STUDY AND ACTION PLAN FOR PROMOTING DOWNSTREAM PLASTIC PROCESSING AND ALLIED INDUSTRIES FROM ASSAM GAS CRACKER PROJECT

2009

SUBMITTED BY:

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EXECUTIVE SUMMARY

TITLE OF THE STUDY

STUDY AND ACTION PLAN FOR SETTING UP DOWANSTREAM PLASTIC PROCESSING & ALLIED INDUSTRIES NORTH EASTERN DEVELOPMENTFINANCE CORPORATION

Issue and Revision Record

Rev	Date	Originator	Checker	Approver	Description
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Summary

1 Market Assessment

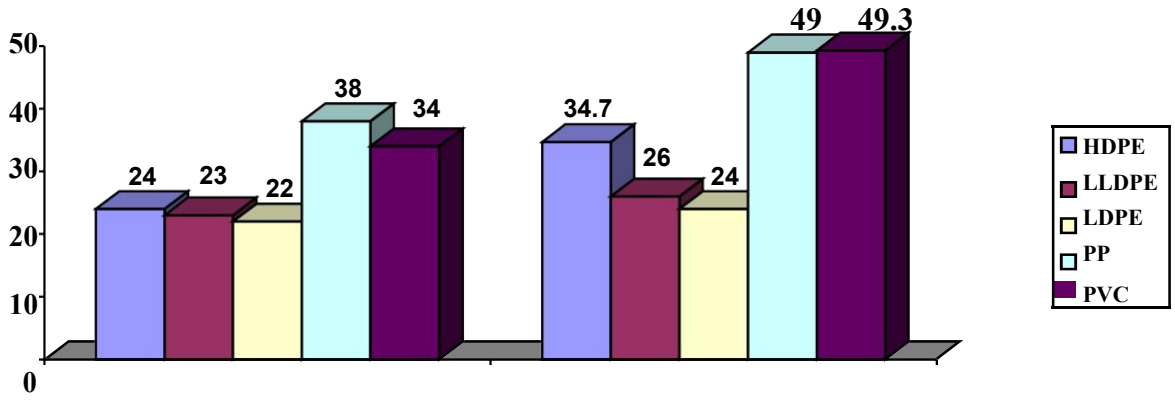
1.1 Global Industry Outlook

This section further details the International market scenario of the major Thermoplastics (PE, PP, PVC) which are also known as the Commodity Plastics. Incidentally, the polymers PE and PP can be manufactured from the product output from Brahmaputra Crackers and Polymers Limited (BCPL).

1.1.1 Present

In 2007, the total installed capacity of PE was 84.7 MMTPA, whereas the PP capacity was 49MMTPA and PVC capacity was around 49.3 MMTPA.

Global Installed Capacity of Commodity Thermoplastics (2002 to 2007) in MMTPA



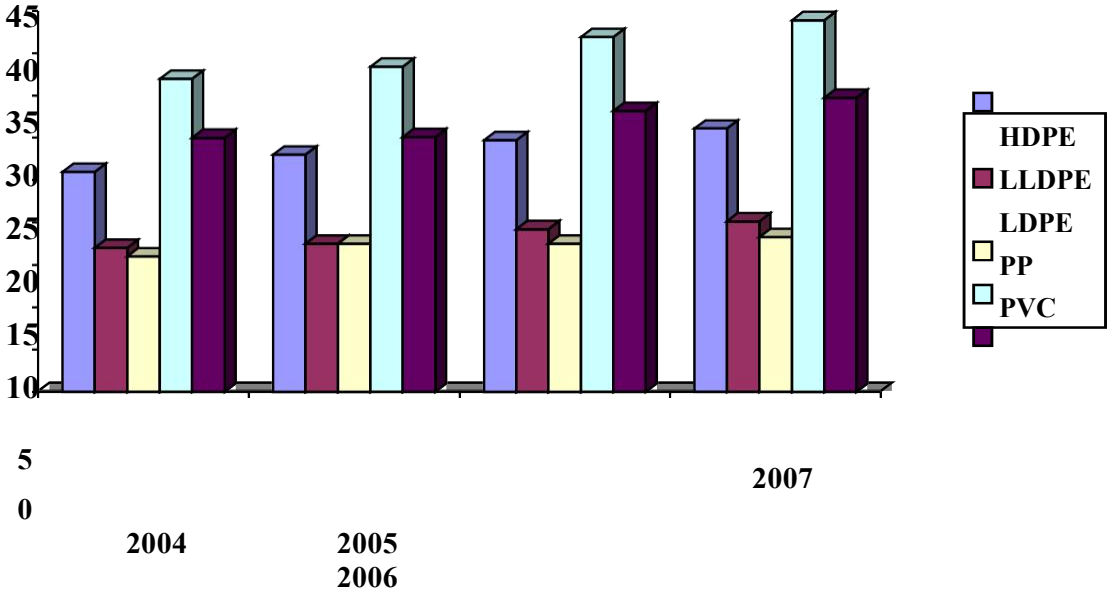
2002 **2007**

The total production of major thermoplastics has grown at an average rate of 4%. But, thegrowth rateof PP and PVC has been faster at about 5.2%.

In 2007, share of PP in the total production was 24%, followed by PVC, at 19%.

The total consumption of PE, PP and PVC has increased from 126 MMT in 2004 to about148 MMTin 2007, indicating a CAGR of 5.5%.

Global Consumption of Commodity Plastics (2004 to 2007) in MMTPA



1.1.2 Future

The global capacity augmentation of Polypropylene & PVC is likely to change in the years to come with huge capacities planned in Asian & Middle East Region, which has fast growing economies as compared to the mature economies of North America & Western Europe.

The global demand of PE is anticipated to increase at a rate of about 4%, driven by the growthin the films/sheets and injection moulding segments. The demand of PP is expected to grow ata rate of 5%, driven by the growth of the durable/flexible packaging and auto industry segments.

Global Demand-Supply Scenario of Commodity Thermoplastics (MMTPA)

Polymer	Supply			Demand		
	2002	2007	2012	2002	2007	2012
PE	69	85	115	52	70	98
PP	38	49	70	33	44	62
PVC	34	49	61	27	35	44

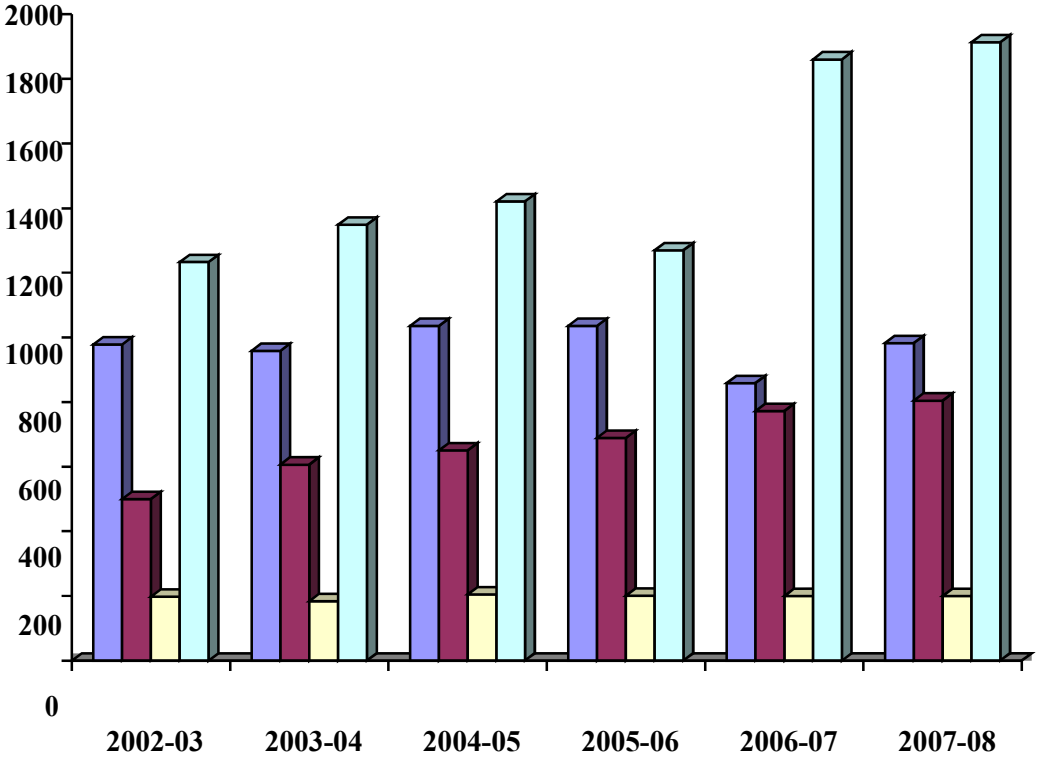
1.2 Domestic Industry Outlook

Domestic Plastic processing industry today provides direct and indirect employment to over 3.5 million people. Injection moulding, blow moulding and extrusion are the major components of this industry. Majority processing units are in the small scale segment and the industry has grown at an impressive pace since the last five years.

1.2.1 Present

There are 7 integrated petrochemical complexes in the country. The PE/PP total installedcapacity hasgrown to over 4 MMTPA.

Installed Capacity of Thermoplastics in India (2002-03 to 2007-08)(KT)



The overall consumption of PE has grown at a CAGR of 7% in the last five years (2002-03 to 2007-08). The consumption of PP has increased at a CAGR of 12.6% in the last five years (2002-03 to 2007-08), in line with the growth in the major end-use segments. The past consumption of PVC has grown at a CAGR of 8% the last five years (2002-03 to 2007-08).

1.2.2 Future

Future Capacity Addition/ Augmentation of Thermoplastics in India (MT)

S.No.	Player	Location	LDPE	LLDPE	HDPE	PP	PVC	Year
1.	IOCL	Haryana	-	350,000	300,000	650,000	-	2009
2.	BCPL	Assam	-	110,000	110,000	60,000	-	2012
3.	RIL-Jamnagar	Gujarat	-	-	-	900,000	-	2009

4.	ONGC-Dahej	Gujarat	-	720,000	300,000	340,000	-	2012
5.	RIL-Jamnagar	Gujarat	400,000	1,100,000	-	200,000	-	2011
6.	IOCL	Orissa	-	-	-	700,000	-	2012
7.	GAIL	UP	-	-	100,000	-	-	
8.	CSL	TN	-	-	-	-	170,000	2009
9.	DCW	-	-	-	-	-	10,000	2009
10.	HPCL	Punjab	-	-	-	350,000	-	2012
11.	HPCL	A.P.	-	-	80,000	150,000	-	2013
Total			**400,000**	**2,280,000**	**890,000**	**3,350,000**	**180,000**	

The future growth rate of PE/PP/PVC would be around 10-12% p.a. We have, however, considered a conservative growth rate of 10% for analysis.

Domestic Demand-Supply scenario of Commodity Thermoplastics (MMTPA)

Polymer	**Supply**			**Demand**		
	2002	**2007**	**2012**	**2002**	**2007**	**2012**
PE	1.69	1.83	5.40	1.62	1.99	3.68
PP	1.35	1.86	5.21	0.96	1.54	2.79
PVC	0.78	0.98	1.17	0.84	1.06	1.97
Source: MM Analysis from CMIE, Performance of Chemical & Petrochemical Industry ata Glance,Department of Chemicals & Petrochemicals						

1.3 North-East Industry Outlook

While considering the market for the North-East Region, specific attention has been given to Assam. The plastic/polymer industry in the state is underdeveloped, owing to the strong correlation of this industry with the overall economic development. The absence of a Petrochemical cracker supplying the basic feedstock has also added to the stagnation in development of such industries in the region.

1.3.1 Present

As mentioned earlier, the NER does not have a cracker facility. Hence, the entire supply of polymers in NER is done by the existing domestic suppliers (Haldia Petrochemicals and Reliance Industries) or from imports. Our discussions with the major suppliers indicate that the estimated supply of polymers (PE/PP/PVC) in the NER is in the range of 2200-2500 Metric Tons per month (MTPM).

The present consumption of virgin polymers in NER region is estimated to be in the range of 2200-2500 MTPM which is dominated by polypropylene followed by PVC, LLDPE & HDPE.

1.3.2 Future

With the commissioning of petrochemical complex in NER, the region would have local supply of raw materials mainly Polyethylene and Polypropylene. This local supply of raw material would enable the competitiveness of local plastic processors thereby stimulating growth of downstream units in the region.

The current consumption in NER is around 4300 MT per month (MTPM) with the following break-up:

Virgin Polymer (as processed in NER): 2300 MTPM

Reprocessed Polymer (as reprocessed in NER): 900 MTPM

External Supply (Processed products as are supplied to NER): 1100 MTPM

At an estimated CAGR of 15-17%, the demand of plastic products in NER region is likely to grow to 114,000 MTPA by 2013-14 and 250,000 MTPA by 2018-19.

NER Demand –Supply scenario of Commodity Thermoplastics (MTPA)

Polymer	**Supply**		**Demand**			
	2008	**2012**	**2008**	**2012**		
				Current Growth Rate (17%)	**Optimistic Growth Rate (34%)**	**2012 (Per Capita Consumption of 5 in NER)**
Polyethylene (PE)	-	220000	12000	22487	38690	51840
Polypropylene (PP)	-	60000	27000	50595	87053	116640

Polyvinyl Chloride (PVC)	-	-	13000	24361	41914	56160
TOTAL		**280000**	**52000**	**98000**	**168000**	**224640**

For demand projections we have considered three scenarios in 2012, one with the existing CAGR of 17%. The second one has been worked out considering the growth rate to be twice that of existing, i.e at 34%. In the third scenario, we have assumed that with the availability of raw materials in the NER, the product application and diversification will increase which will lead to a situation wherein the per capita consumption in NER will be equal to the domestic average of 5.

1.4 Plastic Consumption in North-East

For the purpose of estimating per capita consumption (Figure 3.30), the following assumptions have been considered:

- The consultants have considered PE, PP and PVC consumption for the estimates of total plastic consumption in the NER
- In order to estimate production of plastic, consultants have considered consumption of virgin as well as recycled polymers.
- With regard to population, consultants have used the past decadal population growth figures (Census 1990 and 2001). The population growth in the last decade has been used as basis for extrapolation over Census 2001 data.

Based on the above methodology, the per capita details of plastics pertaining to North-Eastern Region are stated below:

Per-Capita Plastic Processing in North-East	0.87 kg*
Per-Capita Plastic Consumption in North-East	1.15 kg*

*Detailed working is attached in ***Appendix A*** in the main report..

1.5 Fast Moving Plastic Products in North-East

Existing End-use Sectors:

Woven Sacks (mainly PP) Ropes & Sutli (PP)

Moulded Furniture (PP- both virgin and recycled grade)

HDPE Plastic Combs, Buckets, Mugs etc.,	Toys

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Water Pipes (HDPE, PVC)	Tanks/Industrial Containers(predominantly LLDPE)
Bottles/Small Containers (HDPE)	Disposable Items (PP)
Films, Laminates & Carry Bags (LLDPE, PP &HDPE- both virgin & recycled grade)New End-use Sectors Proposed:	
Plastic Crates	Tarpaulins and Covers
BOPP Films	Synthetic Wood
Multilayer Film	Drip Irrigation System
Prefill PP Polymer	Geo-Synthetics
Mosquito Nets	Leno Bags
Pond/Canal Lining	Greenhouse Film

2 Product Profiles

From the findings of the Market Survey and the secondary research and data, we identifiedtheproducts for preparation of the profiles. These include:

1. Woven Sacks
2. Moulded Furniture
3. Ropes
4. PP Disposable Plastic Cups
5. BOPP Films
6. PP Blow Moulded Containers
7. PP Polymer Compounding
8. Geo-Textiles
9. HDPE Plastic Combs, Buckets, Mugs etc.
10. Water tanks, Industrial Containers
11. Bottles, Small Containers
12. Pipes
13. Plastic Crates

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14. Tarpaulins and Covers
15. LLDPE Sheets and Carry Bags
16. Multi-layer Film
17. Drip Irrigation Systems
18. Plastic Lumber
19. Leno Bags
20. Mosquito Nets
21. Pond/Canal Lining
22. Disposable Syringes
23. Moulded Luggage
24. Toys
25. Greenhouse Film

Marketable Product Profiles have been prepared for all the above products and they are detailed out in Volume-II of the report.

3 Support Industries

Study of existing petrochemical complexes and interactions with representatives of local industries in Assam have enabled us to arrive at a list of support industries that will be required for the Assam Gas Cracker complex and downstream plastic processing units. Support industries required by the downstream plastic processing units, will include:

1. Machine Shops for repair and maintenance of the machinery
2. Spare Parts Manufacturing & Supply
3. Processing of Coloured Master batches
4. Mould Manufacturers
5. Logistics/Transportation Service Providers
6. Others which will include industries related to repair of spare parts and machinery,small scale units in foundry, smithy, carpentry etc., service sector including banks, hospitals, schools, housing facilities etc.

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Profiles for main units in the support industries have also been prepared.

4 Plastic Parks

In this section, case studies of existing/planned Plastic Parks in India and abroad have been presented, along with guidelines for setting up of Integrated Plastic Parks in the region.

It is expected that the development of the Assam Gas Cracker complex would result in flow of investments in the plastic processing sector. Downstream plastic processing units may be planned in clusters or planned parks, following the guidelines given in this chapter.

Two Plastic Parks have been proposed. A Plastic Park has already been proposed on 360 acresof land in **Tinsukia** District. It is located at about 4 kms from Tinsukia town. We suggest that a second **Integrated Plastic Park (IPP)** be **proposed near Nagaon Town**, in Industrial Corridor 1 or the **option of diversifying and strengthening** the Industrial **Growth Centres (IGCs) of Balipara and Matia** should be explored by the AIDC.

Based on the average area required by the units for which profiles have been prepared, we have calculated the area required for setting up 1250 units. Based on this assumption, the area for setting up of a plastic park to house all the 1250 units works out to be 978 Acres. Also, the Power requirementfor setting up a park housing all these 1250 units and all the Common Facilities related to them is around 31 MW.

5 Plastic Waste Management

This section presents a brief on the various plastic waste management techniques that are available andhave been studied and after analysis suggests plastic waste management options for the downstream units based on the Assam Gas Cracker.

Although Mechanical Recycling is the most commonly used and conventional method of plastic waste management, we suggest that the conversion of the plastic waste to energy be considered, especially inview of the potential increase in per-capita plastic consumption in the region and consequent increase in the proportion of plastics in the Municipal Solid Waste.

- Facilities for mechanical recycling of plastic waste and/or waste-to-energy projects should be set up in select cities or towns after conducting detailed feasibility studies as detailed above.

- For each location, the waste management project should be developed under a Public- Private-Partnership framework.

- The public sector (State Government Agency or local Municipal body) should be responsible for providing required land and necessary clearances for setting up of the waste management project. The agency or municipal body should be selected depending upon the location of the proposed facility.

- The private sector should develop, own and operate the waste management facility.

- State Government may decide a “Nodal Agency” which can be AIDC or any other appropriate authority for identifying, approving and monitoring of such Plastic Waste Management projects or facilities.

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6 Economic Benefits of the Cracker

We have considered the multipliers from the Annual Survey of Industry (ASI) as our basis for this section. From the ASI, we have taken the details pertaining to the plastic processing industry and have calculated various ratios to work out the multipliers that will be applicable for the NER.

A crucial factor required for the calculations is the estimates of the number of units that can come up based on the output from the Cracker Complex. For this, we have taken the reference from the Working Group Report of the Department of Chemicals and Petrochemicals (2007- 12). According to this report, the production of 4.9 MMTPA of Plastic Raw Materials in the country is being processed by 22,000 units. Based on this, the number of plastic processing units that can come up from the output of the Assam Gas Cracker works out to be 1257(which has been rounded off to 1250 for calculations).

This number of units (1250) has been used as the basis for calculating the investment required, employment generated, output and value addition expected from the Gas Cracker based on the ratios earlier worked out. These parameters, as calculated, are given below:

Economic benefits of Gas cracker project in NER (Scenario-I)

Invested Capital (Rs. In Crores)	4438
Total Output (Rs. In Crores)	8075
Total Employment (Nos.)	45000
Value Added (Rs. In Crores)	913

Total Employment from Downstream Units of Gas Cracker project

Direct Employment (Nos.)	45000
Indirect Employment Multiplier	1.42
Indirect Employment (Nos.)	64000
Total Employment (Nos.)	1,09,000

Thus, as a result of the Assam Gas Cracker, 1250 plastic processing units can come up andthese units will bring in additional investment of approximately Rs. 4400 crores and are likely to provide employment opportunities to about 1,09,000 people with creation of around45,000 direct and 64,000 indirect jobs.

7 Infrastructure and Utilities

This chapter details the existing level of infrastructure and utilities in Assam in general and specifically related to the Assam Gas Cracker Project. Specific proposals with respect to industrial, physical and social infrastructure have also been provided.

7.1 Existing Scenario

This section elaborates the existing scenario in terms of industrial infrastructure, connectivity, power& water supply and educational facilities particularly related to the Assam Gas Cracker Project.

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7.2 Proposed Developments

7.2.1 Industrial Corridors

Three Industrial Corridors have been proposed:

Industrial Corridor 1: Along NH 37, between Guwahati and Nagaon Town, the headquartersof Nagaon District
Industrial Corridor 2: Along NH 37/38 between Jorhat Town and Margherita covering Dibrugarh and Tinsukia enroute.
Industrial Corridor 3: Along NH 52 from Baihata Chariali (near Guwahati town) toKulajan.

7.2.2 Physical and Social Infrastructure

Augmentation of various road networks proposed.

A detailed routing plan for goods movement should be developed following the abovementioned guidelines and strictly implemented/enforced.

The proposals may be incorporated with all existing plans/programmes and proposed construction/development activities undertaken by the PWD (Roads), NHAI and the BRO. The above proposals only provide a framework – detailed surveys and studies are advised.

Double lining and electrification of the major Broad Gauge Railway link up to Dibrugarh. This would ensure faster and efficient passenger/goods movement and would be beneficial for all the proposed Industrial Corridors as well as the Cracker.

Development of dedicated efficient freight/goods handling facilities at Guwahati and Dibrugarh Railway Stations. These are the two major nodes and improving facilities will encourage the freight movement through rail thereby reducing road traffic volume.

Modernization of terminals at Jorhat and Dibrugarh. Implementation of plans & proposals by the AAI to be expedited.

Freight / Cargo handling capacity enhancement depending on demand & in a phase- wise manner at Guwahati, Dibrugarh & Jorhat Airports. This will be of help in the long run when units start expanding and orienting themselves for exports.

Detailed feasibility studies for transportation of passenger and goods along the River Brahmaputra, especially from Guwahati to Tinsukia, should be carried out.

Provision of terminal and landing facilities all along the River Brahmaputra should be considered. The cargo handling facilities have to be put in proper place, warehousesset up at proper locations, night navigation introduced, channel marking done and dredging operations carried out in order to make the Inland Water Transport system viable.

Multi-modal transhipment facilities with warehouses, truck-terminals and efficient freight/goods handling systems to be planned at Guwahati and Dibrugarh, integrating with the existing railway stations.

Connectivity from the railway stations to airports to be improved for movement of heavy goods vehicles without interference with the urban passenger traffic.

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Infrastructure development of the Industrial Training Institutes in Assam, especially those in Dibrugarh, Tinsukia, Sibsagar and Jorhat.

Introduction of courses on 'Plastic Engineering' and 'Polymer Technology' in the Industrial Training Institutes, in view of the demand for skilled workforce in these trades.

Reinforcement and introduction of the courses/trades required for supporting the major industries including that of Electrician, Plumbing, Carpentry, Mechanic, Foundry etc. in the ITIs of Dibrugarh, Tinsukia, Sibsagar and Jorhat.

Initiatives should be taken by the Central and State Governments for establishment (or improvement) of new quality technical institutes and research establishments in Assam and the entire North Eastern Region.

8 Action Plan

8.1 Policy Analysis and Investment Promotion Strategy

Study of the policy for Plastic Industry in India, NEIIPP-2007, Assam Industrial and Investment Policy 2008 and Industrial Policies of Gujarat and Maharashtra have been done and recommendations for Assam have been made after analysis of these.

Although incentives and subsidies have been provided in the North-East but industrialization has not taken place in the pace as was envisaged. Assam can initiate some actions which may lead to some policy changes, but these will foster the growth of Industrialisation in the state, enabling the promotionof the Plastic processing industries as well. This section is generic for the Investment Promotion Strategy for Assam, which can be taken up under four broad categories as under:

- Industry Vision & Strategy : Some of the thrust points in this section are:
    - Assam needs to have a specific vision for thrust sectors, including Plastic Processing, outlining key targets, strategy to achieve set targets, infrastructure requirement, key performance indicators. Performance needs to be monitoredat the highest level. It is recommended that a State Government Task Force be constituted for the same.
    - SIR/Corridor – Assam can identify Specific Investment Regions(SIR)/corridors. A SIR Development Plan can be prepared including policy to attract investments
    - Cluster Based Investments – A policy can be developed to attract cluster based industrial development (IPPs/ plastic parks).
    - Industrial Infrastructure Development Fund – Needs to create a Corpus for supporting infrastructure development to add on to the GOI Viability Gap Funding.
- Fiscal Incentives: Key Points in this section are:
    - Capital subsidy provided in Assam is reasonable but Zone based benefits can be considered
    - Stamp Duty Exemption, on moveable properties and bank credits can be considered.
    - A separate policy may be adopted by the State Government to encouragesetting up of downstream units. This policy may provide incentives.

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- Non Fiscal Incentives:

  - Assam can promote Mega Projects- All mega projects need to be negotiated and structured to cater to the need of the investor and these deals should not disclosed for the benefit of the investors as well as the state

  - Land Banks – Assam should identify land banks which can be quickly acquired for mega investments. Can have GIS based land bank details for identification of land parcels which facilitates land allocation process. It is recommended that an agency canbe engaged to identify land bank and digitize.

  - Can initiate measures to popularise 'Made in Assam/ NER' brand along with a state level marketing fund.

  - Another key factor that needs to be considered is putting up of a nodal agency that hasstringent control over all the Departments involved in the process so that the processis smooth, time bound and hassle free.

- Brand Building

  - A "Guidance Bureau" needs to be set-up for guiding and helping investors.

    - Single Window Clearance- Needs to have better coordination between various agencies to facilitate quicker clearances. A lot of time is taken by Local bodies.

  - Needs to have "Infrastructure Promotion Board:. This will help in identifying support infrastructure gaps for industrial investments.

  - Assam needs to aggressively promote the state. Promotion of the State through provision of world-class infrastructure should be the prime focus than the fiscalincentives.

    - A common branding fund for state & state manufactured products should be put in place.

8.2 Infrastructure and Entrepreneurship Development Plan

8.2.1 Capacity Building

Objective	Action on	Specific Action(s) Required	Time Frame	Concerned Department (s)/Organisation
		A. Technical Guidance :		
		1. Technical guidance to the entrepreneurs of North East for setting up ofdownstream industries	2009	BCPL
Setting up of a Business Development Cell (BDC)by BCPL.	Setting up two Branches of BDC- one at the Project Site at Dibrugarh and the other at Guwahati	2. BDC will maintain database ofmachinery manufacturers of plastic processing machinery & updated costs.		
		B. Handholding support: It will co-ordinate with State Govt. for facilitating infrastructure for downstream industry and with Banks for providing credit support	2009	BCPL
		C. Marketing Support:		
		1. Since the State Governments are the major buyers in the North EasternSector, BDC will take-up with all the departments for increased usage of plastic items in their infrastructure projects like water supply,irrigation, lining/ soil erosion control measures etc. which in turn will boost the local market	2009	BCPL
Objective	**Action on**	**Specific Action(s) Required**	**Time Frame**	**Concerned Department(s)/ Organisation**

		for the entrepreneurs. **2.** Create awareness about different plastic based products to the general consumers. 3. BCPL BDC can procure orders from major buyers including Government Departments on behalf of the downstream industries and market the same. It can even promote exports from downstream industries- thereby promoting the demand in nearby countries like Bangladesh, Myanmar, Bhutan etc.		
Improvement of Educational Facilities/EntrepreneurshipDevelopment	Upgradation of Industrial Training Institutes (ITIs) at Dibrugarh, Tinsukia, Sibsagarand Jorhat	Infrastructure Development in terms of laboratories and services in terms of practical training, faculty, increase in the range of trades, industry interface and placement services. Introduction of courseson Plastic Engineering' and Polymer Technology'	2010	Ministry of Labour and Employment, Government ofIndia & Government of Assam
	Assam EngineeringCollege-Guwahati, Jorhat EngineeringCollege- Jorhat & NIT Silchar	Introduction of Graduate and Post-graduate courses on plastic engineering, polymertechnology and allied fields	2010	AICTE, GuwahatiUniversity & Dibrugarh University. DTE, Government of Assam
	Entrepreneurship Development	Assistance for entrepreneurship development programs and skill development initiatives in the plastic processing, polymer technology andrelated sectors.	2009	IIE, MSME-DI, NSIC
Objective	**Action on**	**Specific Action(s) Required**	**Time Frame**	**Concerned Department (s)/Organisation**
	Opening up of Extension Centre of CIPET in Upper Assam to impart short/long term courses on plastic mould technology,processing, usage of machines and their maintenance etc.	Building up of skilled manpower requirement for the downstream industries.	2010	DG, CIPET, Ministry of Chemicals & Fertilizers,GoI, Govt.of Assam

	CIPET Branch at the proposed Plastic parks with common facility service and Central Tool Room	Providing consultancy & technical supportservice to the downstream industries.	2012	DG, CIPET, Ministry of Chemical & Fertilizers, GoI,Govt. of Assam
	Research facility in Dibrugarh	Establishment of a National Research Instituteon Petrochemicals, Polymers and Plastics in Dibrugarh	2011	CSIR
Support for downstreamplastic processing industries	Support engineering andservice industries	Provision of conducive investment & labour environment, adequate land, infrastructure support and necessary clearances & approvals.	2014	Department of Industries &Commerce, Government ofAssam , AIDC, DICC

8.2.2 Plastic Parks

Objective	Action on	Specific Action(s) Required	Time Frame	Concerned Department(s)
Promoting cluster	Setting up of theIntegrated	1. Formal Expression of interest inviting consultants to provide assistance in setting up of an Integrated Plastic Park by the Government of Assam and preparation of DPR	2009	Dept. of Industries and Commerce,Govt. of Assam,
development of Downstream plastic processing units	Plastic Park (IPP) at Tinsukia	2. Notification of the proposed IPP and request for grants or subsidies.The processof identifying andattracting potential investors should start at this stage.	Early 2010	AIDC
		3.Formation of a SPV (in PPPframework) for executing ownership andmanagementof Tinsukia IPP	2010	
		4. Arrangement of funds by the SPVfor Infrastructure development in IPP	2010	SPV, Dept. of Industries &Commerce, Govt. of Assam
		5. Commissioning of the IPP and settingup of downstream industries	2011	
		1. Formal Expression of interest inviting consultants to advice on setting up of an Integrated Plastic Park by the Government of Assam and preparation of the	2010	

	Identification of 2nd IPP at Nagaon or conversion of existing Industrial Growth Centre at Matia or Balipara to anew IPP (Based on State Govterments Decision)	FeasibilityReport		Dept. of Industries and Commerce, Govt. of Assam, AIDC
		2. Notification of the proposed IPP and request for grants or subsidies. The process of identifying and attracting potential investors should start at this stage.	2010	
		3. Formation of a SPV (in PPPframework) for executing ownership and managementof Nagaon IPP	2011	
		4. Arrangement of fund by the SPVand Infrastructure development in IPP	2012	SPV, Dept. of Industries &Commerce, Govt. of Assam
		5. Commissioning of the IPP and settingup of downstream industries	2013	

8.2.3 Action Points for State Government

Objective	Action on	Specific Action(s) Required	Time Frame	Concerned Department (s)
Monitoring of Project Activities Related to Downstream Industries	Setting up a High Powered Task Force under the Chairmanship of Minister of Industries &Commerce, Govt. of Assam to review setting up of Integrated Plastic Park, Joint VentureInitiatives,Downstream Industries Facilitation,Infrastructural,Capacity Building,Human Resource Development, Market Expansion& Support, Policy Changes etc.and all other activities suggestedfor the State Government and itsDepartments in the Action plan.	Constitution of the Task Force : Members of the Task Force shall be decided by the State Govt. to cover all aspects of the action plan suggestedabove (setting up of IPP, skill development, monitoring of employment generated, review and progress, creating awareness, marketing development). The Task force will prioritize the activities and arrange for resource allocation and implementation. It will liaise with concerned departments ofState as well as Central Govt. Quarterly review meeting of the Task	2009	Dept. of Industries & Commerce, Govt. of Assam

		Force is to be held regularly to monitorthe progress.		
Speedy implementation ofthe ongoing physical infrastructure projects	Meeting the time lines	Work toward completing the projects ontime	Within the Time lines	Government of Assam,PWD, AIDC
Speedy Implementation ofIPP at Tinsukia	State government to act asfacilitating agency	Immediate Selection of PMC	2011	Government of Assam
Role DICCs on facilitatingdownstream industries	Linkage of Task Force with the concerned DICCs.	The Task Force will keep the local DICCs abreast with the policy decisions use them as facilitating agency to advise the entrepreneurs.	2009	Task Force & DICCs
	Linkage of DICCs with Business Development Cell of BCPL	Business Development Cell of BCPL willhave close liaison with the DICCs for guiding the entrepreneurs and arrange awareness campaigns on technology and products among the potential entrepreneurs.	2010	BDC of BCPL &DICCs

Support for downstream plastic processing industries	Declaration of a special Package of Incentives for downstream industries apart from the incentives declared in the Industrial Investment Policy of Assam, 2008 and NEIIPP, 2007.	1. Single window clearance for setting up of unit in IPP 2.Waiver of 100% electricity duty (Which may be borne by Government and remitted to ASEB directly) for theunits set up in IPP 3. Since State Government is the major buyer, they may advise its Departments to maximize utilization of plastic in the infrastructure development work which will increase local demand. 4. Waiver of Entry Tax for the machinery brought by the entrepreneurs for setting up of plastic industries based on the downstream products of Assam Gas Cracker Project.	2010	Department of Industries & Commerce, Government of Assam,AIDC, DICC
		Declaration of similar Policy Initiatives by other State Governments of North Eastern States so that benefit of Assam Gas Cracker Project can spread all across North East	2011	State Governments of NER, Ministry of DoNER

Plastic Waste Management(PWM)	Plastic Waste Management Plan	To set up PWM Cell in Integrated Plastic Parks at Tinsukia and other proposed location in Nagaon.	2011	Department ofIndustries &Commerce,Governme nt ofAssam
		Development of Plastic Waste Recycling units and Waste-to-Energy plants in PPP	2011	Department of Industries & Commerce, Government of Assam
Create awareness about different plastic based products to the consumers &entrepreneurs	Organizing Fairs, Exhibitions and Seminars for creating awareness	At least 3 annual exhibitions to be arranged on Plastic Machinery / Products in three different locations in the North East to create awareness among potential entrepreneurs for a period of 5 years	2010 onwards	Govt. of Assam, BCPL, Ministry of DoNER, Ministry of Chemicals & Fertilizer, Industry Associations
		Annual PlastIndia Fair for NE	2010 onwards	Department of Industries&Commerce, Government of Assam,PlastIndia Foundation,Ministryof Chemicals& Fertilizers, GOI

		Arrange Seminars, Awareness Campaignson potential Downstream Industries	2010 onwards	Department of Industries&Commerce, Government of Assam BCPL, Ministry of DoNER,Ministry of Chemicals & Fertilizers,GOI ;Industry Associations
Promotion of Industrial Corridor	Declaration of Industrial Corridor in select region	Nagaon to Dibrugrah, Tinsukia, Margherita of NH 37 & 38, both sides to be declared as Industrial Corridor for growth of industry	2011	Department of Industries &Commerce, Government of Assam

8.2.4 Infrastructure for Connectivity

The infrastructure development for improvement of the connectivity may be addressed with the following perspective:

a. The cost of transportation by waterways is the cheapest.

b. The support given by Govt. of India through the Transport Subsidy is for a limited period, hence maximum benefit to be availedduring the period and sustainable measures to be taken up.

c. The plastic products are lighter and occupy more volume, thus transportation by waterways should be augmented with the road transportation in NE region.

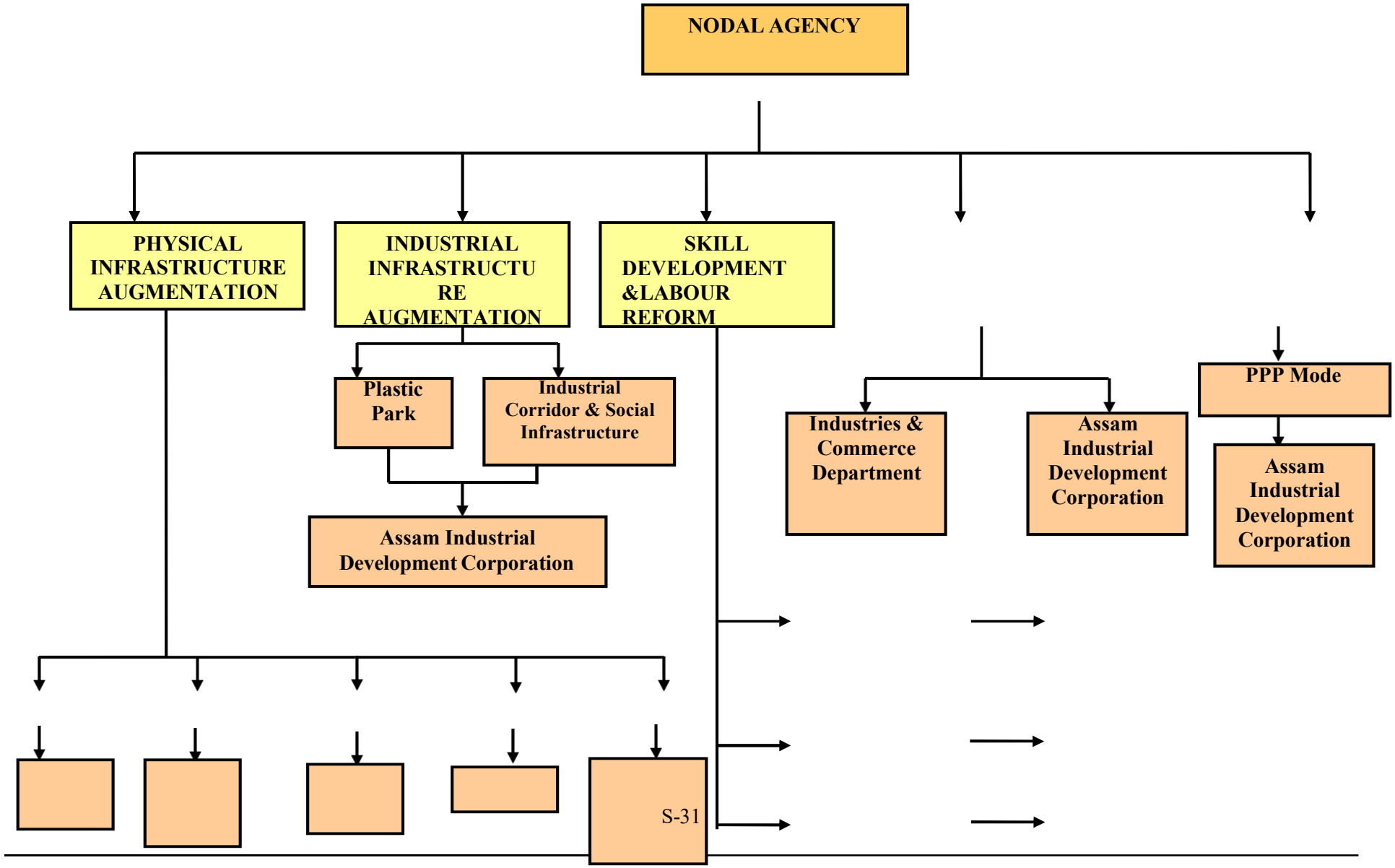
Thus, the Waterway No.2 needs to be made effective. While improvement in Road, Rail and Air Network is essential for overall development ofindustry and region as a whole, the improvement in waterways provides a competitive cost-effective means by reducing the transportation cost**.**

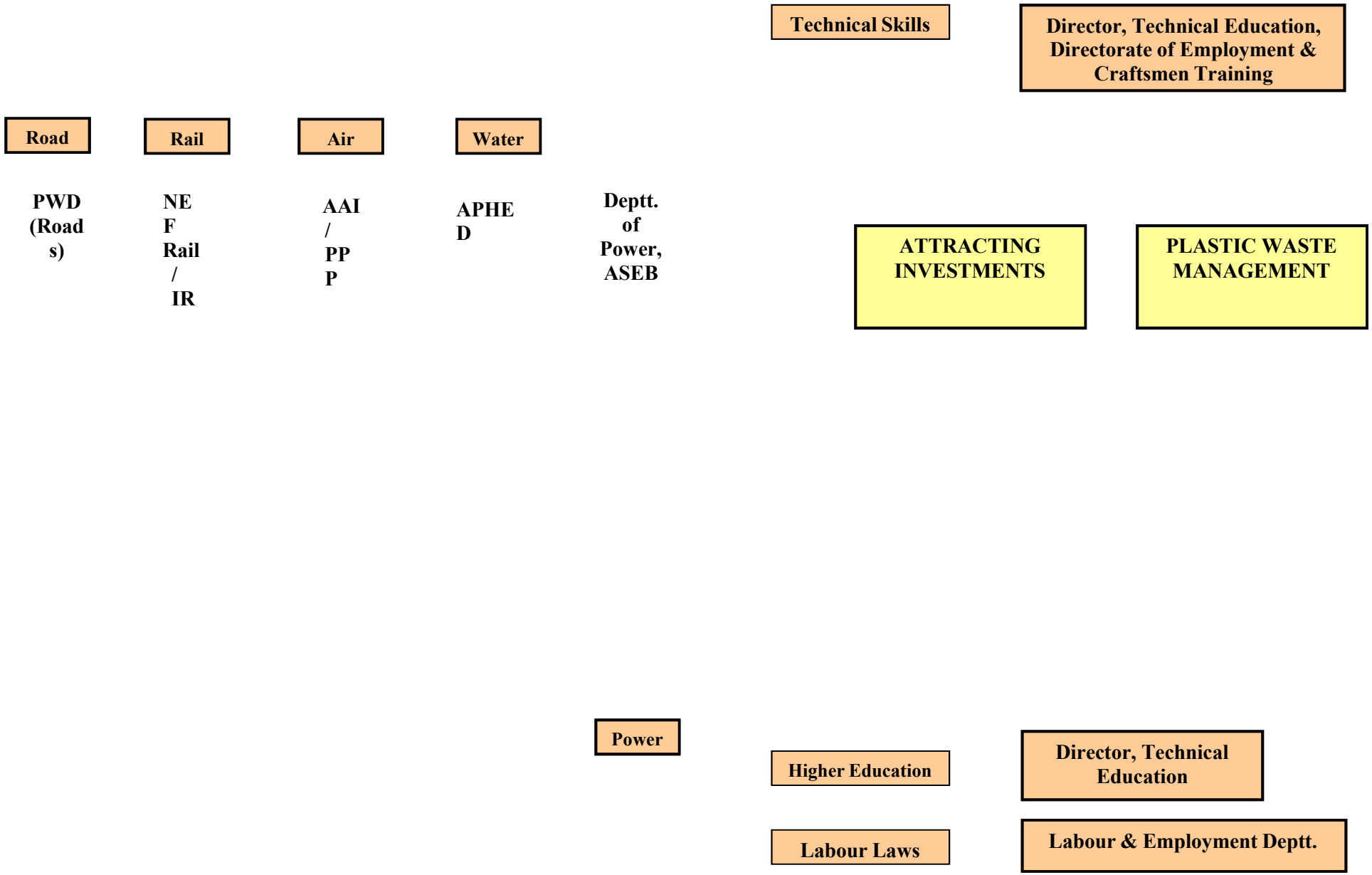
Objective	Action on	Specific Action(s) Required	Time Frame	Concerned Department (s)

Improvement of Inland Water Transport infrastructure	Inland Water Transport & National Waterway No. 2.	Guidelines for new Central Sector Schemefor Inland Water Transport Sector for the North Eastern States issued by Ministry of Shipping, Road Transport and Highways vide notification no. IW-14013/1/2008-IWT dated 27th August, 08 facilitates 100% Central assistance for comprehensive developmentof Inland Water Transport Sector in NE States. The support includes preparation ofDPR, Waterways Development, Navigational Aids, Terminal facilities, Supervision & consultancy for monitoring of the activities. The Government of Assam to initiatethe comprehensive proposal for developmentof Inland Water Transport Facility	2009	Inland Waterways Authority of India / Govt. of Assam / Ministry of DoNER
Objective	**Actionon**	**Specific Action(s) Required**	**Time Frame**	**Concerned Department (s)**
		Waterways development including excavation, dredging, canal marking for navigation etc. in order to make the Inland Water Transport system viable	2011	
		Provision of terminal and landing facilitiesat select locations along River Brahmaputra	2012	
		Improvement of cargo handling facilitiesand setting up of warehouses at strategic locations	2013	
		Introduction of navigatio facilities, night n channel marking etc.	2014	
		Development of waterway linkingTinsukia Plastic Park to National waterway at	2014	

		Dibrugarh		
Improvement of Road connectivity & infrastructure	Nagaon to Dibrugarh to Makum (NH-37) the proposed Industrial Corridor	Construction of 4-lane divided carriageway, with adequate ROW provision for 6-laning in future - Planned intersections and installation of signaling systems wherever required	2014	NHAI, PWD (Roads) Assam
	Makum to Lekhapani (NH-38) the proposed Industrial Corridor	Construction of 4-lane DividedCarriageway, with adequate ROW provision for 6- laning in future - Planned intersections and installation of signalling systems wherever required	2014	NHAI, PWD (Roads) Assam
	Baihata Charali to Kulajan (NH-52) Sector	Construction of 4-lane DividedCarriageway, with adequate ROW provision for 6- laning in future - Planned intersections and installation of signalling systems wherever required	2014	NHAI, PWD (Roads) Assam
	Truck Terminus, Bus Shelter, Bus Bays and other transportation facilities near by the Project site as well as near by the IPPs	Adequate provision to be made with proper infrastructure	2014	NHAI, PWD (Roads) Assam
Objective	**Actionon**	**Specific Action(s) Required**	**Time Frame**	**Concerned Department(s)**
Improvement of **Rail connectivity** &infrastructure	Railway link up to Dibrugarh	Continuous double-lining of the major BroadGauge railway link from Guwahati	2012	NEFR/Indian Railways
		Continuous electrification of the major BroadGauge railway link up to Dibrugarh	2019	NEFR/Indian Railways
Improvement of **Air connectivity** & infrastructure	Jorhat and Dibrugarh Airports	Modernizatio of passenger and freight n terminals at Jorhat and Dibrugarh Airports	2014	AAI/Private Developer
Improving of **Logistics and Warehousing** Facilities	Guwahati, Dibrugarh and, Tinsukia Railway Stations	Planning and construction of multi-modal transshipment facilities with warehouses truck- terminals and efficientfreight/goods handling systems at Guwahati and Dibrugarh,integrating with the existing Railway Stations	2014	NEFR/Indian Railways

8.3 Institutional Structure




Technical Skills
Director, Technical Education, Directorate of Employment & Craftsmen Training
Road
Rail
Air
Water
PWD (Roads)
NEF Rail / IR
AAI / PPP
APHED
Deptt. of Power, ASEB
ATTRACTING INVESTMENTS
PLASTIC WASTE MANAGEMENT
Power
Higher Education
Director, Technical Education
Labour Laws
Labour & Employment Deptt.

8.4 Credit Support Mechanism and Likely Sources of Funds

The financial schemes available at present have the potential of attracting industrial investments and rejuvenating ailing industrial units. However, a few additions are proposed, especially in connection with the development of the Assam Gas Cracker Project.

- Special financing schemes for plastic MSME to be developed by Banks & Financial Institutions. Long term interest free credit support to NEDFi / AIDC from GOI for soft financing plastic processing sector

- Extension of the schemes for small self-help groups or agriculture-related activities (by NABARD, NEDFi, SIDBI etc.) to small & medium scale enterprises, with special incentives for plastic processing units.

- Assistance for entrepreneurship development programs and skill developmentinitiatives in the plastic processing, polymer technology and related sectors, by NABARD and SIDBI.

- Special loans by nationalized banks for entrepreneurial ventures in the plastic processing sector.

Sources of Investments/Funds

Sl. No.	Component	Source(s) of Investment/Funds	Business Model
1	Physical & Social InfrastructureDevelopment	Government of India, State Government, Private Sector	Public, PPP
2	Plastic Parks & IndustrialCorridors	Government of India (IIUS of DIPP),State Government, Private Sector	PPP
3	Plastic Waste Management	State Government, Private Sector	PPP
4	Entrepreneurship & SkillDevelopment	Government of India, State Government, Private Sector	Public, Private, PPP