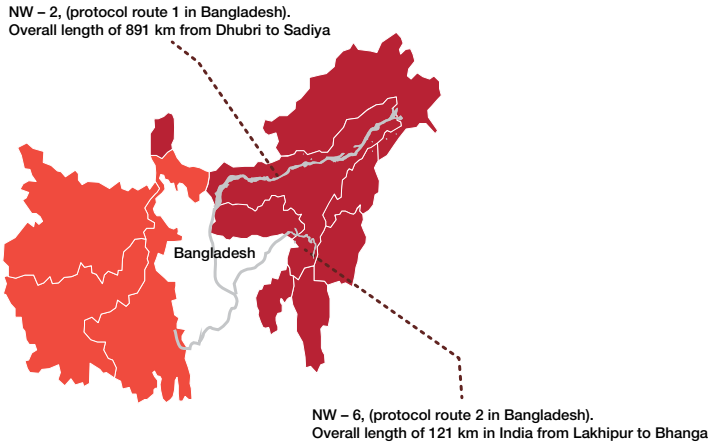
North east India is blessed with two national waterways: NW2 (Brahmaputra) and NW6 (Barak). However, the sector is underutilised. In 2011-12, out of the total cargo movement of approximately 91 MTPA in Assam, IWT contributed a meagre ***2.4 MTPA. In Assam, the contribution of IWT to the overall cargo movement stands at 3% whereas in Germany and Bangladesh, it stands at 20 and 32%, respectively.***

Share of IWT in cargo movement



Source: Total Transport Study, 2006

National waterways in the region



Source: PwC

The use of IWT has so far been limited and the sector lacks adequate infrastructure. Some of the issues the sector is facing are as follows:

- NW2 has a least available draft (LAD) of 2 metres for approximately 70% of the stretch (from Bangladesh border to Neamati) for 300 days and for NW6, the LAD varies between 0.5 metres to 1.85 metres during the year. For good navigation, an LAD of 2 metres is required.
- Moreover, the protocol routes 1 and 2 through Kolkata are not navigable throughout the year and even dried up in some months in the winter. These protocol routes need to be developed. However, there is a conflict between India and Bangladesh on who will invest for the development of these routes.
- The course of the river in NW2 keeps changing, which further complicates the building of permanent terminals.
- There are 13 terminals on NW2 and 2 on NW6, out of which only the Pandu terminal qualifies as a terminal in the real sense.
- Night navigation facility is inadequate. On NW2, night navigational facility is available only on the stretch from Dhubri to Neamati and on NW6, the entire stretch do not have night navigation facility.

Development of the major waterways could further extend the transport network for bulk goods and ferry services, thereby significantly expanding connectivity across urban and rural areas and social segments.

It is proposed that river navigation systems in both rivers be re-energised by the development of integrated port townships and renegotiating the river transport protocol with Bangladesh.

Development of IWT will help the development of commercial infrastructure and river tourism, which in turn will lead to increased employment generation and wealth creation not only for the region, but more importantly for the local communities. The key objectives for development of inland waterways in the north east are listed as follows.

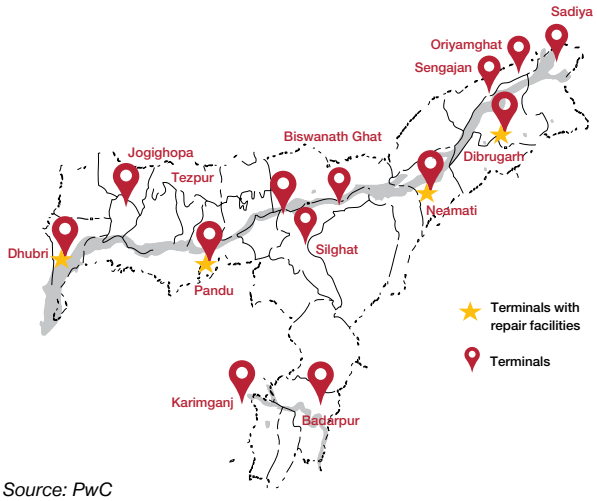
- Develop world-class and cost-efficient waterways on the Brahmaputra and the Barak in Assam through a PPP model.
- Facilitate passenger and cargo transportation round the year.
- Position IWT for extending linkages to mainland India, Bangladesh and South East Asia in the future.
- Upgrade and support the development of semi-urban and rural infrastructure.
- Maximise the potential of tourism using the environment-friendly mode of transport to connect with the diverse tourism assets of the region.

Integrated development of all aspects of the sector is necessary.

Infrastructure development for IWT

Route	Terminals	Repair facilities
• Ensure LAD of 2.5 metres along the entire stretch. • Provide uninterrupted navigational aids along the entire route. • Establish permanent channel stabilisation works.	• Enhance the cargo handling capacity of the terminals. • Provide multi-modal connectivity.	• Provide adequate repair facilities.

Infrastructure development for IWT



Source: PwC

Investment of 5,117 crore INR has been estimated for the development of NW2.

Investment required for development of IWT

Items	Total investment (crore INR, approx)
Route development (dredging, permanent river training works, night navigational aids)	200
Terminal development	3,800
Repair facilities	150
Vessels (cargo and passenger)	1,200

4.1.2.4. Airports

Air connectivity will play a key role in improving the overall connectivity to and in the region. Some key steps to be taken are listed below:

- Ensure flight connectivity to Tezpur and Tura airports.
- Expedite development of greenfield airports at Itanagar, Kohima and Pekyong (Sikkim).
- Develop non-functioning airports at Daporizo, Zero, Along, Passighat, Rupsi and Kamalpur.
- Expand helicopter services (accompanied by the creation of additional helipads) and use of smaller (short take-off and landing) aircrafts to promote intra-regional mobility as well.
- Provide night halt facility at Guwahati, Imphal and Agartala.
- Establish budget airport hotels in Guwahati, Imphal and Agartala.
- Improve cargo handling facility at Guwahati, Imphal and Agartala.
- Establish a perishable cargo complex in Guwahati.
- Augment the training capacity for local manpower by setting up of an aviation training facility in the region.

Airports in the north east



Source: FICCI

There are 12 airports and airstrips in the region, which are currently not in use. All the 12 airports need to be developed to run dedicated regional air service with smaller aircrafts.

Apart from the direct benefit to tourism, development of air connectivity in the north east has great strategic significance and is going to have a positive impact on many sectors of its economy.

These airports can be developed as regional and low-frill airports, where in regional airline operators can operate.

Investment required for development of airports

State	Regional airports	Total investment (crore INR)
Assam	2	750
Arunachal Pradesh	6	2,250
Manipur		0
Meghalaya	1	375
Mizoram	1	375
Nagaland	1	375
Sikkim	1	375
Tripura	3	1,125

4.2. Port townships

Apart from the development nodes mentioned above, to utilise the unique natural advantage provided by the river systems of the region and re-energise IWT, it is proposed that modern port townships be established along the routes of the rivers. Based on preliminary assessments, it is proposed that 20 such river port townships be developed on the Brahmaputra and Barak rivers. The river ports that may be developed are listed below.

Identified port townships

Brahmaputra	Barak
1. Dhubri	1. Annapurna Ghat
2. Jogighopa	2. Siddhesh-wari Ghat
3. Sualkuchi	3. Bhanga/ Malua
4. Palasbari	4. Sonabarighat
5. North Guwahati	5. Salchhapra
6. Noonmati	6. Kalinagar
7. Kharupetia	7. Rani Ferry
8. Tezpur/Silghat	8. Lakhipur
9. Dhansirimukh	
10. Neamati Ghat	
11. Dikhomukh	
12. Oirumghat	

The proposed developments could include the following:

Port and associated facilities	Industrial and allied activities	Township and other facilities
• Cargo stock yards and cargo handling facility	• Developed plot for industries	• Integrated township
• Railway yard and wagon loading	• Warehouses	• Connectivity with major transport corridors
• Food grain storage facility	• Standard design factories	• Accommodation, market, food court, etc
• Fertiliser and bulk cargo terminal	• Equipment rental and leasing centres	• Power, water, internal roads, waste management
• Liquid handling and tank Farm for petroleum products	• Inland container depot	
• Passenger terminal		

Substantial investment will be required for development of these port townships.



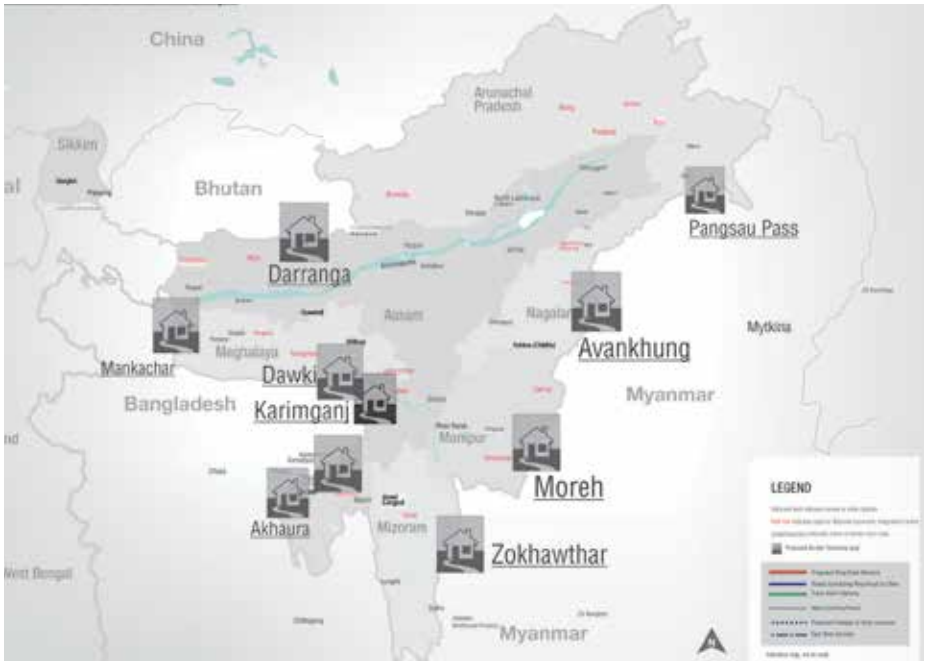
4.3 Border township and trade infrastructure

Ten border townships should be set up at Moreh, Zokhawthar, Avankhung, Pangsau Pass, Akahura, Karimganj, Dawki, Gasuapara, Mankachar and Daranga. The government of Manipur, with support from the town and country planning organisation, is already planning a border township at Moreh covering an area of nearly 1,000 hectares.

Developments in the border townships could include the following:

- Residential facilities
- Healthcare facilities
- Higher education facilities
- Trade infrastructure like customs, warehousing, transhipment, logistics parks, ICD, wayside amenities
- Manufacturing and processing areas

Approximately 1,648 crore INR has been estimated for the development of new township in Moreh on an area of 805 hectares. For developing similar border township at the proposed nine locations, the cumulative investment will be approximately 14,832 crore INR.





4.4 Power sector development

The north east has an installed capacity of about 2905MW and the current requirement is about 2,251MW. However, due to low plant load factor, the current demand is not being met from the installed capacity and the region is heavily dependent on imports. The situation is further aggravated by the fact that the connectivity with the Eastern Grid is weak and has limited carrying capacity.

Long-term forecast of electrical energy requirement in the north east (MW)

	2021 -22	2031 - 32
Arunachal Pradesh	177	365
Assam	2,534	5,033
Manipur	497	1212
Meghalaya	596	1112
Mizoram	352	723
Nagaland	271	554
Sikkim	176	341
Tripura	472	913
North east	5,075	10,253

4.4.1. Issues in power generation

The region has the potential for generating over 50,000MW of hydropower apart from substantial possibilities for gas-based and coal-based thermal generation. However, most of the potential remains untapped due to various reasons, including environmental concerns. Two thermal power projects at Palatana and Bongaigaon are at an advanced stage of implementation, but due to various reasons detailed below these projects are delayed. The commercial operation of these two projects would make an additional 1,475MW of power available to the region, which could not only solve the immediate problem at hand but could actually create a power surplus in the region.

4.4.1.1. Bongaigaon Thermal Power Plant

NTPC is implementing the 3x250MW Bongaigaon Thermal Power Project in Assam. Investment approval to the project was accorded in January 2008 and work for the main plant was awarded in February 2008. All three units of the project were scheduled for commissioning during the 11th Plan. However, the local law and order situation, frequent *bandhs*, etc have resulted in the delay of the project by at least two years. Urgent steps need to be taken for early completion of the project, if necessary by deployment of additional forces.

Fuel for the project is to be sourced from Eastern Coal Fields and Margherita Coal Fields. North Eastern Coal Fields at current capacity can produce only 1.2 million tonnes of coal per annum, whereas the requirement from the Bongaigaon Thermal Power plant is expected to be around 1.65 million tonnes. As further expansion of the coal field may not be feasible due to environmental concerns, alternative arrangements for supply of coal from Bihar or Jharkhand need to be made.

Transportation of coal is proposed to be done through IWT. While the Indo-Bangladesh transit and trade protocol will allow transportation of coal through Bangladesh, the protocol is currently renewed every one or two years. Efforts should be made to renew the protocol for a longer period of at least 10 years.

4.4.1.2. ONGC Tripura Thermal Power

A joint venture between ONGC, IL&FS and the government of Tripura is setting up the 726.6MW gas-based thermal power project at Palatana in Agartala. The first unit of the project was inaugurated by the President of India on 21 June 2013. However, since then the unit has been shut down due to problems in gas supply.

The gas supplied by ONGC was of inferior quality and contained impurities. This resulted in damage to the booster compressor and the unit had to be shut down. Two out of three booster compressors have been damaged and sent to BHEL for repairs.

There is still some uncertainty regarding the quality of gas. In the event the quality of gas continues to be poor, there is no clarity as to whether ONGC or OTPC will install the required filtration and cleaning machinery.

The government needs to intervene to resolve the issue and ensure early commercial operations and smooth functioning of the plan.

4.4.2. Transmission

The Eastern-North Eastern Power Corridor comprises one twin-circuit 400MW line and one twin-circuit 220MW line. These lines should be able to safely carry about 800MW of power. However, the total transfer capability (TTC) available to the region is in the range of about of 600MW and after providing for reliability margin, the TTC is reduced to 550MW. After accounting for long-term and medium-term open access commitments, the available transfer capability for short-term buying is further reduced to 320MW. This often gets revised downward due to contingencies and the absence of redundancy.

This problem becomes acute during the lean hydro season when the region needs to import a substantial amount of power through the ER-NER link and the available transfer capability (ATC) for short-term open access often gets reduced to 150 to 200MW.

Therefore, the transmission capability of the ER-NER link needs to be upgraded urgently. Minimum ATC for short-term open access needs to be maintained at 500MW.

Creation of additional transfer capability between ER and NER is essential in the short term to ensure that the region is in a position to procure power from open sources. This in the long term will help evacuate power from the region, given that a number of power projects are planned in the region that will create surplus power.

The ultra-mega transmission project in the Purnia Bihar Sharif segment has been completed. It is important that the Purnia-Siliguri-Bongaigaon segment be completed urgently. The project developer has cited security concerns for delay in the implementation of this project. Necessary security cover needs to be provided to ensure early completion of the project.

4.4.3. Available potential in the region

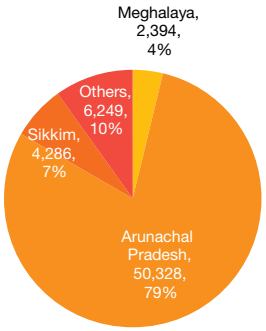
The whole region is endowed with various perennial rivers and water bodies, which have enormous hydroelectricity potential. Exploitation of the large hydropower potential in the north east region could be used for export to the power-deficit northern and western regions of the country. The spill-over benefits for the region would be the development of infrastructure such as roads, communications and electricity supply to remote hilly areas, resulting in better quality of life. The region offers great power generation opportunity, especially for hydropower in the states of Arunachal Pradesh, Sikkim and Meghalaya.

Many policies such as the 50,000MW hydropower initiative and the Hydro Policy 2008 have been formulated by the central government to promote investment in hydropower in the north-eastern region. Under the Mega Power Policy of the central government, the qualifying threshold capacity for setting up hydropower plants in the region and for availing the special benefits thereof is 350MW, whereas for the rest of the country, it is 500MW.

Under the Hydro Policy, the project developers in the central and state sectors can explore the possibility of foreign assistance to finance their projects. This assistance is already being utilised by NEEPCO for Pare Hydro Electric Project and MeSEB for Renovation and Modernisation of Umiam II HEP, which are funded by a foreign loan component

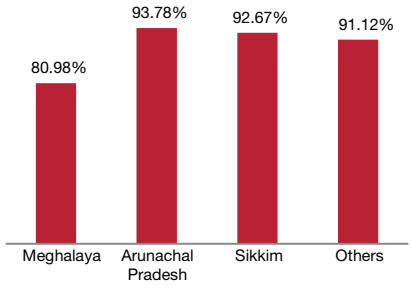
As per the North Eastern Industrial and Investment Promotion Policy (NEIIPP) of the Ministry of Commerce and Industry, the entire north east region has been declared as an SEZ and subsidies, tax exemptions and waivers are offered on the cost of infrastructure, transport, power, etc. The government is also encouraging the private sector in the region to boost investment in the power sector. More than 16,000MW has already been allotted to private players in the region for development as part of hydropower initiatives of 50,000MW.

Total identified potential



Source: CEA, 2014

Capacity yet to be developed



Source: CEA, 2014

Arunachal Pradesh

The state has a huge hydro potential to the order of 55,000MW[7]. It is mostly unexplored.

Sikkim

The state has huge untapped hydropower potential to the tune of 8,000MW on the river Teesta, Rangit and their tributaries. Therefore, Sikkim has developed a liberalised power policy to facilitate capital investment through public, private or joint sectors.

Manipur

The state of Manipur is endowed with plenty of hydropower potential in its hilly streams and rivers. It is estimated that the hydropower potential of the state is around 2,000MW. However, barely 108.2MW has been harnessed in the form of one medium project and few micro projects.

Mizoram

Since Mizoram has steep, hilly terrain, separated by rivers flowing either to the north or to the south, creating deep gorges between the hill ranges, there is potential for small and seasonal small hydropower projects. Small hydel plants thus have the advantage of modest front-end costs and benefits that are not far off in time. It is claimed that Mizoram state has as many as 73 possible locations for small hydel plants.

Nagaland

Nagaland has potential of around 1,600MW in hydel power generation, which provides great scope for investment opportunities in the power sector.

Tripura

Tripura has vast reserves of high methane content (up to 97%) natural gas, which can be utilised as a cheaper source of energy for various energy-intensive industrial projects. The present estimated production potential is about 4.03 MMSCMD. ONGC has been actively engaged in exploration activities in the state since 1972. One bid block of Tripura has also been included in the third round of bidding under NELP of the Ministry of Petroleum and Natural Gas. With these ongoing efforts, the availability of natural gas in Tripura is expected to significantly go up in the near future.

One major advantage in setting up a gas-based project in Tripura is the concessional pricing of natural gas for the north eastern region, making gas available at almost half the price as compared to other parts of the country.

7 *CEA – LGB Report*

The following power projects are planned for commissioning by 2022 in Arunachal Pradesh:

Project	Project size (MW)
Pare	110
Kameng	600
Subansiri Lower	2,000
Demwe Lower	1,750
Dibbin	120
Siang Lower	2,700
Nyamjunchhu	780
Tawang-I	600
Tawang-II	800
Londa (Talong)	225
Nafra	120
Tato-II	700
Dardu	60
Mago Chhu	96
Par	65
Rego	141
Dinchang	90
Nyukcha Rong Chhu	96
	11,053

Assuming a capital investment of 4 crore INR per MW, these developments will require a total investment of about 45,000 crore INR. Apart from these projects, the development of another 10,000MW need to be taken up during the next five years. The total investment required including the additional 10,000MW (till 2027) would be around 100,000 crore INR.

4.4.4. Key challenges and way forward

R&R issues

Land acquisition in the north eastern region is difficult due to inaccurate or incomplete data of land ownership and resettlement issue of native people dependent on land and forests. The central and state governments will have to conceptualise and execute a sustainable resettlement option which can be funded by the project developers.

Environmental concerns

Obtaining clearances from the Ministry of Environment and Forests (MoEF) has become a major issue in the recent past and this particularly applies to the north eastern region, with its rich biodiversity. The state government and the Ministry of Power should see to it that genuine cases get faster clearance from the MoEF.

Physical infrastructure

Power projects require massive infrastructure backing, especially roads to transport heavy equipment and helicopters to transport smaller equipment, particularly for small hydro plants. In the prioritisation of roads and highway development in the north eastern region, and in the deployment of helicopters, power sector requirements need further prioritisation.

Transmission and distribution

Due to scattered demand in the region, the per unit cost of transmission in the north eastern region is higher compared to other parts of the country. For example, the associated transmission system for evacuation of Kameng (600MW) power was estimated at 1,100 crore INR, about 50% of the cost of the generation project. Further, this region suffers from difficult terrain and hostile weather coupled with lack of qualified manpower. This has led to inadequate development of transmission and distribution (T&D) system facilities in the north eastern states, adversely affecting the reliability of power supply to the consumers. To overcome this issue, the union government can provide a centrally sponsored scheme to support inter-state and intra-state transmission and distribution projects. Further, state governments may provide incentives to develop T&D system.

Riparian issues

Most of the river systems of the north eastern region are transnational. For example, the Brahmaputra river originates in Tibet, flows into India and empties into the Bay of Bengal after traversing Bangladesh. Lack of proper agreements and disputes on water sharing, inhibit the utilisation of its full potential. Also, state border issues such as in the case of Subansiri are delaying project development. The central government, in consultation with the state governments could put in place a mechanism to resolve outstanding border and share allocation issues. International riparian disputes would have to be discussed between the governments for resolution in a spirit of cooperation for mutual benefit and satisfactory utilisation of the waters of the river system.

Short-, medium- and long-term planning

Short term 0-2 years	Medium term 2-5 years	Long term More than 5 years
Generation		
• Expeditiously complete the 750MW Bongaigaon Thermal Power Project. • Resolve issues in the 725MW ONGC Tripura Power Project to ensure full operationalisation. • Improve plant load factor in the thermal plants. • Sikkim to be included in NER Grid.	• Set up more gas-based power stations. • Promote regional co-operation on hydro units with Bhutan and Nepal. • Promote new and renewable energy (NRE) sources. • Invest in R&D and initiatives like setting up wind monitoring stations to asses wind power potential. • Import power from Bhutan to tide over short-term deficit.	• Develop hydropower projects that have minimum impact on the environment. • Initiate joint energy development projects with Myanmar. • Ensure speedy completion of sanctioned projects in Arunachal Pradesh after necessary environmental and safety due diligence.
Impact Surplus capacity of about 750MW	Impact Surplus capacity of about 1500MW	Impact Surplus generation capacity of about 10,000MW by 2022
Transmission		
• Increase carrying capacity of the connection to National Grid to at least 1000MW immediately. • Make investments in the high capacity transmission projects. • Award projects in the NE under the tariff-based competitive bidding route. This would ensure that projects come up at the most competitive tariff and within a time frame of two-three years.	• Expeditiously complete the Ultra Mega Transmission Project in Assam. • Import power from Bhutan.	• Further develop grid linkages with Bangladesh and explore opportunities of extending it to Myanmar.
Impact Current deficit can be overcome through short-term buying.	Impact Evacuation of surplus power will become possible.	Impact Surplus power can be exported in exchange for gas.

Summary of the required investment

Summary of the investment (crore INR)

State	Roadways (only for the proposed core networks)	Railways	Inland water transport*	Airports	Development nodes	Power	Border townships
Assam	18,336	16,398	5,350	750	800	4,375	3,286
Arunachal Pradesh	20,815	43,926		2,250	350	100,000	1,648
Meghalaya	6,515	10,450		0	300		3,296
Manipur	6,990	7,800		375	250		1,648
Mizoram	5,642	4,301		375	300		1,648
Nagaland	7,033	18,540		375	350		1,648
Sikkim	1,436	3,180		375			
Tripura	5,894	7,560		1,125	300	5,179	1,648
Total	72,661	1,12,154	5,350	5,625	2,650	109,554	14,832

The total investment has been estimated at

2,10,672 crore INR*.

Apart from the above, a total investment of

3,06,052 crore INR

has been estimated for the complete overhauling of road networks
(which includes national highways, state highways and major district roads) in the region.
A substantial investment will also be required for the development of port townships.

**the total investment figure doesn't include investment for railways. If investment for railways is included the total investment figure is estimated at 3,22,826 crore INR*

Necessary policy initiatives

5.1. Decentralising dialogue

While dialogue on the broader aspects of international relations will and should continue at the highest levels to foster better working relations with neighbouring countries, some amount of interaction with them particularly the adjoining provinces should be made at the local level in the interest of operational ease. The following initiatives are proposed to facilitate such local level interactions.

- Posting the Ministry of External Affairs officials in each state that has international borders
- Posting Ministry of Commerce and Industry officials in each state that has international borders

5.2. Facilitating border trade

In order to facilitate border trade with the neighbouring countries, the following policy initiatives need to be taken immediately:

- Reserve Bank of India regulations should be reviewed to make them practicable and trade facilitative integrated check posts could be set up in all the border townships.

- Paperwork should be simplified and traders at the border trade centres should be made familiar with the paperwork.
- Adequate banking facilities should be available at the border trade centres.
- Promote development of 'border haats' and upgrade the Land Custom Stations to ICPs.
- Revisit the Border Trade Agreement with Myanmar and substantially increase the list of tradable items through barter system. The Indian government may allow normal trade between the two countries as per the foreign trade policy.

5.3. Supporting local businesses and entrepreneurs

- Financial and administrative support should be provided to local entrepreneurs, especially for marketing.
- Efforts should be made to promote innovation.
- Artisans and the handicraft industry need to be promoted through a well-coordinated programme with assistance from the central government. A superior product can be selected from each district and branded and provided local and international platform for promotion of these products. These activities will also have a spill-over effect on the tourism industry.

5.4. Capacity building

- Improve access to education to the population and reduce disparities between urban and rural areas in access to educational infrastructure.
- Provide quality higher education and strengthen technical education and vocational training.
- Promote partnership between educational institutes and industries with the objective of improving labour force skills and enhancement of research and development.
- Introduce a policy for promoting innovation.

5.5. Tax reforms

Aligning tax policies with those of other ASEAN countries will help make investments equally attractive in both ASEAN and north east India.

5.6. Exchange rate reforms

In the absence of a realistic exchange rate, growth of exports to Myanmar has suffered. The official exchange rate of Myanmar's currency kyat is hugely inflated. One kyat is equal to 8.50 INR (2010). However, in the informal market the rate is 25 to 30 Kyat for a rupee. The Indian rupee is generally used in the informal trade between India and Myanmar. Hence, it is recommended that India-Myanmar trade be denominated in rupees. Advantages of using rupees are listed below.

- It will help avoid the use of foreign currency and hence avoid complex procedures, considerable delays and increase in transaction costs.
- The rupee has been relatively stable than the euro, which is currently used for the settlement of India-Myanmar trade. Trading in rupee will help both traders and consumers on both sides of the border.
- The use of the rupee will encourage traders involved in the informal trade to go through the formal route.

About FICCI

FICCI, industries voice for policy change, is the largest and oldest apex oraganization of Indian business and industry. It is the rallying point for free enterprises in India. It has empowered Indian business in changing time to shore up their competitiveness and enhance their global reach. With a nationwide membership of over 1500 corporate and over 500 Chambers of Commerce and business associations, FICCI espouses the shared vision of Indian business and speaks directly and indirectly for over 2,50,000 business units. FICCI maintains the lead as the proactive business solution provider through research, interactions at the highest political level and global networking.

FICCI organises a large number of events including exhibitions, conferences, seminars, business meets, etc. for promoting business. The major trade fairs organised by FICCI include India Telecom, India Chem, India Aviation Show, India Stonemart, Annapoorna World of Food India, EIMA Agrimach India, Agrogya, etc.

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FICCI Northeast Advisory Council

FICCI has set up a office in Guwahati to catalyse growth in the region. The North East Advisory Council which leads our activities in the region is comprised of some of the leading businessmen, academicians and professionals from the NE.

Some of the focus areas for the North East Advisory Council are

1. Infrastructure Development
2. Energy
3. Development of the Power Sector
4. Promoting the North East as a destination for Investments and Tourism
5. Enhancing competitiveness of local industry in sectors like Tourism like Food Processing,
6. Skill Development

Apart from this the council is working on a comprehesive vision to position the NE as a bridge between ASEAN and India. The council has also taken up a number of issues affecting local industry and recommended steps for strengthening the North East Industrial and Investment Promotion Policy.

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