Department of Industries
Government of Kerala

Invest in Kerala, Invest in Quality

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Advantage Kerala

Advantage Kerala

Kerala has for many years and continues to lead India on the social development front and leader in achievement of Sustainable Development Goals relating to health, education and gender equality. Numerous initiatives established in Kerala have gone on to be emulated at the National Level.

The Kerala Government is very keen to transform Kerala into a vibrant entrepreneurial society with inclusive, eco-friendly and sustainable economic growth. Kerala is looking to develop its industrial infrastructure and attract investments on a large scale and aims to become one of the top ranking States in the Country as far as Ease of Doing Business is concerned. Investments in the state will drive growth and raise the quality of life of its citizens. It will enable us to compete at an international level in terms of economic growth.

The government has taken very bold steps like 'The Kerala Investment Promotion Facilitation Act 2018, KSWIFT- online single window facility clearance mechanism, an Invest Kerala Web-portal-(www.invest.kerala.gov.in) a ready reckoner web-portal for Investor facilitation, and many other reforms at the department level. Further, an Investment Promotion and Facilitation Cell has been constituted at the State and District levels on behalf of the Kerala State Single Window Board and it will be responsible for the smooth interaction with applicants for issuing speedy approvals.

Parks based Industrial Developments are being planned in the state. Industrial parks for all thrust sectors are being developed and Plug & Play facilities are envisaged in each sector wise parks. Infrastructure development of the state is now augmented through Kerala Infrastructure Investment Fund Board (KIIFB), a government owned financial institution of Kerala to mobilize funds for infrastructure development.

In Kerala, Investment opportunities in potential sectors like Manufacturing, Logistics, Industrial infrastructure, Marketing Hubs, Hospitality & Tourism, Information Technology, Bio Technology, Knowledge based industries, Healthcare, Retail etc. are expected to be 50,000 Crore INR or 7 billion US dollars.

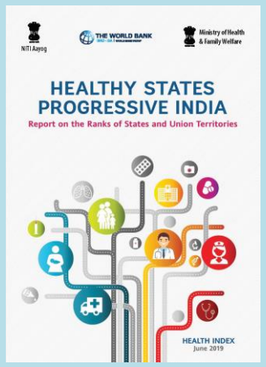
Kerala with abundant natural resources, skilled manpower, huge deposits in banks, world renowned traditional and ethnic products act as catalyst for potential investment. A new industrial culture beckons investors within India and abroad to participate in the growth story of this renowned state.

We extend a warm welcome to all entrepreneurs to Kerala, the God's Own Country.

Kerala: Social Infrastructure Advantage

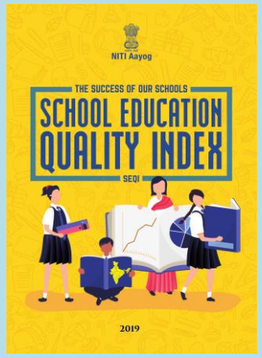
Health Index

Ranked **1st** in the Country



School Education Quality Index

Ranked **1st** in the Country



Sustainable Development Goals India Index

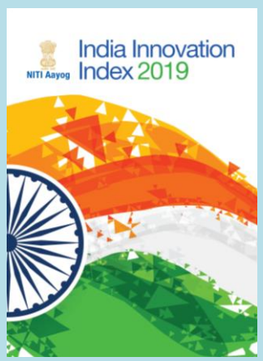
Front Runner

State in the Country

India Innovation Index

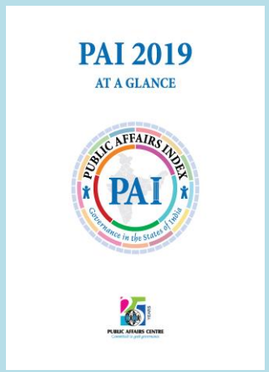
Top

State in the Country



Public Affairs Index 2019

Ranked **1st** in the Country



Kerala: Industrial Infrastructure Advantage

- **4 international airports - Highest number of airports with global connectivity.**
- **Kerala is strategically located on the trans-national trade corridor connecting Europe and Pacific rim.**
- **MSME sector in Kerala - diverse in terms of its size, levels of technology employed, and range of products and services produced.**
- **An enabling Industrial Policy to transform Kerala into a vibrant entrepreneurial society with faster, inclusive and sustainable growth.**
- **Eminent startup ecosystem - first state in the country to formulate a policy for the development of the startup ecosystem.**
- **Compared to the national tele-density of 77.12, Kerala has a high tele-density of 96.74.**
- **Kerala is one of the few Indian States with abundant supply of potable water (**Networked by 44 rivers**).**
- **Access to talent pool - abundant talent pool with nearly 16 thousand students graduating per year**

Ease of Doing Business in the state

Key initiatives to boost investment in Kerala

Ease of Doing Business Reforms

Kerala Industrial & Commercial Policy 2018

KSWIFT: Kerala Single Window Interface for Fast and Transparent Clearance

Online Intelligent Building Plan Management System (IBPMS)

Invest Kerala Portal

- Publishing of SoP's and Checklists
- Online single window clearance mechanism
- Monitoring Committees at State, Districts and Industrials Parks
- Central Inspection System for compliance inspections.
- Introduction of Self Certification regime Third Party Certifications
- Exemptions for green and white category industries
- Revamped Single Window Boards at State, Districts and Industrial Parks.
- Delegation of Power to district levels
- Parallel processing of application
- Joint inspections by Department
- Deemed approvals post the mandated timelines
- Elimination of redundant clearances
- Spot approval for registrations
- Auto renewal of Licenses
- Stop Memos to be issued only based on merit
- Engaging of Head Load Workers regularized
- Increased validity of Licenses.

Kerala is undertaking significant reforms and launching key initiatives to ensure it is all set to become a Business and Investment friendly State.

Catalysts for Industrial Growth

Kerala State Industrial Development Corporation (KSIDC)

- KSIDC has initiated major industrial and infrastructure projects, which are strategically important to Kerala's industrial and economic development.
- KSIDC also plays a vital role in entrepreneurship development.
- It has over 5 decades of proven track record of attracting a commendable volume of investment to the state with more than 750 projects.

Directorate of Industries & Commerce (DIC)

- Acts as a facilitator for industrial promotion and sustainability of MSMEs (Micro Small or Medium Enterprise) and traditional industrial sector.
- DIC is the control centre for the 14 District Industries Centres, 2 Common Facility Service Centres, Documentation Centre, 39 Development Areas having a total acquired area of 2424.26 acre.

Kerala Industrial Infrastructure Development Corporation (KINFRA)

- KINFRA is dedicated to catalyze Industrial growth in Kerala by providing the best industry specific infrastructure.
- Over the past 25 years it has developed 24 well-defined Industrial parks, paving the way for the launch of 700 units creating 20,000 direct jobs in the state.

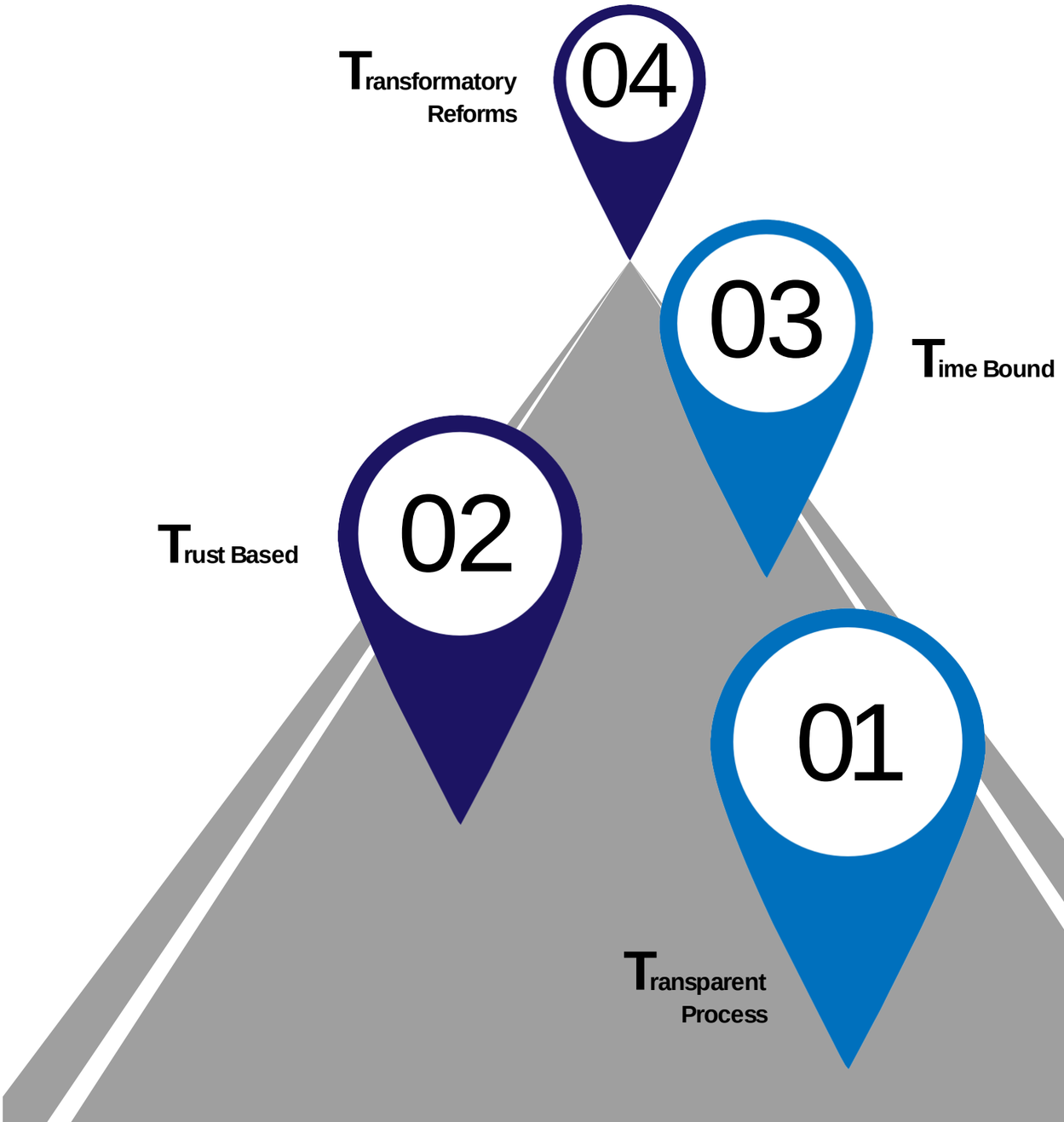
Kerala Small Industries Development Corporation (SIDCO)

- SIDCO acts as a 'Total Solution Provider' for Small Scale Sector offering facilities and assistance to set up small scale units across Kerala.
- Infrastructure under SIDCO include Major Industrial Estates, Mini Industrial Estates, Industrial sheds, Industrial Parks and Production units.

KSIDC | Government of Kerala Directorate of Industries & Commerce | KINFRA INSPIRING GROWTH | KERALA SIDCO LTD

4T's

The Foundation of Ease of Doing Business in Kerala



Top EoDB Reforms

- Access to Information and Transparency Enablers
- Single Window Clearance
- Environmental Registration Enablers
- Availability of Land
- Construction Permit Enablers

Ease of doing business initiatives in Kerala aims to transform the state into a vibrant investor friendly destination and to accelerate its industrial growth and employment generation across all categories. Government of Kerala have taken earnest steps to improve micro and macro factors contributing to the successful running of business environment in the state. The amendments / modification made as a part of the Ease of Doing Business initiatives will create an enabling environment for establishing, running and winding up enterprises in the state through transparent processing of application with clearly defined procedures, evaluation criteria and timelines.

K-Swift

Kerala Single Window Interface for Fast and Transparent Clearance

www.kswift.kerala.gov.in

An elaborate e-platform to facilitate the citizen – government interface focusing on the transparency dimension will be a game changer in the Ease of Doing Business arena of the state. A transparent fast track online system for entrepreneurs to avoid procedural delays in getting statutory clearances from various authorities concerned throughout the life-cycle of projects.

K-Swift Advantage

- Entrepreneur friendly portal to obtain NOC's with minimal 'running around'.
- Real time status update on the clearance process with timelines.
- Auto generation of deemed approval based beyond set timeline.
- Common Application Form, Integrated payment mechanism.
- Downloadable digital approvals at finger tip.

Invest Kerala Portal

www.invest.kerala.gov.in

A common integrated web portal named "Invest Kerala", for the Department of Industries and Commerce, Government of Kerala (GoK). The portal will act as a single window facilitator for investment promotion for prospective and aspiring investors.

The Invest Kerala Portal will enable the Department of Industries and Commerce in areas such as

- Single window facilitator for investment promotion
- Integrated view of various information/ activities/ services of existing portals of KINFRA, DIC, KSIDC, K-BIP.
- Incorporation of the requirements of Ease of Doing Business initiatives of the state.
- Common repository for land bank details, investor wizard, various services, schemes, lenders, and relevant reports.
- Dynamic investor query resolution.

Intelligent Building Plan Management System (IBPMS)

www.ibpms.kerala.gov.in

Repository of information on various investment opportunities in the state, details of land bank, schemes of various departments, information in services available.

The Kerala government launched an Intelligent Building Plan Management System (IBPMS) that provides single-point, integrated and holistic online development permissions to applicants in specified timelines for Ease of Doing Business (EODB).

Thrust Sectors

Explore Kerala

Investment Opportunities

Explore Kerala

Promising Investment Opportunities

Kerala is fast emerging as one of the most preferred investment destinations in the country. The state has shown tremendous growth in its industrial and services sectors in the past decade. The Government of Kerala has rolled out many policy reforms to clear the hurdles for investment and accelerate industrial growth. The socially evolved state offers an investment climate with a skilled work force and a managerial class sensitive to local culture and international milieu.

The state in its journey to create an investment climate keeping in mind the objective of sustainable and eco-friendly development has brought reforms in policy regulation, law and order, setting up infrastructure, connectivity through road, rail, air and sea etc. Kerala has invested heavily in developing infrastructure facilities like power, transport system, airports, ports and sector specific industrial parks and is taking efforts to attain a balanced and sustainable industrial growth, and to convert Kerala into global trade hub and an investor-friendly state, without hampering the ecology and environment of 'Gods own country'.

Government of Kerala aims to take the state to a next version of economic development and is looking forward to create comprehensive investment opportunities across sectors. To accomplish this, the state is inviting investments to fuel further growth in the state across sectors. Government shall offer various incentives to existing as well as new units. Various project profiles are showcased for investors to take-off their industrial journey in the state. Projects are classified as per below criteria.

The Government of Kerala has been pro-active and has taken up many initiatives to ease the doing business environment in the state.

Category	Investment (in INR Crores)		Direct Employment
Small Scale	Less than 10	And/or	50 to 200
Medium Scale	10 to 50	And/or	200 to 300
Large Scale	50 to 100	And/or	300 to 500
Mega Projects	100 or more	And/or	> 500

Proposed Investment Frameworks

Special Purpose Vehicle (SPV) Model

- (SPV) is a legal entity created for a specific purpose. A SPV (usually structured as LLC) can be used as a funding structure, by which all investors (or investors under a given investment threshold) are pooled together into a single entity.
- It's a **off-balance sheet model** of investment for parties involved.

Co-Developer Model

- Under this model of agreement, one developer who possesses the land enters into an agreement with another developer to joint develop **without creating a separate legal entity**
- Agreement stipulates the responsibilities of parties involved in insurance, cash flow, books and accounts etc.

Direct Investment Model

- Direct Investment is allowed for Construction-Development projects to achieve the central government objective of 'Housing for all'
- 100% FDI is also permitted in completed projects for operation and management activities
- Exit norms for foreign investors eased considerably

Exit Strategies

Exit plans would be structured based on discussion with the investors. Few possible options are:

- Strategic investor to be identified at appropriate valuation and lifecycle of the project – players looking at consolidation
- Exit models to be explored, such as InvIT, Future IPO at the main or alternate markets and others.
- Explore opportunity for government to buy back
- Strategic acquisitions or mergers or management buyout

Explore Kerala

Project Profiles

Petrochemical Park

Overview

KINFRA proposes to develop a Petrochemical Park of international standards at Ambalamugal, in Ernakulam district of Kerala. The project is intended to create an Industrial Park with all modern facilities exclusive for the Petrochemical downstream Industry. The Petrochemical Park is established in approximately 481.79 acres in the FACT premises. The Park is expecting investments in the field of automobile industry, Building Construction, Plastic Industry, Pharmaceutical, textile, Consumer Durables etc. Propylene Derivative Petrochemical Project (PDPP) of Kochi Refinery is expected to complete in 2019. Major products expected are Plasticisers, Paint & Resin formulation, Dyes, Herbicides, textile finishing, Solvents and Acrylate esters, Paper printing chemicals, Pharmaceuticals, powder coating products, leather finishing,etc.

INR 35344 Crores

Exports of major petrochemicals in India during 2016-17

Import of major petrochemicals stood at INR 84537 crores in 2016-17 with a CAGR of 5.21%

Petrochemicals account for 30 per cent of the country's USD 120bn chemical industry in 2016, which is likely to grow about 11 per cent in the coming years to hit US$250 billion by 2025

Major Petrochemical Market in India

- The Indian Government allows 100% FDI in chemicals sector and the domestic petrochemical industry is in the process of investing over USD 25 Bn.
- The expanded BPCL refinery at Kochi will produce 5 lakh tonnes of propylene annually, the basic raw material for the petrochemicals units.
- Polymer production constituted 23% of total major petrochemical production in India during 2016-17.

Star Project

Infrastructure

Ambalamugal
Ernakulam

INR 1,864 Cr
USD 263 MN

NH 544
NH 66
NH 49

Ernakulam Junction (ERS)
Ernakulam Town (ERN)
Tripunittura (TRTR)

Cochin International Airport

Cochin Port

15.5 mn Tonnes

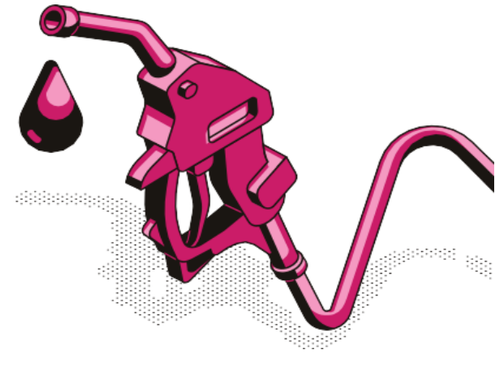
Expanded capacity of Kochi refinery of BPCL, up from 9.5 MN tonnes

36422 thousand MT

Production of major petrochemicals in India 2016-17

Key players

- Indian Petrochemicals Corporation Limited (IPCL), Reliance Industries Limited (RIL) and Oil and Natural Gas Corporation (ONGC) in Gujarat
- Petroleum, Chemical & Petrochemical Investment Region (PCPIR) -a specifically delineated Investment Region being developed in n Andhra Pradesh, Gujarat, Odisha and Tamil Nadu



Project Parameters

01 Capacity

Admin Building & technical centre; Contract R&D lab; Water Works; Common Effluent Treatment Plants; Electric Substations; Truck Terminals

02 Land

481.79 Acres in FACT premises

03 Raw Material and Utilities

Raw material: The petrochemical feed stock available by expansion of M/s BPCL during 2019-2022 are Propylene, ISO butylene, Toluene, Butene, Benzene, Acrylic Acid, N/I-Butanol, 2-Ethyl Hexanol, 2-Ethyl Hexyl Acryate and by the year 2022 feed stock like Propylene Glycol, Mono Ethylene Glycol and Super Absorbent Polymer (SAP).

Power: A 220 KV electric substation is located at Brahmapuram with a radial distance of 0.8 km from the centre of the project sites and another 220/110 KV electric substation is located at FACT premises. A 66 KV HT line also passes the site boundary.

Fuel: Availability of Natural Gas through pipelines

Water: A 45 MLD Water Treatment plant is being constructed in the project region. There is a 6.5 MLD WTP at KINFRA Export Promotion Industrial Park to meet the initial demand, water can be tapped from the existing source which is at a distance of 5 km from project site

04 Project Cost

Land cost -INR 1,264 crore | Project cost -INR 600 crore

Total cost of the project is INR 1864 crore

05 Means of Finance

Kerala Infrastructure Investment Fund Board (KIIFB) will be funding the entire INR 1,864 crore

06 Common Infrastructure Facilities

Administration building and technical center

Contract R&D lab

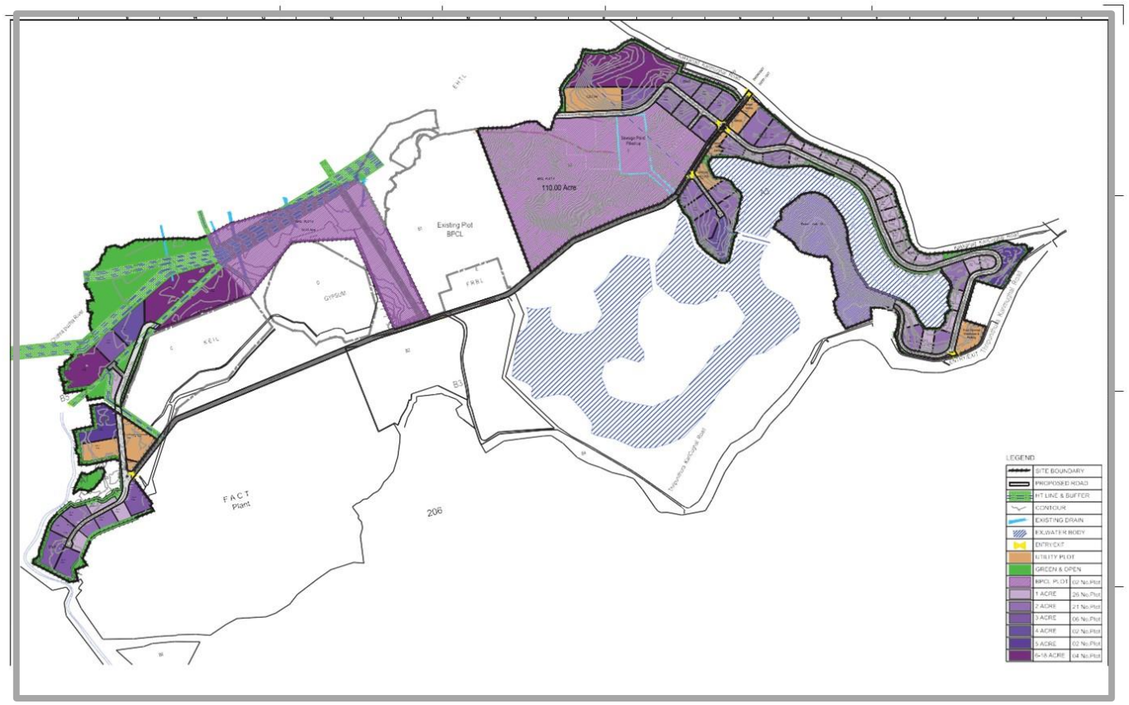
Water Works (For water treatment plant/Overhead tank)

Common Effluent Treatment Plants

Electric substations(Main receiving substation and zonal substation)

Truck terminals and warehouses

Proposed Plant Layout



PARK AREA STATEMENT

TYPE	AREA (SQ.M)	ACRE	%
Petrochemical Plots	601478.2	148.63	48.87
Pharama Plots	121406.6	30.00	9.86
Utility	26093.8	6.45	5.57
CEPT-1	28328.0	7.00	
CEPT-2	14164.0	3.50	
Truck Terminal Warehouse	33131.4	8.19	2.69
Road	133897.2	33.09	10.88
Green*	272237.3	67.27	21.12
Subtotal	1230736.5	304.12	100
BPCL Plot-1	445154.2	110	
BPCL Plot-2	242811.4	60	
TOTAL	1918702.0	474.12	
FACT Road	62078.8	15.34	
GRAND TOTAL	1980780.8	489.46	

**Additional 10.88% green will develop in the plots*

Market Landscape

- Petrochemicals are considered as enablers for growth of other sectors of the society. They are derived from various chemical compounds, mainly hydrocarbons. These hydrocarbons are derived from crude oil and natural gas.
- The basic petrochemicals are synthetic fibres, polymers, elastomers, synthetic detergent intermediates, performance plastics, fibre intermediates, olefins and aromatics
- Deepak Petrochemicals, Kothari Petrochemicals, Hindustan Organic Chemicals, Mareena Chemicals and SK Global Chemicals are few of the players operating in this space
- With the emphasis on 'Make in India' and the many investor summits organized by different states, the interest in this sector is brimming
- BPCL Cochin refinery completed a major capacity expansion from 9.5 MMTPA to 16.5 MMTPA. This expansion would lead to production of 500000 TPA.

The Petrochemical plant offers varied opportunities for various projects that operate using BPCL Petrochemical plan products/outputs as their key raw materials. The varied opportunities are listed below and brief description of their offerings are detailed in subsequent section.

1. Acrylic Fibre
2. Acrylonitrile butadiene styrene (ABS)
3. Surfactants And Others
4. Acrylic Polymers
5. Nuclear Solvents
6. Shoe Soles
7. PU (Polyurethane) Urea Resin
8. Polyacrylate Powder and Dispersion
9. HP (Hydroxypropyl) Methylcellulose
10. PU Adhesives
11. Acrylamide, Polyacrylamide
12. Alkoxylates

Investment Opportunity

The proposed Petrochemicals Park offers facilities like Single Window Clearance facility, complete eco-friendly infrastructure, shared common infrastructure facilities and land in parcels and built up spaces available for establishment of units on lease basis. The Department of Chemicals and Petrochemicals, GoI, has also launched some schemes to promote this sector like 'Setting up of centres for Excellence in Petrochemicals Sector'. This Petrochemicals Park will create more employment in the state and would accommodate about 20 small and medium scale companies. This state of the art facility welcomes all investment opportunities to develop their industries here and reap the benefits of it. The proposed petrochemical park is poised to play a key role in bridging the demand supply gap of chemicals in South India. This proposal assumes significance in view of expansion plans of BPCL.

ACRYLIC FIBRE

01 Brief Description

Acrylic fibres are soft and light fibres having light and warm tactile feeling to the human skin and are widely used in knitted products such as sweater and jersey; bedding textiles such as blankets, carpets, rag animals and western wigs.

02 Plant capacity per annum

20,000 MT

03 Market landscape

- Imports are estimated to have accounted for about 32% of the domestic consumption in fiscal 2017
- Domestic demand for ASF increased at nearly 3% CAGR between fiscals 2012 and 2017.

04 Raw Materials

- Acrylonitrile is the key raw material for the manufacture of acrylic fibres.
- The requirement of raw material is estimated at 18,000 MT/year of Acrylonitrile
- Currently, Reliance is the only producer of acrylonitrile in India with 41,000 TPA capacity. However, Reliance production is not sufficient to meet the domestic demand.
- Hence, acrylonitrile is imported. Post commissioning of BPCL plants, domestic availability of acrylonitrile would increase.

05 Source of Technology

Vardhman has sourced the wet spun technology from Japan Exlan Co Ltd; Pasupati Acrylon Ltd in technical collaboration with SNIA BPD, Italy; Indian Acrylics Ltd in collaboration with EI du Pont de Nemours & Co, USA, and uses state-of-the-art Du-Pont technology to manufacture dry spun mono component fibres.

06 Project cost

INR 250 Crore

07 Employment Potential

450 Nos.

08 Land Requirement

5,00,000 SQM

ABS, SAN

01 Brief Description

Acrylonitrile butadiene styrene (ABS) is an engineering or performance plastic, which is used across various segments including home appliances, electronics, and automobiles. ABS can also be used in specific applications through co-polymerising, changing polymer composition, and blending.

02 Plant capacity per annum

ABS: 85,500 MT/year
SAN: 3,500 MT/year

03 Market landscape

- Demand for ABS is expected to increase at 6-7% CAGR up to 2022.
- ABS demand from the automobiles segment is also expected to witness 11% CAGR led by expected growth in automobiles production.

04 Raw Materials

- The requirement of raw material is estimated at 18,000 MT Acrylonitrile/ year.
- Currently, Reliance is the only producer of acrylonitrile in India with 41,000 TPA capacity.
- But Reliance's production is not sufficient to meet domestic demand.
- Hence, acrylonitrile is imported. Post commissioning of BPCL plants, domestic availability of acrylonitrile would increase.

05 Source of Technology

Only two players manufacture ABS resin in India, namely, Bhansali Engineering Polymers and Ineos Styrolution. Bhansali, being the domestic player, has set up a plant in technical collaboration with Sumitomo Nagatuck Limited, Japan. Ineos Styrolution has its own technology.

06 Project cost

INR 200 Crore

07 Employment Potential

300 Nos.

08 Land Requirement

40,000 SQM

SURFACTANTS AND OTHERS

01 Brief Description

Surfactants play an important role as cleaning, wetting, dispersing, emulsifying, foaming and anti-foaming agents in many practical applications and products such as detergents, fabric softeners, emulsions and soaps.

02 Plant capacity per annum

Surfactants - 72,000 MT
Others - 61,000 MT

03 Market landscape

- Surfactants' main end-user segment is the soaps and detergents industry.
- Estimated market size of Rs 345-360 billion. Demand growth (volume) in the range of 4-6% CAGR.

04 Raw Materials

- Ethylene oxide (48,000 MT/year) and propylene oxide(30,000 MT/year) are key raw materials for the manufacture of surfactants.
- Currently, India Glycols and Reliance Industries are the major producers of ethylene oxide, with a combined capacity of 27,0000 TPA.
- Hence, domestic consumers depend completely on imports for propylene oxide.
- After the commissioning of BPCL plants, there will be an increase in the availability of ethylene oxide and propylene oxide.

05 Source of Technology

Manufacturing surfactants is not technology-critical and Indian companies have developed in-house technology. Collaboration with global companies aids the domestic companies in strengthening technological capabilities. For example, global company Harcros Chemicals acquired a stake in an Indian company, Venus Ethoxyethers, which paved the way for superior technology transfer.

06 Project cost

INR 120 Crore

07 Employment Potential

100 Nos.

08 Land Requirement

1,80,000 SQM

ACRYLIC POLYMERS

01 Brief Description

Acrylic polymers are used in a variety of water treatment applications.

02 Plant capacity per annum

60,000 MT/year

03 Market landscape

- Water treatment chemicals, which had a market size of Rs 25-30 billion in fiscal 2017 is expected to clock a CAGR of 15% over the next five years.

04 Raw Materials

- Butyl acrylate(13,000 MT/year) is the key raw material used for manufacturing acrylic polymers.
- Currently, no Indian player produces this chemical and are completely dependent on imports.
- Post the commissioning of plants by Bharat Petroleum Corporation Ltd (BPCL), there will be domestic availability of butyl acrylate.
- BPCL will have a 18,0000 TPA capacity butyl acrylate plant.

05 Source of Technology

The manufacturing technology for water treatment chemicals is available with global players only. Some of the global companies having subsidiaries in India are Nalco-Ecolab (USA), GE Water Process & Technologies (USA), and Kemira (Finland). Over the past few years, several Indian companies have entered into a JV with global companies such as IVRCL with Kemira (Finland), Chembond with Solenis (USA), and Voltas with Dow Chemical (USA).

06 Project cost

INR 65 Crore

07 Employment Potential

300 Nos.

08 Land Requirement

70,000 SQM

NUCLEAR SOLVENTS

01 Brief Description

The solvents of tri-butyl phosphate (TBP), tri octyl phosphine oxide (TOPO), tri-iso amyl phosphate (TiAP), Mono ester of 2 ethyl hexyl phosphonic acid (D2EHPA-II) and dihexyl octanamide (DHOA) are useful for the extraction of strategic metals in the front and back end of nuclear fuel cycle and also in the field of hydrometallurgy for the extraction of other metals.

02 Plant capacity per annum

150 MT/year

03 Market landscape

- Currently, nuclear solvents are not available in the Indian market. Therefore, for
- self-reliance in these solvents, Heavy Water Board planned to start the production of these solvents.

04 Raw Materials

- Butanol and 2-ethyl hexanol are the key raw materials. The requirement of raw material is estimated at 25 MT of 2-ethyl hexanol and 150 MT/year of Butanol. Andhra Petrochemicals is the only producer with nearly 80,000 TPA oxo-alcohol capacity.
- Domestic production is not sufficient to meet domestic demand. After the commissioning of BPCL plants, domestic availability of 2-ethyl hexanol and butanol would increase. BPCL will have 45,000 TPA of production capacity of butanol.

05 Source of Technology

Indian Department of Atomic Energy has entrusted Heavy Water Board for the development of the technology and production of these solvents.

06 Project cost

INR 38 Crore

07 Employment Potential

50 Nos.

08 Land Requirement

12,000 SQM

SHOE SOLES

01 Brief Description

The sole of a shoe, also known as the outsole, is the bottom part of the shoe that comes in direct contact with the ground. Shoe soles are made from a variety of different materials.

02 Plant capacity per annum

Polyeurathane (PU) Chemical : 330 MT/year (18,000 pairs per day)

03 Market landscape

- The domestic footwear market is expected to grow at a rate of 16-17% up to 2020.

04 Raw Materials

- Polyuretane (PU) chemical (330 MT/year) is the key raw material used in manufacturing shoe soles.
- Currently, a few Indian players such as Manali and Expanded Polymers produce this chemical. Manali has 50,000 TPA capacity, while Expanded Polymers has 24,000 TPA capacity.
- Capacities are on the low side owing to the unavailability of the upstream raw material propylene oxide.
- Hence, Indian players significantly depend on imports. Post commissioning of BPCL's plants, the domestic availability of PU chemical will increase.

05 Source of Technology

Polyurethane reaction injection moulding (RIM) technology was developed in the late 1960s by Bayer AG. PU injection technology machinery is easily available from various domestic manufacturers.

06 Project cost

INR 26 Crore

07 Employment Potential

250 Nos.

08 Land Requirement

20,000 SQM

PU (POLYURETHANE) UREA RESIN

01 Brief Description

PU (polyurethane) urea resin finds usage in high-quality offset printing inks and UV overprinting varnishes.

02 Plant capacity per annum

6000 MT

03 Market landscape

- The domestic printing industry valued at Rs 300-350 billion to grow at 8-9% CAGR during 2019-2022

04 Raw Materials

- Polyol is the key raw material for the manufacture of PU Urea resin. The requirement of raw material is estimated at 1,400 MT/year of Polyols.
- Currently, only a few Indian players such as Manali and Expanded Polymers produce this chemical. Less capacities are due to unavailability of upstream raw material propylene oxide. Hence, Indian players are significantly dependent on imports. Post commissioning of BPCL plants, domestic availability of polyol will increase.

05 Source of Technology

PU urea resin manufacturing is not technology critical. The plant machinery required such as reaction vessel and dilution vessel are readily available in the domestic market. However, raw material formulations are kept confidential by companies.

06 Project cost

INR 20 Crore

07 Employment Potential

100 Nos.

08 Land Requirement

15,000 SQM

POLYACRYLATE POWDER AND DISPERSION

01 Brief Description

Polyacrylate is used in paints and other surface coatings, adhesives, and textiles. Polyacrylate is also widely used as a cosmetics ingredient for its uniform viscosity, high shelf life, anti-bacterial properties, and mould growth resistance.

02 Plant capacity per annum

Polacrylate powder - 6000 MT/year
Polyacrylate dispersion - 7200 MT/year

03 Market landscape

- Cosmetics industry revenue, which is estimated at INR 24-25 billion in fiscal 2017, is expected to grow at a compounded annual growth rate of 10-12% between fiscals 2017 to 2022.

04 Raw Materials

- Acrylic acid and butyl acrylate are the key raw materials for the manufacture of paint emulsions. The requirement of raw material is estimated at 6000 MT of acrylic acid and 220 MT/year of butyl acrylate. Currently, these chemicals are not produced in India and domestic players are completely dependent on imports.
- Post commissioning of Bharat Petroleum Corporation Ltd (BPCL)'s plants, these will be domestically available. BPCL's acrylic acid plant will have 16,0000 TPA capacity and butyl acrylate plant, 18,0000 TPA capacity.

05 Source of Technology

Polyacrylate manufacturing is not technology critical. The plant machinery required, such as reaction vessels, are ready available in the domestic market.

06 Project cost

INR 12 Crore

07 Employment Potential

50 Nos.

08 Land Requirement

24,000 SQM

HP (HYDROXYPROPYL) METHYLCELLULOSE

01 Brief Description

HP methylcellulose is a white to light tan, free-flowing powder. As a coating agent, it is widely used in the pharmaceutical industry.

02 Plant capacity per annum

350 MT/year

03 Market landscape

- The domestic formulations industry is poised to grow at a CAGR of 10-11% over 2016-17 to 2021-22.

04 Raw Materials

- Propylene oxide (60 MT/year) is the main raw material for the manufacturing of HP methylcellulose.
- Currently, only Manali manufactures 27,000 TPA propylene oxide for in-house consumption. Hence, domestic consumers depend completely on imports.
- After the commissioning of BPCL's plants, propylene oxide will be locally available.

05 Source of Technology

Manufacturing of HP methylcellulose is not technology critical. Machinery required such as reaction vessel is easily available in the domestic market. However, raw material formulations and operating parameters are kept confidential by the companies.

06 Project cost

INR 11 Crore

07 Employment Potential

50 Nos.

08 Land Requirement

6,600 SQM

PU ADHESIVES

01 Brief Description

PU Adhesives find usage in the footwear industry

02 Plant capacity per annum

5000 MT/year

03 Market landscape

- The domestic footwear market is expected to grow at a rate of 16-17% up to FY 2020.

04 Raw Materials

- PU (700 MT/year) is the key raw material for the manufacture of PU Adhesives.
- Currently, a few Indian players such as Manali and Expanded Polymers produce this chemical. Less capacities are due to unavailability upstream of raw material propylene oxide.
- Manali has 50000 TPA capacity, while Expanded Polymers has 24,000 TPA capacity. Hence Indian players are significantly dependent on imports.
- Post commissioning of BPCL plants, domestic availability of PU chemical will increase.

05 Source of Technology

PU Adhesives are produced by simple blending of PU chips, solvent and additives. Hence it is not technology critical. However, formulations for blending are critical and players maintain the formulations confidential.

06 Project cost

INR 10 Crore

07 Employment Potential

25 Nos.

08 Land Requirement

7,000 SQM

ACRYLAMIDE, POLYACRYLAMIDE

01 Brief Description

Acrylamide is the intermediate raw material for the production of polyacrylamide. Polyacrylamide is a raw material for the manufacture of water and wastewater treatment chemicals.

02 Plant capacity per annum

2,60,000 MT/year

03 Market landscape

- The water treatment chemicals industry is the end-use sector for polyacrylamide. CRISIL Research expects the Rs 25-30 billion market (fiscal 2017) for water treatment chemicals to grow at a compounded annual growth rate of~15% over the next five years.

04 Raw Materials

- Acrylonitrile and acrylic acid are the key raw materials for the manufacture of acrylamide and polyacrylamide.
- Currently, Reliance is the only producer of acrylonitrile in India with 41 KTPA capacity.
- However, its production is not sufficient to meet domestic demand.
- Hence, acrylonitrile is imported. No Indian player manufactures acrylic acid, and hence, the industry is completely dependent on imports.
- Post commissioning of Bharat Petroleum Corporation Ltd (BPCL)'s plants, however, domestic availability of acrylonitrile and acrylic acid are expected to increase. The BPCL acrylic acid plant will have 160 KTPA capacity.

05 Source of Technology

Acrylamide is industrially produced by the catalytic hydration of acrylonitrile with reduced copper salts. Alternatively, acrylamide production based on bio-enzyme catalysts for higher product yields is also available. Many players have patented the production technology globally. Indian acrylamide producer SNF India has a technology agreement with Nitto (Japan). Mitsui Chemicals is the leading technology provider in this segment.

06 Project cost

INR 200 Crore

07 Employment Potential

250 Nos.

08 Land Requirement

202,000 SQM

ALKOXYLATES

01 Brief Description

Alkoxylates are used as emulsifiers, wetting agents, or detergents in applications like paints and coatings, agrochemicals, paper and textile processing, institutional cleaning and oilfield chemicals.

02 Plant capacity per annum

15,600 MT

03 Market landscape

- Alkoxylates main end use is as surfactants in the soaps and detergents industry that grow at a CAGR of ~15% over the next five years.

04 Raw Materials

- 2-ethyl hexanol (9400 MT/year) and butyl acrylate (940 MT/year) are the key raw materials used to manufacture plasticisers.
- Currently, Andhra Petrochemicals is the only producer of 2-ethyl hexanol in India.
- Domestic production is not sufficient to meet domestic demand. Hence, 2-ethyl hexanol is imported.
- As no Indian player manufactures butyl acrylate, it can only be sourced through imports.
- Domestic availability of 2-ethyl hexanol and butyl acrylate will increase once the BPCL plants are commissioned.
- BPCL will produce 47,000 TPA of 2-ethyl hexanol and 18,0000 TPA of butyl acrylate.

05 Source of Technology

Alkoxylation is not technology critical and Indian companies have developed in-house technology. However, collaboration with global companies aid domestic companies in strengthening their technological capabilities.

06 Project cost

INR 6 Crore

07 Employment Potential

30 Nos.

08 Land Requirement

2,600 SQM

Multi-Modal Logistics Park

Mega Project

Infrastructure

Kochi, Ernakulam

INR 1,500 Cr
USD 214 Mn

NH66
NH85
NH544

Ernakulam Junction (ERS)
Ernakulam Town (ERN)

Cochin International Airport

Cochin Port

Overview

A Multi-modal Logistics Park (MMLP) including Free Trade Warehousing Zone (FTWZ) is proposed to be set up in the vicinity of Cochin Port. Cochin Port Trust (CPT) intends to establish this project in conjunction with the existing port facilities and services under the Logistics Efficiency Enhancement Program (LEEP) of the Ministry of Road Transport and Highways (MORTH). Under LEEP, there are also plans to construct Inter-Modal Stations which integrate various transportation modes. The objective of this project is to provide efficient integrated logistics services with dedicated areas in the MMLP which would enable freight aggregation, distribution and multi-modal freight movement by providing services such as Warehouse, Cold Storage, and other value-added services. The MMLP is poised to address the issues of an unfavourable modal mix, inefficient fleet mix and under-developed material handling infrastructure. The proposed MMLP is composed of sub-projects - General Warehouse, Cold Storage, Container Freight Station (CFS). In addition to these, a Free Trade Warehousing Zones (FTWZ) is also proposed to be set up in juncture with the MMLP. The FTWZs would improve the logistics infrastructure of the state and facilitate and promote cross-border and international trade. The primary intent of FTWZ is to attract industries catering to goods/cargo operations for locating in the Parks.

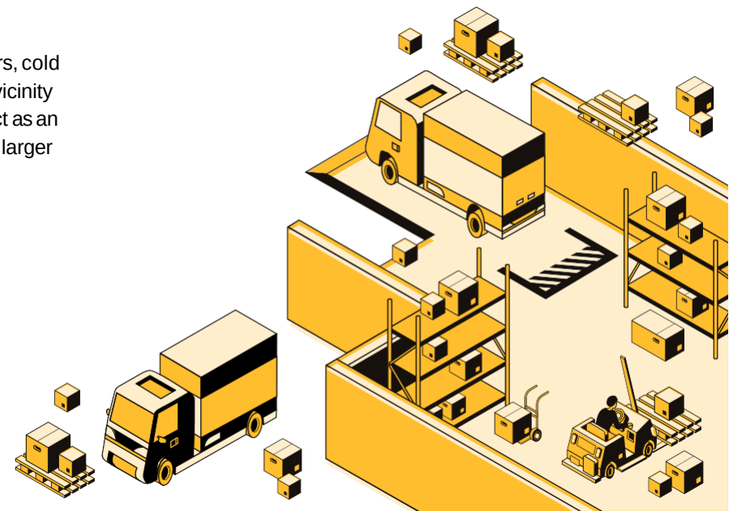
Cochin Port Trust

- In 2016-17, CPT had achieved the highest growth in operating surplus and the third highest growth in cargo traffic across all major ports of India
- In 2017-18, a total of 1,555 vessels including freight, tankers, and cruises entered the Cochin port
- The busy port handled more than 5.5 lakh containers (TEU) and over 7.6 MMT of cargo in 2017-18; surpassing the Shipping Ministry's traffic target making it a strong candidate for MLP and FTWZ
- Cochin Port has leveraged its strategic location at the cross roads of trade between East and West to establish India's first International Container Transhipment Terminal (ICTT)

Cochin Port ICTT has registered a whopping growth of 17.5 per cent in total traffic handled in 2016, hence the container capacity is slated to increase in a phased manner up to 30 lakhs TEUs/year.

Key players

There are several private logistics service providers, cold storage, and warehouse service providers in the vicinity of Cochin port trust. The proposed MMLP shall act as an incentive for all existing players to be part of the larger ecosystem.



Project Parameters

01 Capacity

Warehouse Capacity: 7,00,000 Cu. Ft (First Phase)

Cold Storage Capacity: 30000 Sq.ft with capacity of 80000 tonnes per annum (First Phase)

CFS Capacity: Installed capacity to handle 100 Containers per day (36000/ year)

FTWZ: 100000 Sq. m

02 Land

100 Acres

03 Raw Material and Utilities

Power Requirement: 1000 KVA

Ware house and Cold storage-Fork Lifts etc.

CFS facility: 2 Reach Stackers (to lift 45 tons and stack 1+4 Containers)

Handling empty Container : 3 forklifts

04 Employment Potential

Direct -60

Loading/Unloading & Security -125

05 Expected Turnover

Expected Revenue is in the tune of INR 20 Crore after completion of first phase

06 Project Cost

INR 1,500 Crore (USD 214 Mn)

Est. 1stphase Cost: INR 80 Crore (USD 11.4 Mn)

07 Means of Finance

Promoters contribution –INR 600 Crore and Term Loan/Private investment in tune of INR 900 Crore

SEZ units (FTWZ) can have external commercial borrowing up to USD 500 million in a year without any maturity restriction through recognized banking channels.

Market Landscape

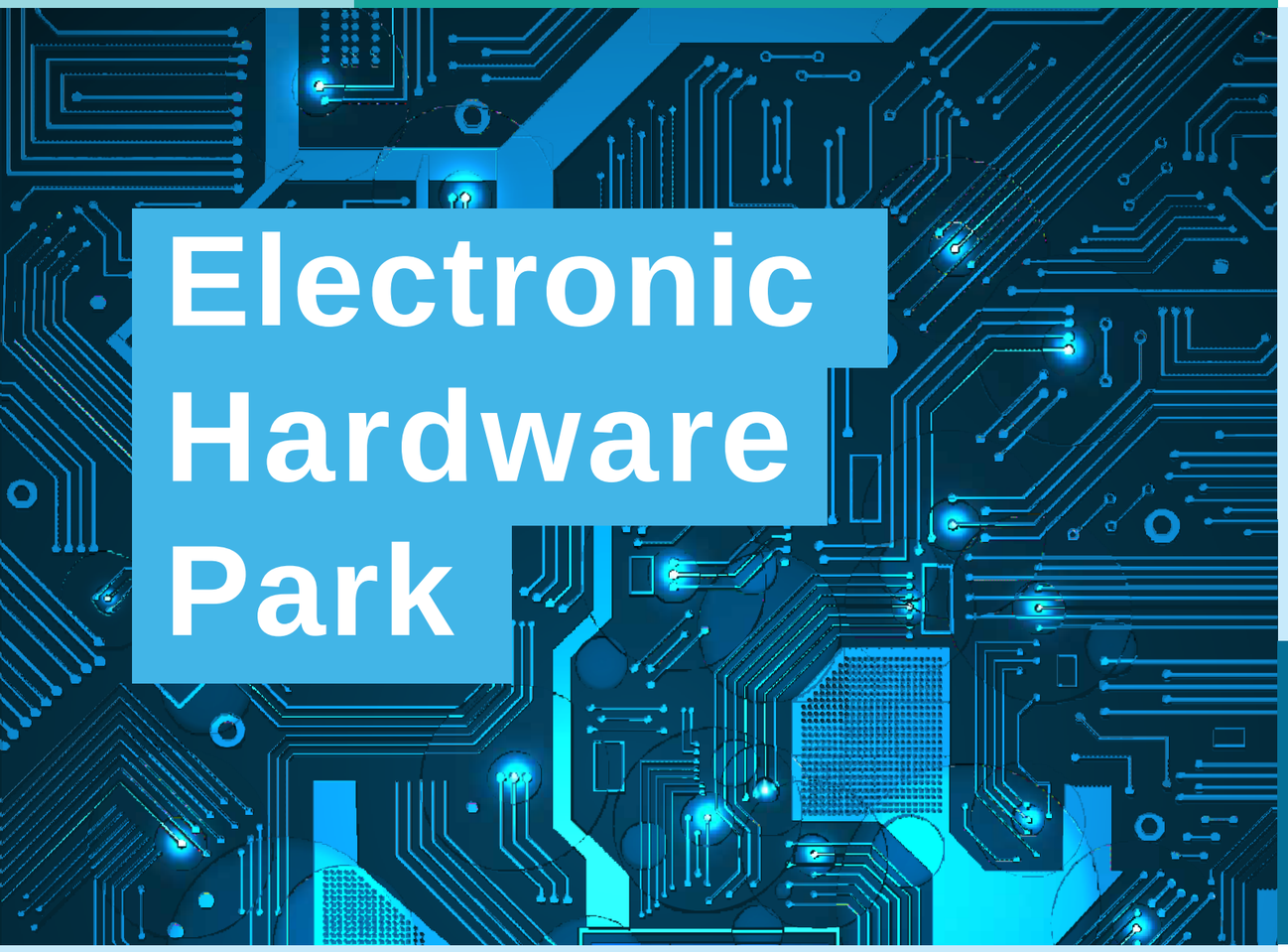
- The Ministry of Shipping has identified fourteen Coastal Economic Zones (CEZ) along the coastline of the country under National Perspective Plan (NPP) of Sagarmala Program. Sagarmala project aims to invest INR 70,000 crore in facilitating economic growth by enhancing coastal shipping of goods.
- Connectivity for all mainline carriers on the East- West shipping routes and regular scheduled train services to Inland Container Depots (ICDs) located in Irugur (Coimbatore) and Whitefield (Bengaluru) are catalysts for the impressive growth.
- With the arrival of the first Roll On – Roll Off (Ro- Ro) car ship in 2016, which connects automobile
- production hubs in Tamil Nadu (east coast) and Gujarat and Haryana (west coast), Cochin Port attracts various new businesses. 50 ship calls a year with 1,000 cars per call will be required if 30 per cent of the Kerala market shifts to the coastal transport mode.
- Inaugurated in February 2017, Vizag Multi-Modal Logistics Park boosts movement of container cargo and other cargo from the east coast port city.
- Government plans to develop 35 MMLPs in India. Cochin is one of the identified locations and with the upcoming MMLP.

*Indicative positioning of land

Investment Opportunity

The MMLP project shall be supported by the government for land acquisition. Different operation models like profit sharing, fixed monthly lease rent system etc. with land owners can be worked out. Central Government assistance through the Logistic Efficiency Enhancement Program (LEEP) of Ministry of Road Transport & Highways (MoRTH), will also be explored. The LEEP aims at enhancing freight transportation across the country through infrastructure, procedural and IT interventions. The government is also working to formulate a uniform policy for the development of MMLPs.

100 per cent FDI is permitted to develop FTWZ. Several countries are expressing their interest in the upcoming FTWZ in order to foster their trade relations with India as they can import goods duty-free and warehouse it in the FTWZ, they can re-export these goods without paying duty.



Electronic Hardware Park

Overview

The Electronics Hardware Park is proposed to be set up at an extent of 100 acres of land in Amballur with KSIDC as the nodal agency. The project aims to promote manufacturing and assembling of electronic hardware in Kerala and will also include a research and development unit. Estimated to draw investments to the tune of INR 650 crore through manufacturing and assembling of electronic equipment ranging from television, refrigerator, washing machine, computer to mobile handsets and by attracting companies in the semiconductor and electronic components sector.

Park shall be operational by 2020. In the first phase, 50 incubation units are planned to be set up. KSIDC envisages to implement the project by PPP mode.

24.4%

Projected growth rate of Electronics Market during 2012-20

The Electronic Hardware Park initiative is expected to bring about a course correction in electronics manufacturing in India, helping India keep pace with the growing demand for electronic goods

Electronics Industry in Kerala

- Presence of Greenfield Electronics Manufacturing clusters in Ernakulam. Increased spend on R&D and stepping up innovation.
- Increasing penetration of high-end electronics products such as HDTVs, LCDs, LEDs, and tablets nearly 19,000.
- Ample availability of skilled labour in the state.

Mega Project

Manufacturing

Amballur Ernakulam

INR 1,200 Cr USD 171 MN

NH 66
NH 85
NH 544

Ernakulam Junction (ERS)
Ernakulam Town (ERN)
Kollam Junction (QLN)

Cochin International Airport

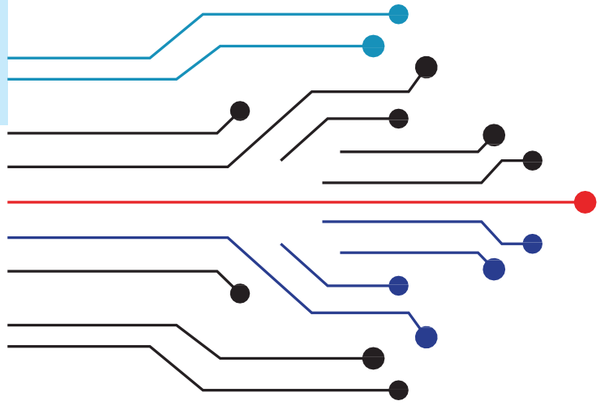
Cochin Port

USD 400 Billion

Anticipated size of electronics market in India by 2022

2.2%

India's share of worldwide total electronics manufacturing output



Key players

KELTRON

OEN India Limited

CII Guardian International

KINFRA Electronic Manufacturing Cluster (EMC)

TELK

Maker Village Kochi

CDAC

BPL

SFO Technologies

Project Parameters

01 Capacity

First phase –Electronic hardware manufacturing/ assembling/ programming/ testing and software development unit will be set up

Other facilities planned –Tool Room, PCB/ Chip Design, Embedded Technology Training Center, Incubation and R&D Center, Electronic Testing and Development Centre with Training Facility, Standard Design Factory

02 Land

100 acres identified in Amballur, Ernakulam

03 Raw Material and Utilities

Power, Boundary, Land development, Internal roads, Storm water drains, Street lighting, Water and Sewage treatment plant, Waste disposal system, Electrification infrastructure, Warehousing, Training Facility, Conference facility, IT & Telecom infrastructure, Tool room, CAD/CAM centre, Plastic molding, Packaging, Testing facilities, Semiconductor and Electronic components

04 Employment Potential

30,000(including indirect)

05 Expected Turnover

INR 1,000 Crore (USD 142 MN), INR 3,000 (USD 428 MN) Crore by 2020

06 Project Cost

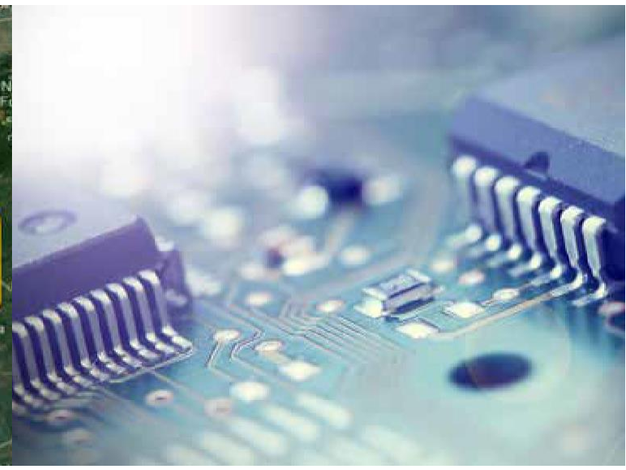
INR 1,200 Cr (USD 171 MN)

07 Means of Finance

The proposed Debt -Equity ratio is 60:40. Promoter's contribution of INR 480 Crore and Term Loan/Borrowings/Investments in tune of INR 720 Crore.

Market Landscape

- In India, the domestic manufacturing capacity is
- less than 45 per cent of the consumption, exposing the huge gap in the demand and supply situation.
- The free trade agreements signed with various countries have made it mandatory to ensure rapid growth of domestic manufacture of these goods,a major chunk of which are imported from China. In March 2017, Xiaomi announced its 2nd manufacturing plant along with Taiwan based company Foxconn, in Andhra Pradesh.
- This will help create employment in 100 nearby villages for at least 5,000 people
- High production is majorly contributed by accelerating demand for advanced TVs, mobile phones, computers and defence related electronic equipment's during FY 07 to FY 15
- The National Manufacturing Policy of Government of India and other export promotion policies specialize firms in production activities and achieving results for global competitiveness.
- To be competitive at an international level large size electronic hardware technology parks with high-class infrastructureis neededforthestatetoflourish. Ernakulam, Kannur and Thiruvananthapuram are the key districts with electronics manufacturing clusters.



*Indicative positioning of land

Investment Opportunity

The ambitious project focuses on cashing in on the booming market in India for electronic products and is expected to uplift the region into an attractive manufacturing destination. The project involves the development of the first-of-its-kind facility in the state, envisaged as an electronics hub to promote the manufacturing and assembly of hardware, as well as to support the development of qualitative infrastructure including R&D centers. The project is in line with the National Manufacturing Policy of GoI and hopes to generate business of INR 1,000 crore. The park is expected to draw investments for infrastructure development, from manufacturers and assemblers of electronic equipment, computers and mobile handsets and by attracting companies in the semiconductor and electronic components sector.

Bio 360 Life Sciences Park

Mega Project

Healthcare Pharmaceuticals

Mangalapuram, Trivandrum

INR 1040 Cr USD148 Mn

NH 17
NH 66

Trivandrum Central (TVC)
Trivandrum Pettah (TVP)

Trivandrum International Airport

Cochin Port
Vizhinjam Port
(Under construction)

USD 10 Billion

Life Sciences Industry generates around USD 10 billion of trade surplus every year, allowing it to neutralise around 4 to 5 per cent of total energy imports for India.

USD 17.27 Billion

India's pharmaceutical exports in 2017-18

Overview

Government of Kerala is establishing a Life Sciences Park at Trivandrum with world class infrastructure facilities for life science based industries and R&D institutions. KSIDC has envisaged setting up of an innovation ecosystem through establishment of a Park that is dedicated to promote Life Sciences in the region of Kerala. The Park in Trivandrum will provide the first integrated approach to life science research to markets covering all segments such as agriculture, food and nutrition, human health, animal health, industrial biotechnology and medical technology. Phase I of the proposed Life Sciences Park is under development and is planning to offer facilities such as an Innovation cum Incubation Center, Research cum Learning Center, Animal Science facility, Bio-Process facility, a Medtech prototyping, design and validation center and toxicology services among others. The objective of Phase I is to encourage innovation and provide various support services to incubated companies within the Bio Park. The infrastructure facilities such as power, water and internal roads have been completed in Phase I and implementation of projects are at various stages. Some of the projects that are coming up in park are Institute of Advanced Virology, Medical Devices Park, Innovation cum Incubation Centre etc. A small Lab Animal facility is also planned in Phase I to take care of the need of CROs/Vaccine companies as part of new drug discoveries. The second phase of the Bio 360 Life sciences Park is envisaged as a critical extension of Phase I, whereby it is proposed to acquire and develop another 130 acres of land for industrial use by companies in various sectors of life sciences to setup and operate standalone commercial manufacturing or related facilities. While Phase I boasts of offers significant level of shared facilities and incubation space for smaller companies, Phase II will offer larger parcel of land for companies to setup large scale commercial activity with their own facilities. Additionally, Phase II companies can also benefit from the shared infrastructure in Phase I. To the extent reasonably feasible, Phase II will cluster similar companies together, leading to an increase in synergy through mutual collaborations. The first phase of development with above said facilities would be ready by March 2021.

11-12%

The industry will sustain its growth trajectory of 11 to 12%

The industry is poised to grow 7 to 8 times to a size of USD 190 -200 billion by 2030.

- The life sciences industry has also built strong capabilities across all parts of the value chain.
- In manufacturing, India continues to have the highest number of FDA-approved formulation plants outside the US.
- India is the largest provider of generic drugs globally.
- In R&D and regulatory, Indian industry has accounted for 32 per cent of the ANDA filings last year, second only to the US at 44 per cent.

Project Parameters

01 Land

Land notified

- First phase-75 acres. Under possession is 70 acres
- Second phase -160 (128.50) acres. Under possession is 86 acres

Land allotments

- 12.75 Acres (Allotted); 30 Acres (under processing)

Balance land allottable

- First phase -14.25 acres Second phase -86 acres

02 Basic Infrastructure completed

Dedicated Power & Water supply

Internal Roads

03 Common Infrastructure proposed

First Phase

- cGMP compliant bio-processing facility,
- Small Laboratory Animal facility
- Wet & Dry Laboratory space
- Incubation Centre

Second Phase

- Power, Water, Internal roads

04 Project Cost

First phase -INR 625 Cr

Second Phase –INR 415 Cr

05 Existing Units

- Polyskin Life Sciences (P) Ltd
- Research cum Learning Centre by Kerala Veterinary & Animal Sciences University
- Institute of Advanced Virology (Phase 1)

06 Existing Projects under construction or design stage

Medical Devices Park –2,50,000 sq. ft.

Bio Innovation Hub –3,00,000 sq. ft.

Institute of Advanced Virology (Phase2) –80,000 sq. ft.

07 Expected Turnover

- First phase -INR 1000 Cr
- Second phase -INR1500 Cr

08 Employment potential

First phase -4000 nos.

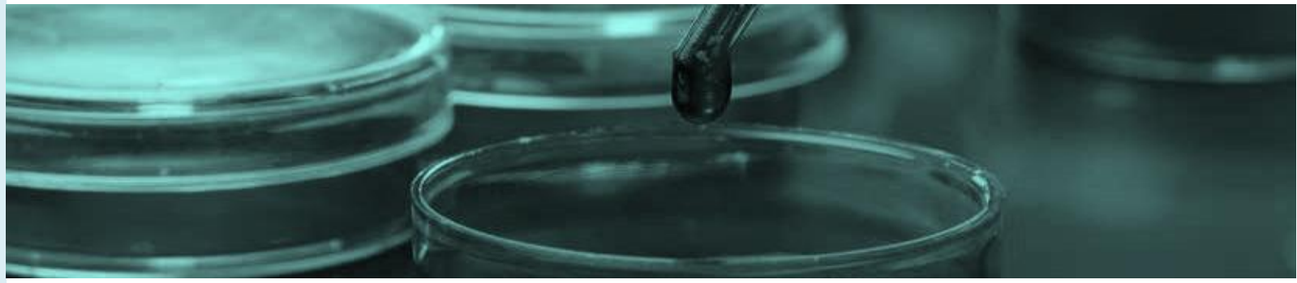
Second phase –6000 nos.

09 Expected Investment

- First phase –INR 1500 Cr
- Second phase –INR 2500 Cr

Market Landscape

- Indian industry has been a driver for access and affordability in life sciences. Indian drugs are available at an affordable price as compared to markets globally.
- India is the primary supplier of essential medicines for numerous diseases, helping save millions of lives globally. India's contribution extends to developed markets such as the US as well, where through its position in the generics market, the industry is significantly reducing healthcare.
- In addition, it also generates a significant number of jobs for India. Estimates indicate that around 2.5 million people are currently employed by the industry (including some of the industries such as chemists, stockists, etc).
- India has also been able to build a strong position across various segments of the market. In pharmaceuticals, India is now the eighth largest country by value globally with one of the highest growth rates.
- It has also been able to build a strong position in key markets such as the US. In clinical trials, India continues to be one of the top 15 destinations globally based on the number of trials conducted between 2003 and 2013.
- The State's rich bio-diversity comprising of abundant flora and fauna has always fostered a thriving R&D culture, giving birth to many research institutions in agriculture, Ayurveda, medical sciences, bio-technology, fisheries, marine sciences and more.



Investment Opportunity

- The Bio 360 Life Sciences Park would provide developed plots for large and Integrated Bio-IT companies to set up their campuses and ready-to-use modular officers, wet and dry lab space for intermediate, small and start-up companies.
- The immense knowledge base concentrated in the R& D clusters near the Park as well as across Kerala will greatly enhance the Park's efficiency as a single source R&D and knowledge centre for the industry.
- The Start-up firms, small scale enterprises, student and scientist entrepreneurs, and companies with expansion plans will particularly benefit from the proposed Incubation Centre.
- 'Plug-n-play' manufacturing space is guaranteed for commercial scale operations at post–incubation stage
- The park is India's first research focused park with an integrated approach covering all segments such as medical technology, pharmaceuticals, healthcare, biotechnology.
- The park provides ultra-modern facilities such as a cGMP compliant bio process facilities for pilot scale production and a pre-clinical toxicology laboratory for functional and strategic requirements.
- The park is poised to be focal point for convergence of research innovation skill development to further advance the frontiers of science.
- An extent of 86 acres of land has already been acquired and steps have been taken to take possession of remaining parcels of land so as to make about 125 acres of land in contiguous form.
- KSIDC is keen in associating with major players in Life Sciences sector to develop the Phase II on PPP mode. Co-developer can conceive any projects in Life Sciences domain.
- The cost of land can be treated as equity of KSIDC, while, Co-developer can create all basic industrial infrastructure such as power, water and internal roads including common facilities needed for Life Sciences/Biotech ventures.

Aerotropolis

Mega Project | Infrastructure | Mattannur, Kannur | INR 850 -1000 Cr USD121Mn-143Mn

NH17 NH66 | Kannur (CAN) Kannur South(CS) | Kannur International Airport | New Mangalore Port

Kannur has historically been bestowed with the status of the "Town of Export Excellence" by the Central Ministry of Commerce and Trade.

Kannur's GSVA added at current prices added grew at 10.09% and 10.18% respectively in the last two years

Overview

The Aerotropolis consists of an airport city core and outlying corridors and clusters of aviation-linked businesses. The proposed project is in conjunction with the Kannur International airport. The three major components of Kannur Aerotropolis includes

- Traditional Industries : Marine Product Processing, Cashew Processing, Coir Processing, Plywood, Spices, Silk production, Handloom & Textile, Coffee Processing, Handicrafts, Floriculture.
- Induced Industries : Aviation MRO, Aerospace Manufacturing, Aviation Institute, Gems & Jewellery, Logistics (considering airport as the catalyst).
- Real Estate : As a support facility such as Tourism & Hospitality, Medical facilities, Commercial (IT & Non-IT).

With the onset of Kannur airport which was envisioned taking into account the future demand of the passenger traffic of the emigration population from North Kerala and the huge tourist volume in the hinterland, the district has a huge opportunity to be developed as an industrial hub in the state.

The concept of Aerotropolis is based around airports becoming the anchors for a new type of city that develops around airports rather than on the fringes. In India, there are two such examples – one in West Bengal and other in Telangana.

The proposed Aerotropolis ought to have a vision of leveraging on the existing untapped potential of Kannur and adjoining Kasaragod district in different spectrums like agro processing, marine processing and tourism.

- Kannur has various factors such as fertile soil, salubrious climate, rich forests, enormous fishing potentials, minerals, and existing infrastructural facilities offering ample scope for development of further industries. The Kannur airport is likely to facilitate export trade for the export focused industrial clusters.
- Kannur's GSVA added at current prices added grew at 10.09% and 10.18% respectively in the last two years.
- Kannur region is home to many industrial sectors such as textile, food & agro, wood and paper related etc. Around the airport, Kannur is a major urban node and there is a sea port at Azhikkal. Calicut is also a key urban node which is a key target market.
- Due to dearth of a comprehensive industrial setup in the district, major development is poised to come in with the proposed Aerotropolis.

Project Parameters

01 Land

Industrial park : 612 acres

Airport based SEZ : 300 acres

Real Estate : 55 acres

02 Raw Material and Utilities

Site access road, power (110 KV substation at Kannur airport), water supply (proposed to be sourced from Pazhassi dam)

03 Expected Turnover

The pre-tax IRR is estimated at 16.67%

04 Project Cost

- INR 900 Crore (USD128 Mn)
- Cost of Land: INR 700 Cr
- Land Development Cost: INR 80 Cr
- Utilities Cost: INR 70 Cr
- Administrative Block: INR5 Cr Contingency:INR 8 Cr
- Preliminary and Preoperative Expenses: INR 6 Cr
- Margin money for Working Capital: INR 1 Cr
- Interest during Construction: INR 30 Cr

05 Means of Finance

- Debt-equity ratio of 1.5 : 1 is assumed.
- Considering this as regional/ industrial development project government support may be availed in terms of Grants/VGF etc.

Market Landscape

Andal Aerotropolis, Durgapur, West Bengal

- India's first Aerotropolis located at Andal between the industrial cities of Durgapur and Asansol The Kazi Nazrul Islam International Airport is being developed in association with Singapore's Changi Airports International (CAI) and constructed by Bengal Aerotropolis Projects Limited (BAPL).
- In2007, the Union Civil Aviation Ministry and the West Bengal Government announced plans to setup a new airport along with a township, IT and logistics hub for the Asansol-Durgapur Region.
- The Andal Aerotropolis Project is spread over approximately 2,182 acresin the Asansol Durgapur Planning Area (ADPA) in West Bengal. Bestowed with premium facilities and unparalleled opportunities in the fields of power-intensive industries, mining, iron & steel, metalwork, engineering, petrochemicals, Information Technology (IT) and telecommunications, ADPA has proved to be an ideal destination for investors.

GMR Hyderabad Airport City, Hyderabad

- GMR has been developing Hyderabad Airport City in the precincts of Hyderabad International Airport. The Airport City would offer an integrated ecosystem with theme-based, anchor-led development zones.
- This shall include key ports and establishments, including a Business Port, a Health Port, Education Port, Fun Port, Retail Park, Logistics Park and Aerospace Park, as a multi-product SEZ.
- The Aerotropolis is expected to play a catalytic role in the growth of Telangana's economy. GMR Hyderabad Airport City aims to become an urban conglomeration in South India and its proximity to the airport would open new vistas for international investment.

*Indicative positioning of land

Investment Opportunity

The proposed Greenfield Aerotropolisin Kannur, is envisaged to be unique development with capability to change the socio-economic scenario of its primary hinterland. With a vision to capitalize the untapped industrial and tourism potential of North Malabar region, the subject project can emerge as a definite winner in creating a large number employment opportunity and making Kannur a 'Destination' of its own.

The feasibility study conducted by INKEL* proposed two development options for the project namely

1. Integrated with development plan of Kannur International airport and bid out on BOT mode.
2. Treated as separated entities, wherein Aerotropolis will be bid out on BOT mode.

Defence Park

Mega Project

Defence Manufacturing

Ottapalam, Palakkad

INR 130.84 Cr

NH 966, NH 544, NH 66

Palakkad Junction, Shornur Junction

Coimbatore International Airport

Cochin Port

Overview

KINFRA Defence Park is being established in 60 acres of land at Ottapalam, Palakkad with assistance from the central government under the Modified Industrial Infrastructure Upgradation (MIIU) Scheme.

The Park can attract companies involved in research & design, software development, casting, forging and metal works, naval electronic sub-systems and accessories, land electronic sub-systems and accessories, and aerospace electronic sub-systems, tooling and accessories.

The thrust can be employed in sub-systems/auxiliaries in the manufacturing of the rotary & Fixed Wing aircrafts, Defence navigation technology, Tactical Vehicles, Submarine building, Warship/ Naval, Defence IT systems and solutions, Avionics, TCS, Space - Robotics Maintenance, Microsatellites, Unmanned Systems etc.

Thrust Sectors

- Defence manufacturing
- Defence Navigation Products
- Avionics
- Naval Systems
- IT Hardware and electronics
- Tactical communication system
- Protective clothing and Personal equipment

Key features and offerings

- Leasing of CFC building of around 2,64,638 Sq. Ft
- Administrative building of around 72,406 Sq. Ft
- Warehouses of 28,317 Sq. Ft area
- Common Utility Centre with 7,271 Sq. Ft. area
- Service yard
- Car parking, Road and Compound Wall
- Conference rooms
- Paint booth
- Training rooms
- Tool rooms
- Potable Water Supply and Uninterrupted Power Supp etc

USD 700 mn

Defence component manufacturing sector demand in India

4000 Cr

Total investment outlay

Project Parameters

01 Land

60 Acres of land in Ottapalam, Palakkad
Leasing of land@ approx. INR 2,10,000/-per cent

02 Project Cost

INR 131 Cr

03 Central Assistance

Rs 50 crore under Modified Industrial Infrastructure Up gradation (MIIU) Scheme.

04 Common Infrastructure

Power, Water, Internal Roads, Common Facility Centre, Admin Building, Common Utility Centre, Ware House

05 Governance structure

Corporate Management Structure and Board Managed, with representative directorship. . GoK to oversee major decisions as per approved MoA

06 Means of Finance

Equity and Debt . Equity structure of SPV to be decided, with GoK holding not less than 26 %. Debt portion to be strategically priced and spread out. No subordinate debts are envisaged.

07 Employment Potential

1200

Market Landscape

- Defence has been identified as one of the sectors under “Make in India” initiative of Govt. of India for providing a major thrust to the in-house manufacturing of equipment’s to meet most of the varied requirements of defence.
- Opening up of the defense production in the private sector offers high potential for projects in this sector.

Indicative positioning of land

Investment Opportunity

Defense Manufacturing, Navigation products, Avionics, Naval systems, Tactical Communication system, Protective clothing & Personal equipment

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