ANDHRA PRADESH
INFORMATION TECHNOLOGY INVESTMENT REGION
(AP ITIR)

UPDATED PROJECT PROPOSAL - DPR

Submitted by

INFORMATION TECHNOLOGY AND COMMUNICATION DEPARTMENT

GOVERNMENT OF ANDHRA PRADESH

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Acronyms

AP	Andhra Pradesh
AP Transco	Transmission Corporation of Andhra Pradesh
APCPDCL	Andhra Pradesh Central Power Distribution Company Limited
APIIC	Andhra Pradesh Industrial Infrastructure Corporation
APPCB	Andhra Pradesh Pollution Control Board
APSRTC	Andhra Pradesh State Road Transport Corporation
APUAD	Andhra Pradesh Urban Areas (Development) Act
BOC	Base Oxygen Corporation
BPO	Business Process Outsourcing
BPPA	Buddha Purnima Project Authority
CTS	Cognizant Technology Solutions
DMP	Disaster Management Plan
EHM	Electronic Hardware Manufacturing
EIA	Environment Impact Assessment
ELIAP	Electronic Industries Association of Andhra Pradesh
ELSR	Elevated Level Service Reservoir
EMAP	Environment Management Action Plan
EWS	Economically Weaker Sections
GHMC	Greater Hyderabad Municipal Corporation
GO	Government Order
GOAP	Government of Andhra Pradesh
GOI	Government of India
GPCD	Grams per capita per day
HGCL	Hyderabad Growth Corridor Limited
HMDA	Hyderabad Metropolitan Development Authority
HMWS & SB	Hyderabad Metropolitan Water Supply & Sewerage Board
HUDA	Hyderabad Urban Development Authority
HYSEA (now ITsAP)	Hyderabad Software Exporters Association
ICAO	International Civil Aviation Organization
IDA	Industrial Development Areas
INCAP	Infrastructure Corporation of Andhra Pradesh

IT	Information Technology
IT&C	Information Technology and Communications
ITES	Information Technology Enabled Services
ITIR	Information Technology Investment Region
ITIR DA	Information Technology Investment Region Development Authority
LIG	Low Income Group
LPCD	Litres per Capita per Day
MIG	Middle Income Group
MLD	Millions of Litres Per Day
MMTS	Multi-Modal Transport System
NASSCOM	National Association of Software and Service Companies
NH	National Highway
NHAI	National Highway Authority of India
NPA	Non-processing Area
ORR	Outer Ring Road
PA	Processing Area
PCPIR	Petroleum, Chemicals and Petrochemical Investment Region
PPP	Public Private Partnerships
PwC	PricewaterhouseCoopers
SCR	South Central Railways
SDZ	Special Development Zone
SEZ	Special Economic Zone
SIA	Social Impact Assessment
SIPB	State Investment Promotion Board
TCS	Tata Consultancy Services
TR&B	Transport, Roads and Buildings
UDA	Urban Development Authority

1. INTRODUCTION & BACKGROUND

1.1. INTRODUCTION

To promote investment in Information Technology (IT), Information Technology enabled services (ITES) and electronic hardware manufacturing (EHM) units, the Government of India has envisaged a transparent and an investment friendly policy for setting up information technology investment regions (ITIRs) – a Gazette notification dated 28.05.2008 published a policy resolution for setting up of ITIRs.

There has been an increasing recognition of the importance of policy initiatives, enabling legislation and conducive regulatory environment in facilitating growth of economic activity. Simultaneously, there has been a growing realization that economic growth helps governments in achieving various objectives, including but not limited to, poverty alleviation, employment generation and mobilization of financial resources for important programs of the government in the social sectors viz. education and health. The Information Technology Investment Regions (ITIRs) is such an initiative being encouraged by the Government of India – different states are at various stages of planning these investment regions.

Based on the policy guidelines of the central government, the government of Andhra Pradesh (GoAP) had notified Information Technology and Communications (IT&C) department as the nodal department for ITIR development in Andhra Pradesh.

IT&C department had prepared and submitted a detailed Project Proposal for approval to the central government in January 2010. The Andhra Pradesh ITIR proposal was then presented to a High Powered Committee (HPC) at the GoI level, in August 2012, for final approval. The HPC has recommended AP ITIR for In-Principle approval and suggested that a Detailed Project Report (DPR) shall be submitted for Final Approval from Cabinet Committee for Economic Affairs (CCEA).

1.2. THIS REPORT

This is updated AP ITIR Project Proposal – DPR submitted for the entire 202 sq. Km delineated by IT&C department for the AP ITIR.

2. INDUSTRY LANDSCAPE

This chapter provides an overview of the Information Technology (IT), Information Technology enabled Services (ITeS) and Electronic Hardware Manufacturing (EHM) industries. It includes a brief snapshot on the global as well as the Indian scenario in the industry sectors mentioned above. This chapter also assesses the role played by Andhra Pradesh in the growth of these industries in India. IT, ITeS and EHM industries constitute the focus industries areas for Information Technology Investment Regions **(ITIR).**

2.1. INFORMATION TECHNOLOGY /INFORMATION TECHNOLOGY ENABLED SERVICES INDUSTRY

Logically, understanding and appreciating the Information Technology and Information Technology Enabled Services and key definitions would be the initial step. As per The American Heritage Science Dictionary, Information technology (IT) is defined as the technology involved with the transmission and storage of information, especially the development, installation, implementation, and management of computer systems within companies, universities and other organizations" In the broadest sense, Information Technology (IT) refers to both the hardware and the software that are used to store, retrieve, and manipulate information. The Information Technology Association of America (ITAA), defines IT as "the study, design, development, implementation, support or management of computer-based information systems, particularly software applications and computer hardware." Information Technology is also considered as a branch of engineering that deals with the use of computers and telecommunications to retrieve, store and transmit information. IT industry was instrumental in digitising and connecting the world and deals with the use of electronic computers and computer software to convert, store, protect, process, transmit, and securely retrieve information.

Information Technology enabled Services (ITeS), is a form of outsourced service which has emerged due to involvement of the IT in various fields such as banking and finance, telecommunications, insurance, manufacturing, etc. Some of the popular constituents/sub-segments of ITeS in India are medical transcription, back-office accounting, insurance claim processing, credit card processing and many more. This is also called BPO or Business Process Outsourcing as these business processes are increasingly standardized and out-sourced to third party organizations. Over the years and with developed expertise in the basic business process outsourcing activities, several Indian ITeS organizations have moved into the higher end roles of Knowledge Process Outsourcing (KPO) and various process fine tuning and re-engineering/ re-designing solutions for client organizations.

2.1.1. GLOBAL IT/ITES INDUSTRY LANDSCAPE

Globally IT/ITeS industry has emerged in last few decades and is a large industry employing millions of people across continents. Today in such a short span of time, Information Technology has penetrated to almost all industries in the world. Apart from industries, it has also penetrated to all walks of life making it impossible to think a world without information technology. Various estimations are available for the key quantitative parameters (size, growth, etc.) for the Information Technology industry and it varies depending on the purpose as well as the definition used while estimating the same.

Industry size, classification and growth

As per the Economic Intelligence Unit (EIU), the Global Information Technology spend, (includes the global market for Packaged Software and IT Services spend) was projected to reach US $ 983 billion in 2012. The industry grew globally at a CAGR of 5.4% from 2005 to 2012. The IT Services spend, contributing the major part of about 64%, grew at a lower rate of 4.7% while packaged software sales grew at 6.7% during the same period. The industry contracted during the financial crisis period but started looking up from 2010. Both Packaged Software as well as IT Services peaked during 2008 and had experienced de-growth in 2009. Both these segments reached/crossed the previous high levels of market size in the year 2011.

Even though global economy is expected to grow less impressively during 2012, it is strongly in the path of recovery from the downfall in 2009 which is a good sign for the global IT industry.

As per the predictions of EIU, the Packaged Software and IT Services industry is expected to reach USD 1075 billion by the year 2014 at a CAGR of 4.6% between 2012 and 2014 During the same period, packaged software sales and IT services sales are projected to reach USD 401 billion and US $ 674 billion with CAGR of 6.2% and 3.7% respectively.

Since 2010, companies have witnessed a resumption of spending, with market leaders like Oracle (US) reporting a rise in sales of software products to new customers. Sales of packaged software are expected to rise by 3.6% this year and forecasted to grow by 5.8% and 6.5% in 2013 and 2014 respectively. Spending on IT services is expected to grow by 1.0% this year before growing by 3.4% in 2013 and 4.0% in 2014.

There are reasons why software was expected to be fairly resilient in the downturn. In the enterprise sector, software systems now underpin the business processes of the world's biggest corporations. Software vendors also enjoy the safety net of their annual maintenance fees, which amount to about 20% of original licensing costs. Nevertheless, sales of new software by the biggest providers fell sharply in 2009, with customers demanding contracts that did not require them to make maintenance payments over as long a period as earlier.

There are various other pressure points that will continue to be felt by the software industry/developers. More software will be offered to customers over the web, sometimes for free. The most famous example so far is Google's suite of applications, which imitates Microsoft Office. Such "cloud computing" will be one of the most significant IT developments in coming years.

In case of geographical contribution, the global IT Services and Packaged Software industry is highly skewed geographically with around 80% of the output coming from the US and Europe.

Evolution of IT/ITeS industry

Information Technology: - Information Technology has evolved in the last few decades with an amazing speed and influence. It has not only revolutionized the way businesses were done across the globe but also brought in a paradigm shift in the individual's communication space. The recent technological developments, including the press, the media, the telephone and the Internet have reduced the physical barriers to communication and allowed humans to network on a global scale.

The concept of information technology was first used in 1981, as a rechristening of the old fashioned phrase "data processing". It now covers a wide area and not just the domain of science related, but even encompasses other fields such as Arts and Commerce. It has now become a model for using the technology covered by different services such as office productivity applications to process and maintain documents and records, various web portals etc.

But today, information technology is the core of modern society and has reached a vital position in the world, which has become a well-connected global village.

Information Technology enabled Services, which started with basic data entry tasks over a decade ago, is witnessing an expansion in its scope of services. It now offers services such as Knowledge Process Outsourcing (KPO), Legal Process Outsourcing (LPO), Games Process Outsourcing (GPO) and Design Outsourcing, among others.

Outsourcing dates back to the 1960s from where it has grown to different levels from the timesharing data process model to Business Process Outsourcing (BPO) and then to Knowledge Process Outsourcing (KPO). Recently, companies have adopted a business strategy of outsourcing entire business activities, such as technology operations, customer relationship, logistics, finance and document processing to other organizations.

The history of outsourcing started in the United States, when it was struck with economic stagnation and rising inflation rates. Since, then the US companies started outsourcing their service related jobs to cheaper locations to regain their profitability.

Globalization of economies supplemented by technological advances has led to the evolution of the outsourcing industry in India. The evolution and wide spread adoption of Internet across the globe is one of the main growth drivers for this industry.

Organisations across the world are looking to reduce costs and increase efficiencies in what they do. Thus 'Outsourcing' has been a preferred business model and will continue to be an important trend. The Outsourcing market has been driven by two types of companies - those under financial distress and needed some quick-hit balance sheet relief and those that used outsourcing as a mind-set and strategic lever.

In the beginning, companies in United States of America started outsourcing information technology activities to low cost locations such as India. Outsourcing to India is cheaper than outsourcing to other locations in the world and this was the primary reason for companies outsourcing their business activities to India. With their confidence in India grew, few of these companies also started their offshore facilities in India.

Today, India is considered to be among the most preferred destinations in the world. Reasons for preferring India lay in its vast skilled human resources, good infrastructure and climatic conditions that are suited to the clients' business activities.

India has been known for its huge talent pool and has proved to be one of the most significant destinations for global companies to outsource their back office operations. Due to India's additional edge in knowledge based services, India has emerged as a favourite destination for outsourcing of knowledge processes too.

Today outsourcing industry is moving towards high level of specialization as well as higher end processes from the traditional low end business processes. Now several BPOs

have progressed in the value chain to offer high end consulting services thus creating worldwide opportunities in terms of enhanced revenues, product/service innovation and economic growth.

2.1.2. INDIAN IT/ITES INDUSTRY LANDSCAPE

Indian IT & ITeS industry has been a consistent growth driver for Indian economy for last 1 -2 decades. It has shown enough resilience even during one of the most troubled periods in last couple of years when most developed countries faced one of the worst financial crisis in recent times.

Indian IT & ITeS industry is increasingly contributing to country's GDP, employment and exports. The key factors contributing to the huge growth and success of this sector are continued expansion to diversified markets, different service offerings, incorporation of best practices, continuous skill up-gradation and emergence of Indian Multinational Companies. Some of the recent industry highlights (Source: NASSCOM and Department of Information Technology, Govt. of India) are given below:

- India is considered as a premier destination for global sourcing of IT-ITeS. It accounts for more than 50% of the global outsourcing market, estimated at USD 95 billion in 2011.
- India is mentioned to have more than 60% of the global technology services market (IT Services, Engineering Services and R&D) of about US $ 58 billion
- Indian contribution to Global Business Outsourcing market is considered to be about 32% of the market size of about US $ 37 billion.
- Amongst the ITeS, BPO is the fastest growing sector with a CAGR of 29% (between 2004-2009)

  The total number of IT and ITeS-BPO professionals employed in India has grown from 0.28 million in 1999- 2000 to 2.77 million in 2011-12
- Indirect employment attributed by the sector was estimated at 8.9 million in year 2011-12
- Key sectors of Banking, Financial Services and Insurance (BFSI), High technology and Telecom contribute almost 60% share of total ITeS export revenues
- It is expected that the future growth will come from Healthcare, Retail and Utility sectors.

In IT, India has built a valuable brand equity in the global markets and Indian talent and solutions/services offered by Indian IT companies are accepted globally. India was amongst the first movers in the IT-BPO space. Currently India is facing huge competition from emerging players like Mexico, Vietnam, Philippines, Malaysia and China. However, there is an opportunity for India to tap the Knowledge Prqcess Outsourcing (KPO) market and to move up the value chain and tap the huge growth potential with the skilled manpower available.

In ITeS, India has emerged as the most preferred destination for Business Process Outsourcing (BPO), a key driver of growth for the software industry and the services sector.

Industry size and classification

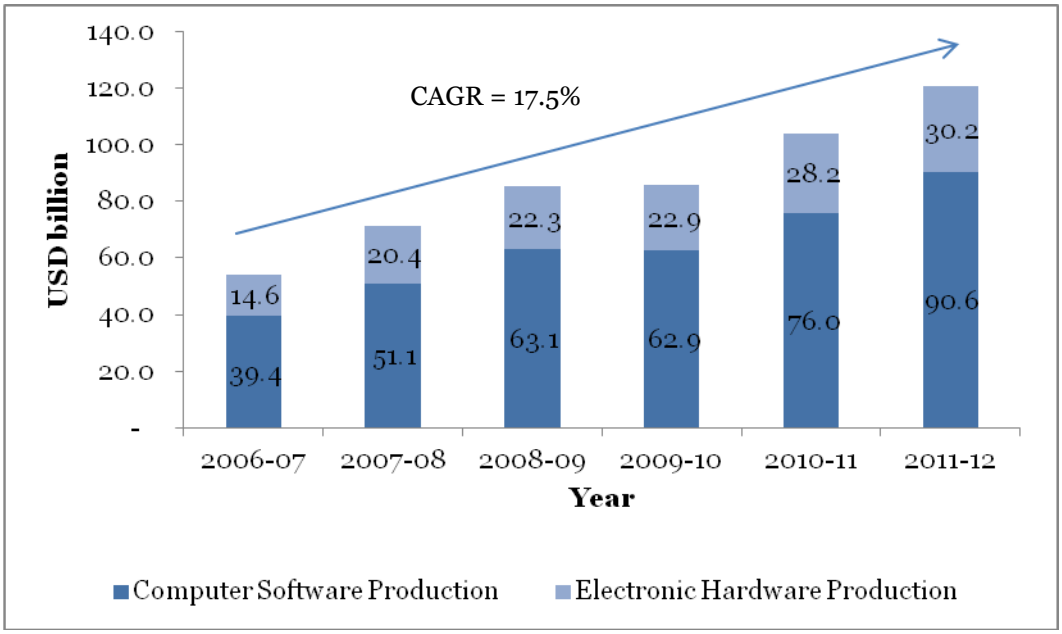
Presently India contributes around 9.4% to the global IT & ITeS (which includes IT software, and IT services, without IT Hardware) industry and is valued at USD 90.6 billion. (Please note here that if the IT Hardware is also included, India contributes only to about 5% of the global industry). The Indian IT-ITeS industry grew with a CAGR of around 17.5% in the past five years (2006-07 to 2011-12). The global economic downturn which started in early part of 2008 and continued in 2009 resulted in slow revenue growth for most Indian IT, ITeS and EHM companies. But with the Global economy picking up there is a huge market potential to be tapped.

The Indian economy which was growing at an enviable rate of 8.4% in 2010-11 grew at a moderate rate of 6.5% in 2011-12 (Source: CSO). In spite of this, Indian IT and ITeS industry was able to sustain a respectable growth momentum. Growth rate, although respectable, has also been aided in certain years due to rupee depreciation. According to NASSCOM annual report, the Indian IT-ITeS/BPO industry grew by over 14.7% to reach a total turnover of USD 90.6 billion in 2011-12. The year was marked by expansion into new service lines and newer geographies by Indian players.

The Indian software and services export grew from USD 59.0 billion in 2010-11 to reach USD 71 billion in 2011-12, a growth of 20.8%. The IT services exports are estimated to grow by 18.8% to reach USD 39.8 billion in 2011-12 from USD 33.5 billion in 2010-11.

The employment growth in the sector is indicative of the strong fundamentals of the Indian industry. The growth of the Indian IT and Electronic Hardware industry is shown in Exhibit 2.1 below

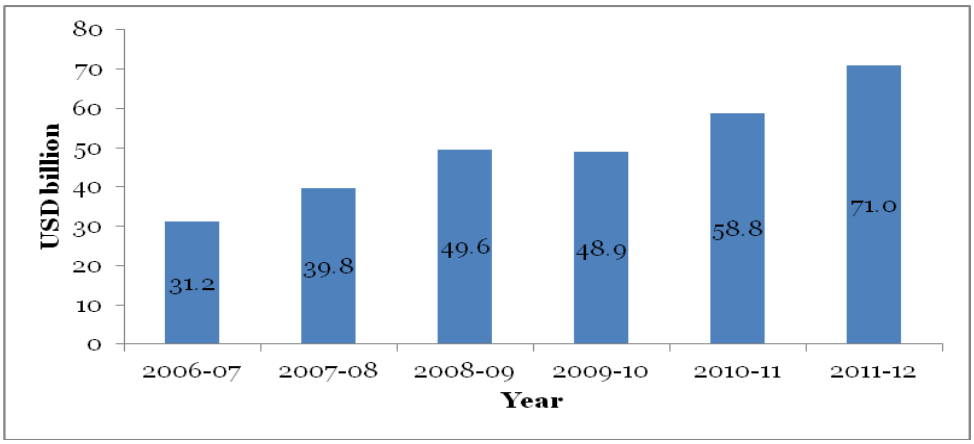
Exhibit 2.1: Electronic & IT Production Profile



Source: Annual Report of Department of Information Technology, Government of India

Indian IT & ITeS industry is export driven and computer software exports dominate the export revenue with Electronic Hardware contributing only a small share. The growth in software exports from India is depicted in Exhibit 2.2 below.

Exhibit 2.2: Exports from India



Source: Annual Report of Department of Information Technology, Government of India

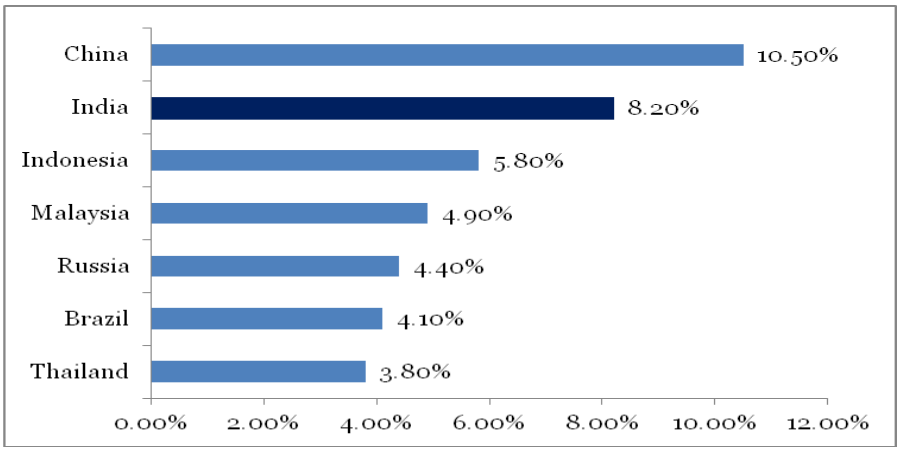
Domestic market for IT and ITeS is still small in India and most of the products/services are export-oriented. The revenue from the domestic IT market was expected to touch USD 16.7 billion in 2011-12 as compared to USD 14.3 billion in 2010-11.

Traditionally, US and UK have been the largest export markets for the industry accounting for almost 80% of all exports. However the focus is gradually shifting to other geographies, especially to Continental Europe. India is also looked upon as an R&D hub for many multinational companies with over 600 companies sourcing their product development and engineering services from their Indian subsidiaries.

India advantage

India is the second fastest growing economy in the world with its Gross Domestic Product (GDP) growing at an average rate of 8.2% (2003-2012) (refer Exhibit 2.3). In spite of the global financial crisis, companies from developed economies have shown confidence in India's future and are interested in growing their business in the country. In fact, the Indian stock market was amongst the first few to bounce back after the global financial crisis in 2008-09.

Exhibit 2.3: Average GDP Growth (2003-12)

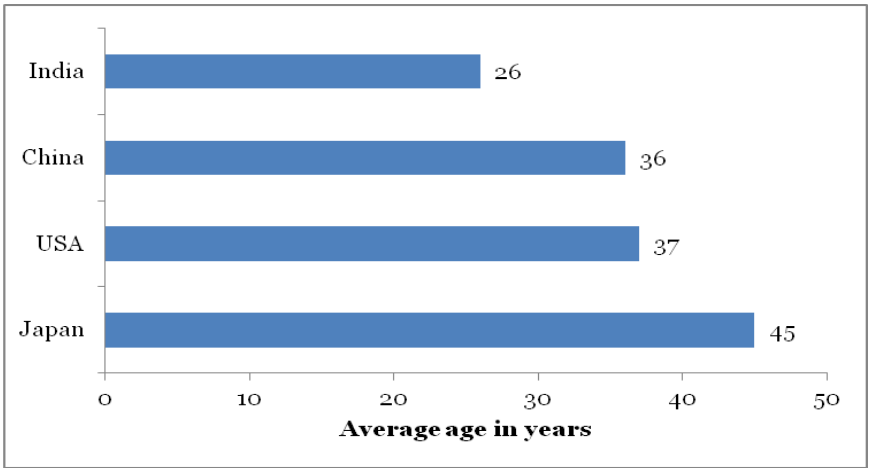


Source: IMF, Crisil

With the largest number of listed companies —10,000 across 21 stock exchanges, India has the third largest investor base in the world. It also has the fourth largest billionaire population in the world. Average household income in India is expected to triple in next 2 decades with projected CAGR of 5.3%. This is significantly more rapid than 3.6% growth in the past 20 years. This presents an opportunity for the growth of huge domestic market in the times to come.

Today, India is amongst the world's youngest nations with a median age of 26 years (0-14 years: 29.7%. 15-64 years,:64.9%, 65+ years: 5.5%), as compared to 45 in Japan, 37 in USA and 36 in China (refer Exhibit 2.4). India is projected to stay the youngest with its working-age population estimated to rise to 70% of the total demographic by 2030 - the largest in the world.

Exhibit 2.4: Median Age (Years)



Source: The World Fact Book

According to a previous industry estimate, global sourcing amounted to US $ 25 billion savings for customers in 2008. The outsourcing model has established itself as a successful business model.

India is increasingly being looked upon as a preferred destination for setting up subsidiaries due to its impeccable record of access to vast skill base, cost competitiveness, strong quality orientation, availability of high quality infrastructure, enabling policies of the government, mature industry eco-system, commitment to address security concerns, availability of private equity to support local entrepreneurs, economic stability and global 24X7 service delivery model. Some of the above points have been elaborated below:

- *Access to vast skill base:*

  - Over — 2.5 million graduates are added to the workforce every year, including 300,000 engineers and 150,000 IT professionals.

  - One of the largest English speaking manpower in the world.

  - Availability of quality delivery management talent from international banks and consulting firms.

- Strong Quality Orientation
  — ISO 9001, COPC, 6 Sigma are some of the established quality initiatives.
  — 80 out of the world's 117 SEI CMM Level 5 companies are from India.

- Availability of High Quality Infrastructure

- Concerted efforts to provide dedicated, international quality, cost effective real estate at software parks, Special Economic Zones (SEZ) and IT Investment Regions (ITIR).

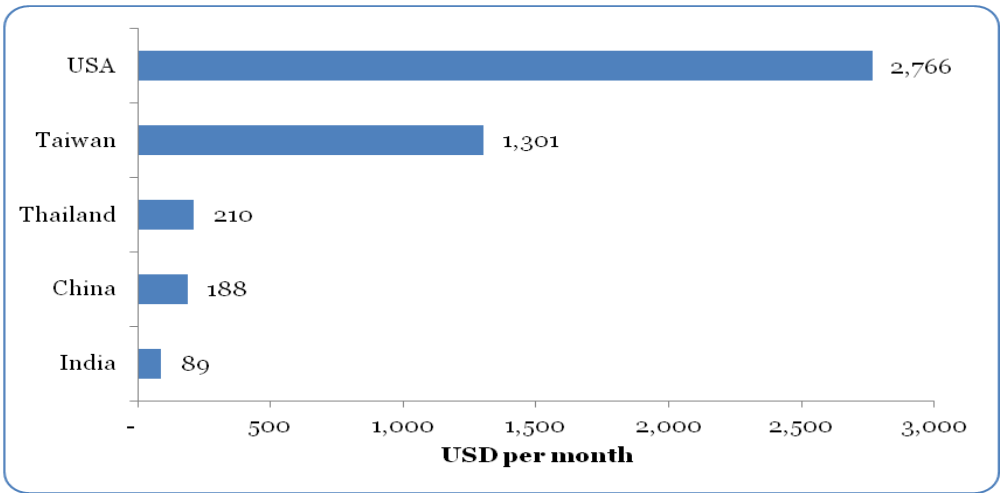
Availability of high quality international and national dedicated telecom infrastructure.

- Cost Competitiveness

- The cost impact of sourcing from Indian IT and ITeS industry can be significant

due to lower wages, cost of living, real estate and other costs (refer Exhibit 2.5). A company based in US or Europe can save 30-40% cost by off shoring operations. India also provides the most economical manufacturing workforce.

Exhibit 2.5: Labour cost (USD per month)



Factors contributing to continued success of IT/ITeS industry

The major cities in India which houses IT & ITeS are Bangalore, Chennai, Hyderabad, Mumbai, Pune, Delhi and Kolkata. However, leading companies are now diversifying and moving delivery center locations beyond Tier 1 cities to Tier 2 and 3 cities, to achieve better cost competitiveness and less employee turnover. Some of the key factors for the concentration and growth of IT/ITeS industry in these cities are:

- Established connectivity to international and other domestic cities
- Well-established physical infrastructure e.g. power, water, telecom etc. (However. cost of infrastructure for these locations seems to be an area of immense concern for service-providers and clients)
- Availability of well-qualified, adequate and low-cost manpower
- Well-developed social infrastructure to support residing population
- Well defined real estate laws, regulations on ownership and transfer of property

According to a study conducted by Gartner, India has a high rating across many parameters considered to ascertain a country's suitability for captive and outsourced offshore IT work. The parameters and their ratings are as follows,

Parameter	Rating
Language	Very Good
Government Support	Excellent
Labour pool	Excellent
Infrastructure	Good
Educational System	Good
Cost	Very Good
Political and Economic Environment	Very Good
Cultural Compatibility	Good
Global and Legal Maturity	Very Good
Data and Intellectual Property Security and Privacy	Good

Language: With more than 35 languages and more than 300 dialects in active use, India is a multilingual, multi-religious, multicultural country. However, India has a strong foundation in the use of English, which is the de facto business language across the country.

India has the second largest English speaking scientific professionals in the world, second only to US. It is also ranked 17th in the IMD global competitiveness ranking for English language skills.

Government Support: The government of India is taking special care to boost the IT Industry. The Department of Information Technology (DIT) endeavours to increase the country's e-readiness by focusing on key emerging technologies. To boost the IT Industry, the DIT also aims to focus on IT education and IT-based education, technologies, systems and applications, broadband, smart cards, radio frequency identification, and networking technologies.

Heavy investments have been earmarked for establishing Bio IT Parks, IT investment regions and the Trans Eurasia Information Network. There is a strong focus on using IT to drive improved governance and transparency in government interactions with the citizens. This will boost both the Indian government's use of IT and the overall domestic IT industry.

Labour Pool: According to a study conducted by IMD Global, India ranked 7th in IT skills . According to DIT, employment generated by IT industry in the year 2011-12 stood at 2.77 million, which is the largest pool of offshore talent in the world. The reverse "brain drain" back to India of Indian nationals who have education and work experience in other countries has accelerated over the past years, and remains a stronghold of high-end expatriate talent returning to the country. Even as global enterprises increasingly look to broaden the base in their choice of countries from a risk mitigation perspective, the size, quality and scale of the Indian labour pool continues to differentiate it from all other countries.

Infrastructure: The government is laying emphasis on augmenting the infrastructure in the country with spending of 8% of its GDP on infrastructure in 2011. The latest budget

underscores an investment of USD 956 billion in the 12th Five Year Plan (2012-17) toward improving highways, ports, airports, power plants and other infrastructure.

Telecommunications infrastructure recently underwent a major change with the rollout of 3G licenses to the telecom players. Airports in India have undergone the most dramatic transformation in Tier 1 cities. A major revamping of airports in some key IT cities is complete or is near completion.

Educational System: According to a study by IMD Global, India ranks 20th in Educational System, based on educational system's ability to meet the needs of competitive economy. It is also ranked 13th on management education and 22nd on university education. India has one of the largest numbers of higher education institutions in the world, comprising at least 634 universities and 33,023 colleges as on December 2011. It also has the second-highest number of engineering graduates, after the U.S.

Education is a high priority for the Indian government. This is reflected by the fact that in 2012 a budget of $ 10.94 billion was allocated towards the education sector in the 12th Five Year Plan

Cost: With recession gradually abating, salaries have been rising and, as a result, attrition levels have also risen. According to a survey by Towers Watson, India is expected to lead salary increases in Asia/Pacific in 2012. The overall increase in the cost of experienced workers in India has meant that the country is no longer the least-expensive option on a purely resource-cost basis, compared with some other developing countries. On an absolute basis, the annual salary of a programmer with about three years' experience is $12,000 to $17,000.Increased levels of attrition in the IT industry is adding to the overall cost. However, even with salary escalation, India has a reasonable cost differential.

Real estate prices have been going up showing double digit growth over the years due to the rising cost of construction material, taxes and rising interest rates. Leading India providers continue to diversify delivery centre locations beyond Tier 1 cities to Tier 2 and 3 cities, to achieve more-competitive labour rates.

Political and Economic Environment: India's GDP growth moderated to 6.5% in the fiscal year 2011-12. Despite having a moderate growth rate in 2011-12, India was one of the fastest growing economies not only in Asia Pacific region, but in the whole world. India is considered a stable nation with a progressive economic mind-set and a stable government. High economic growth continues to attract investments into India, thereby fuelling the overall growth of the industry.

But there are clear areas for improvement for the country. According to Transparency International's 2012 corruption perceptions index, India is ranked 95 out of 183 countries (with 1 being the best and 183 the worst).

India has several country / region specific agreements and treaties with other countries. It has been recognized as key to U.S. strategic interests. U.S., U.K., Canada and Australia are the countries where large number of Indians with technical skills and professional expertise migrate. The country has emerged as a major power in the global economy, which gives it a better voice in international affairs. India's growing economic strength, military prowess, and scientific and technical capacity, as well as the size, population,

strategic location and above all the democratic system of the country strengthen its position in the global stage.

Cultural Compatibility: India has a strong general cultural affinity with most English speaking Western countries, while a cultural compatibility challenge exists with markets in the non-English-speaking world, such as Japan and much of Western Europe. According to IMD Global study, India ranks 12th in the 'openness and acceptance' to foreign ideas. It ranks eighth in flexibility and adaptability of people when faced with challenges. Increasing recognition of India as a major global economy is facilitating India's cultural assimilation with other countries, through greater bilateral relationships at a people-to-people as well as government-to-government level.

Global and Legal Maturity: Indian legal system continues to have an adverse effect on business risk, with examples of court cases prolonging on for years. The World Bank's "Doing Business 2012" report places India 182 out of 183 countries for "enforcing contracts."

India has 57 bilateral investment treaties with nations, including the U.K., France, Germany, Malaysia and Mauritius. India and the U.S. do not have a bilateral investment treaty, although they have a double-taxation avoidance treaty.

The IT Act (amended) of 2008 has brought in major modifications in current Indian cyber law that made it more stringent and comprehensive. India was placed 47th in a recent world audit ranking democracy out of 150 countries (where 1 is the best).

India is putting efforts into strengthening existing bilateral ties with neighbouring nations for better trade prospects. Bolstering of these ties is liable to increase the presence of foreign players in the country. Work is under way to further improve the legal system and financial network, which has a long way to meet international business standards.

Data and Intellectual Property Security and Privacy: The Department of Information Technology has come up with a cyber-security strategy to address the strategic objectives for securing country's cyberspace. According to the Business Software Alliance, PC software piracy in India has declined from 71% in 2006 to 64% in 2010. In the Asia/Pacific region, this places India ahead of China (78%), Indonesia (87%), Thailand (73%) and Vietnam (83%).

NASSCOM continues to lobby the Indian government for improved laws around data security and privacy to bring it up to par with global standards, and has set up the Data Security

Council of India as a Self-Regulatory Organization to establish, popularize, monitor, certify and enforce privacy and data protection standards for India's IT-enabled services/business process outsourcing-BPO industry.

Although India does have a sound data protection and security in place, the country is coming up with various acts and laws to fight the cyber crimes in the country. Although piracy is still commonplace, intellectual property protection is improving, as a result of government and IT industry initiatives. The lack of adequate laws and enforcement mechanisms remains the biggest challenge to achieving global standards in IP, security and privacy protection.

Key challenges/ issues faced by the industry

While Indian IT-ITeS industry is well positioned to continue its leadership position in global offshore outsourcing, it needs to overcome certain challenges to ensure that the industry growth is sustainable. Some of the major challenges faced are listed below:

- Maintain confidentiality of sensitive client data such as bank, health and other private details
- Maintain a competitive edge over low cost destinations such as Philippines, Malaysia, China, Russia, East European countries (i.e. Poland and Hungary) and South American countries (i.e. Brazil, Mexico and Chile)
- Matching the supply of trained manpower to meet the spiralling demand
- Diversification to new areas of business
- Infrastructure bottlenecks in areas such as seamless internet connectivity, uninterrupted power and water supply, transport connectivity
- Tax Holiday withdrawals

Future Outlook

Indian IT sector is expected to be driven by strong demand and Indian expertise and its advantageous position in the IT space. Increasing affluence of domestic consumers and globalization of key segments are expected to enhance the domestic spend on IT services. Indian IT-BPO sector has tremendous untapped potential for growth as it currently accounts for less than 5% of the global market

Some of the key observations on the outlook of the IT industry are:

- The economic slowdown presents a challenge to software vendors, as enterprises are tempted to focus more on the bottom line. Despite the slowdown, the software and service sector would grow at a projected CAGR of 13% for 2009-2013.
- In terms of sectors, the most obvious growth opportunities are in the public sector and among SMEs. Despite the difficult economic conditions, the local market is likely to sustain vendor investment, with the SMEs becoming more sophisticated in their demand for customized software and applications to increase business flexibility.
- India is slowly emerging as a global centre for outsourcing, with large US and European companies focusing on offshore software development to lower costs. Several sectors that promise outsourcing opportunities in this global economic slowdown are auto ancillaries and pharmaceuticals.
- In the broad domestic software market, telecom, government, manufacturing and retail are key verticals driving demand, with enterprises focusing on improvement of customer-service experience, efficiency and decision support.
- The leading sectors for ERP/ERM applications are manufacturing, retail banking, financial services, telecom, IT services/call centres, insurance, state and central government agencies. As services become increasingly important, particularly in competitive industries such as telecom, more companies are adopting CRM solutions.
- There seems to be a paradigm shift in the character of the Indian IT industry, with India gradually moving up the value chain from a low-cost service provider to an integrated higher value global IT services vendor.

India is at the forefront of the rapidly evolving Business Process Offshoring (BPO) market and is well established as a 'destination of choice'. Having grown manifold in size and matured in terms of service delivery capability and footprint over the past decade, the Indian BPO industry is now at an inflexion point — and faces a unique opportunity to enhance its role as a full-service, value-adding partner. There is significant headroom in the addressable BPO opportunity for buyers and providers, and there are sizeable untapped opportunities across a wide spectrum of segments. Also, Indian BP() industry is favourably positioned to benefit from its established delivery capabilities, which bear a key influence on buyers' decision to expand their global sourcing exposure. Over the next five years, the right choices by stakeholders of the Indian BPO industry could affect a fivefold growth. The aspired target is aggressive, but it is achievable, and will bring huge payoffs to India-s economy, employment and role in the global marketplace.

The Indian BPO industry's growth and increasing maturity is reflected across multiple dimensions. In just over a decade, the industry has grown to reach nearly USD 15.9 billion (FY 2012) in export revenues and USD 2.7 in domestic revenues. It employs about 8.0 lakh people, and accounts for more than 37% of the worldwide BPO market share in revenue terms.

Domestic BPO has emerged as a major segment in this pie. From being predominantly voice based, BPO has added other complex processes like KPO, LPO, Clinical research in their product offerings. There is very little to differentiate companies from the product point of view and therefore offering very high quality, personalized, 24/7 customer service would be critical for sustaining growth in this industry, which in turn will require scale, flexibility and expertise. There could be consolidation in the industry in the coming years as big companies would want to expand their offering by acquiring niche players in the industry.

There is threat in Voice based BPO segment in India from countries like Philippines, Mexico and other Eastern Europe Countries as these countries have greater cultural affinity towards US and Europe. But this threat could be mitigated by the immense growth seen in the domestic Telecom sector and BFSI sector. Introduction of 3G licenses in telecom sector would further increase subscriber base in India, hence would increase demand for voice based BPO catering to domestic market. Similarly investment seen in other sectors such as banking, insurance, and consumer business would further create demand for BPO in India.

2.2. EHM (ELECTRONIC HARDWARE MANUFACTURING) INDUSTRY

'Electronics' refers to the branch of science which makes use of the controlled motion of electrons through different media. The global Electronics Industry comprises of various auxiliary sectors namely electronic components, computer and office equipment, telecommunications, consumer appliances and industrial electronics. Electronic Hardware Manufacturing (EHM) Industry refers to the segment of industry which deals with the manufacturing of Electronic components.

2.2.1. GLOBAL EHM INDUSTRY LANDSCAPE INTRODUCTION AND EVOLUTION OF EHM INDUSTRY

Electronics, reported at USD 1.75 trillion, is the largest and fastest growing manufacturing industry in the world. It is expected to reach USD 2 trillion by 2014 and USD 2.4 trillion by 2020. Currently, the demand in the Indian market stands at USD 45 billion and is

projected to grow to USD 125 billion by 2014 and USD 400 billion by 2020. Further, exports are expected to increase from the current USD 4 billion to USD 15 billion by 2014 and USD 80 billion by 2020. Domestic consumption is expected to grow exponentially at a CAGR of 22% for the period 2009–2020. This will be driven by a surge in income levels, the aspirational value of electronics goods, demand from a resurgent corporate sector and the government's focus on e-governance.

Size of the global electronics industry vis-à-vis other major industries

- 4.40 times the size of Oil, Petrol and Minerals Industry
- 2.75 times the size of Chemicals and Plastics Industry
- 2.45 times the size of Food, Beverages and Tobacco industry
- 2.44 times the size of Transportation industry
- 2.20 times the size of Electricity. water and Gas industry

2.2.2. INDIAN EHM INDUSTRY LANDSCAPE INTRODUCTION

The Electronics Industry in India started to take shape in the mid 1960's, catering to the requirements of the Space and Defence sectors. These sectors were under rigid control of the Government and hence the growth of Electronics industry was limited. In the 1970's, developments in consumer electronics, such as transistor radios, Black & White TV, calculators and other audio products added traction to the industry. In the 1980's, advent of colour televisions, computers and digital telephony led to the beginning of a continuous and rapid growth phase for the industry. In the 1990's, electronics industry continued to boom due to the rapid pace of digitalization across all sectors.

In the mid 1990's India's focus shifted to software, coupled with few policy changes such as a steep fall in custom tariffs suddenly made the hardware sector vulnerable to international competition. In 1997, the ITA agreement was signed at the WTO where India committed itself to total elimination of all customs duties on IT hardware by 2005.

In recent years, the electronic industry is growing at a brisk pace, due to the booming domestic sales, especially from consumer electronics segment. According to industry estimates, the size of Indian electronics market was about USD 40 Billion in 2009 with the growth rate hovering at greater than 20% during the previous couple of years. It represented a miniscule 2.6% of the global industry size during that year.

Currently, about 314th of the Indian demand for electronics market is met through imports. The domestic production in India was around USD 25.4 billion in 2011. However with the demand in the Indian market growing at a rapid pace, significant investments are flowing into segment for augmenting manufacturing capacity. (Source: ELCINA)

Global players such as Solectron, Flextronics, Jabil, Nokia, Elcoteq and many others have established manufacturing bases in the country. In consumer electronics, Korean companies such as LG and Samsung have made commitments by establishing large manufacturing facilities and now enjoy a significant share in the growing market for products such as Televisions, CD/DVD Players, Audio equipment and other entertainment products.

2.3. OPPORTUNITY FOR ANDHRA PRADESH

2.3.1. IT / ITES IN ANDHRA PRADESH

Andhra Pradesh is the fourth largest state in terms of area and fifth largest economy in India and has been one of the fore-runners in the IT growth in the country. Hyderabad is now being referred to as 'Cyberabad' – as the city has one of the largest concentrations of software technology companies in India including 7Hills Business Solutions, Accenture, AppLabs, Infosys, Microsoft, CSC, Oracle, Wipro, GE, iGate, ADP, Dell, Deloitte, HSBC, Analog Devices, Rhythm and Hues Studios, IBM, Satyam, Birlasoft, Cypress Semiconductors, SatNav Technologies, TCS, Amazon, Google, HP, Capgemini, Computer Associates, Qualcomm, Cognizant Technology Solutions(CTS), UBS, MindTree, HCL, Polaris, Bank of America, Verizon, Covansys and Sierra Atlantic etc. Besides Hyderabad, other major cities like Visakhapatnam and Vijayawada are also emerging as potential IT hubs because of cost advantage and other enabling factors.

Besides government support in providing fiscal incentives and infrastructure support, the state also boasts of contributing the highest number of IT professionals to the talent pool. With the largest number of IT/ITES SEZ notified, the state has seen almost 50% growth in exports in software sector and also contributing more than 50% to the state's overall exports.

The recent NASSCOM study on assessment of 50 Indian cities as potential hubs for IT industry has listed Hyderabad as one of the "Leader" cities because of enabling success factors like high availability of talent pool, enabling business environment, presence of recognized IT-BPO companies, IT parks, SEZs and government support. Other factors that contribute to the success of the state as a whole and Hyderabad in particular are excellent road and rail connectivity with the major metros. Now with a newly developed international airport with world-class facilities, the city has direct flight connections to London, Amsterdam, Bangkok and the Middle East.

Andhra Pradesh's success in the field of information technology and business process outsourcing over the past decade remains unparalleled. Total export revenues earned by this sector have grown from INR 1000 crore (USD 56 million) in 1998-1999 to INR 36,000 crore (USD 8.5 billion) in 2010-11, a CAGR of 35 per cent. The domestic IT-BPO sector is showing increased traction too. Andhra Pradesh – through its unique value proposition – cost effectiveness, abundant talent and maturing service delivery, has emerged as the cornerstone for this sector, steadily increasing its market share to over 50% of the global sourcing industry. It is estimated that India based resources account for about 60-70% of the offshore delivery capacities available across the leading multinational IT-BPO players. Over the last 10 years, the technology and BPO industry has been an engine of growth for the Indian economy. Between 1998 and 2008, it quadrupled its share of India's GDP and exports to 4% and 16% respectively. In addition, the industry has also had a strong multiplier effect on national GDP and consumer spending by way of capital expenditure, operating expenses and expenditure by the individuals employed in the industry.

Over the last 10 years, the technology and BPO industry has been an engine of growth for the Andhra Pradesh economy. Between 2000 and 2011, it quadrupled its share of India's GDP and exports to 1.5% and 16% respectively. In addition, the industry has also had a strong multiplier effect on State GSDP, Employment and consumer spending by way of capital expenditure, operating expenses and expenditure by the individuals employed in the IT industry.

- AP is the first state to initiate some of the key e-Governance projects in the country
- Presently the share of IT exports of our state is 12.4% of National IT exports.
- IT Employment in AP occupies 11.4% of National IT employment.

- AP IT sector contributes 0.85% share to the National GDP (National GDP share is 5.7%).
- AP ranks 4th in IT performance in the country.
- For the year 2011-2012, AP growth rate is 16% as against National growth rate of 15.7%.
- The total IT turnover from the State for the year 2011-2012 is Rs.53,246 crores (Exports:Rs. 40,646 crores + Domestic:Rs.12,600 crores) .
- IT contributes to 39% of total exports from AP.
- AP has 56 IT SEZs, out of 353 approved IT SEZs in the country.
- Over 600,000 English speaking graduates and nearly half of it are technical /engineering graduates.
- JKC Program: First of its kind initiative in the country, bridging the gap between industry and academia.
- Presence of best engineering and Management colleges such as IIT , IIIT, ISB and MSIT etc.
- Well connected to International destination through world class airports – state of the art sea ports with bulk cargo handling capacity.

PARTICULARS	1999	2012	INCREASE
No. of IT companies	194	1268	**6.5 times**
Employment	12,000	318624	**26 times**
Exports (Rs.Crores)	284	40646	**143 times**
Built-up Space (sft)	200,000	60 million	**300 times**

The growth of the IT sector in Andhra Pradesh has led to tremendous pay-offs in terms of wealth creation and generation of high quality employment. Direct employment in the IT services and BPO segment touched nearly 318,624 by the end of FY 2012.This also translates to the creation of over 1 million indirect job opportunities attributed to the growth of this sector in diverse fields such as commercial and residential real estate, retail, hospitality and transportation, etc. While the sector has maintained a CAGR of over 30% in the past decade, the global economic downturn in 2007-09 has impacted the growth IT. The Industry has been showing promising growth from late 2009 onwards. Leading Industry analysts Gartner in its recent report have estimated that the worldwide technology spending will be to the tune of USD 3,670 billion and IT being an export led sector with a key thrust on banking, financial and insurances services, exports are expected to grow by over 10%, domestic market by 30%. Andhra Pradesh ICT Sector has demonstrated maturity by reducing costs, focusing on new markets, investing in sales and development, domain expertise, enhancing operational excellence and thrust on customer centricity.

2.3.2. EHM IN ANDHRA PRADESH

Andhra Pradesh also has large share in electronic production in India contributing about 7.5% of electronic production in the country and has about 300 electronic industries.

- AP State ranks No.5 in the National Electronic industry
- AP reached Rs.6500 crore production and Rs.650 crore exports during 2009-2010
- Houses about 300 electronic industries with 60,000 employee base and in highly specialized lines.
- Major segments in Electronic Hardware existing in AP include Industrial Electronics,
- Communication & broadcast equipments, Computers & Peripherals, Strategic electronics & components (Semiconductors, Solar & Displays) etc.

In terms of opportunities, the electronics hardware industry can significantly boost Andhra Pradesh's GSDP, generate employment, modernize processes and enable Andhra Pradesh's mission of inclusive growth.

It is estimated that the Indian domestic manufacturing companies can expand the production to USD 100 billion by 2014 and USD 400 billion by 2020 with a very significant contribution to GDP, at 20% for 2020, at par with other economies. The Electronic Hardware Industry aspires to seize 20% of the manufacturing opportunities Indian domestic sector provides.

The electronics hardware industry can increase employment in the state significantly as most of its segments, such as electronic system manufacturing, are human capital- intensive. The electronics hardware industry has a high potential for domestic value addition, especially in some of its segments, e.g., semiconductor design and electronics system/product design.

There is a large opportunity evolving for Electronics hardware industry in e-governance initiatives of the state and central government. Developmental schemes and initiatives launched by the Government such as Sarva Shiksha Abhiyaan (SSA), Restructured-Accelerated Power Development and Reform Programme (R-APDRP) and Mahatma Gandhi Rural Employment Guarantee Act (MGREGA). The government's allocation of funds for developmental schemes and initiatives is close to USD 45 billion. However, IT intervention is required to ensure the effective implementation of these schemes and initiatives.

2.3.3. DEMAND PROJECTIONS WITH 2008 AS BASE YEAR

With a large base of 2 million professionals working in the IT-BPO sector and export revenue from the BPO sector reaching USD 10.9 billion and growing at about 30% per annum, the Indian ITES industry accounted for a 63% share in the global outsourcing market in FY 2008. The size of the Indian market as measured by revenue from IT/ITES and EHM is about USD 64 billion with the export market being pegged at 63% of total revenue at USD 41 billion and domestic market at USD 23.2 billion.

2.3.4. METHODOLOGY AND ASSUMPTIONS

A linear regression analysis was used to predict the growth of IT and EHM revenue, based on the GDP growth for the past 10 years. The share of Andhra Pradesh in IT / ITES exports and EHM production was extrapolated based on past data. Based on the projected demand for IT / ITES and EHM, the land requirement was calculated based on industry norms like space requirement per employee and revenue per acre of land for IT and EHM respectively.

<u>Key assumptions:</u>

- Time horizon – 25 years
- Optimistic GDP growth rate – 7.5%
- Pessimistic GDP growth rate – 6.0%
- Share of AP IT exports to grow from 15% currently to 20% of Indian IT export over the next 25 years.
- Share of Hyderabad in AP IT revenue – 85% (linearly reduced to 80% for the next 25 years attributable to growth of IT sector in other cities in the state)
- Revenue per employee assumed to grow at a CAGR of 4 %
- EHM production assumed to grow linearly to contribute 7% to the national GDP by 2033
- AP share of electronics revenue to grow from present 7% to 15 % in the next 25 years
- Number of IT employees working in offices – 80% (remaining 20 % in IT campuses)
- Space requirement per employee: 100 sq. ft. in offices and 300 sq. ft. in campuses

2.3.5. RESULTS

The regression analysis for the IT sector yielded the following results:

Regression analysis: Indian IT exports

The regression analysis for IT exports and GDP growth of India yielded the following results:

Regression equation – $Y_1 = -38.2 + 0.086*X_1$

where; Y_1 = IT exports of India

X_1= GDP of India

$R^2 = 0.983$

Regression analysis: Indian IT production (exports + domestic)

The regression analysis for IT production and GDP growth of India yielded the following results:

Regression equation – $Y_1 = -48.07 + 0.11*X_1$

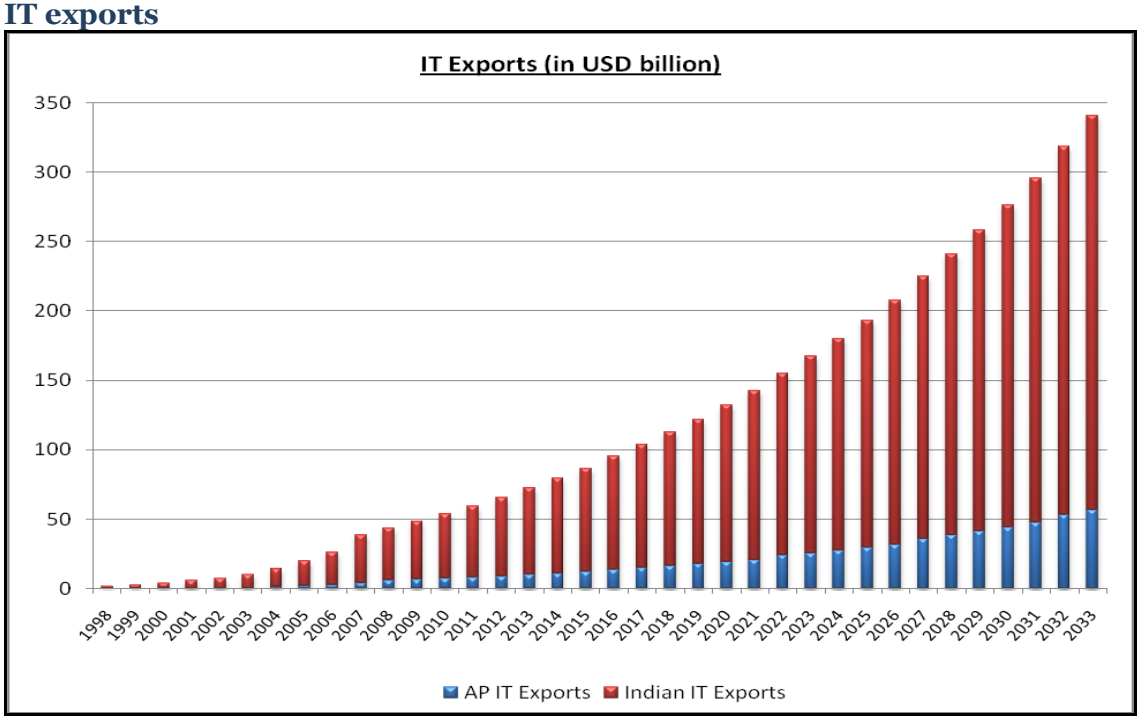
where; Y_1 = IT production in India

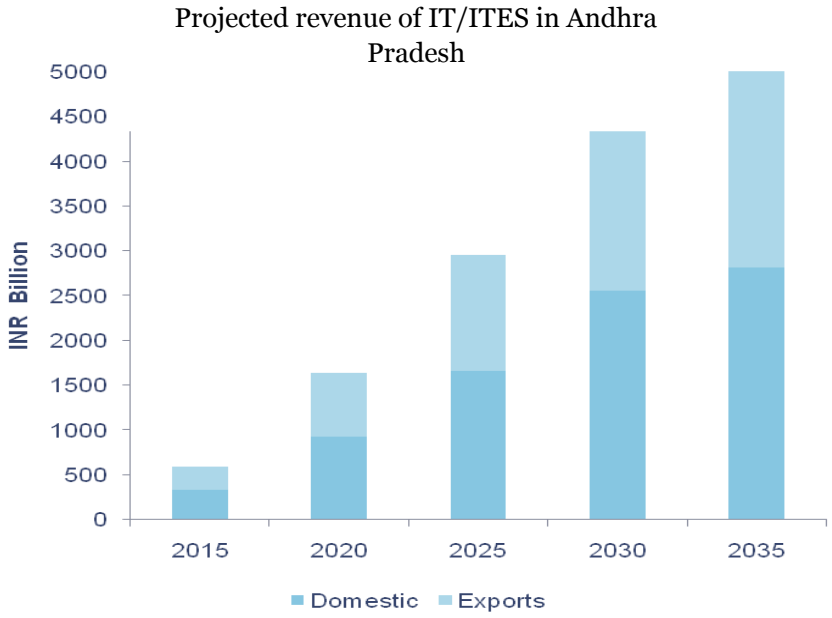
X_1= GDP of India

$R^2 = 0.982$

The above regressions and other estimates gave a CAGR of 11% for IT exports in Andhra Pradesh. Figure 1 below shows the projected IT exports form Andhra Pradesh and India.

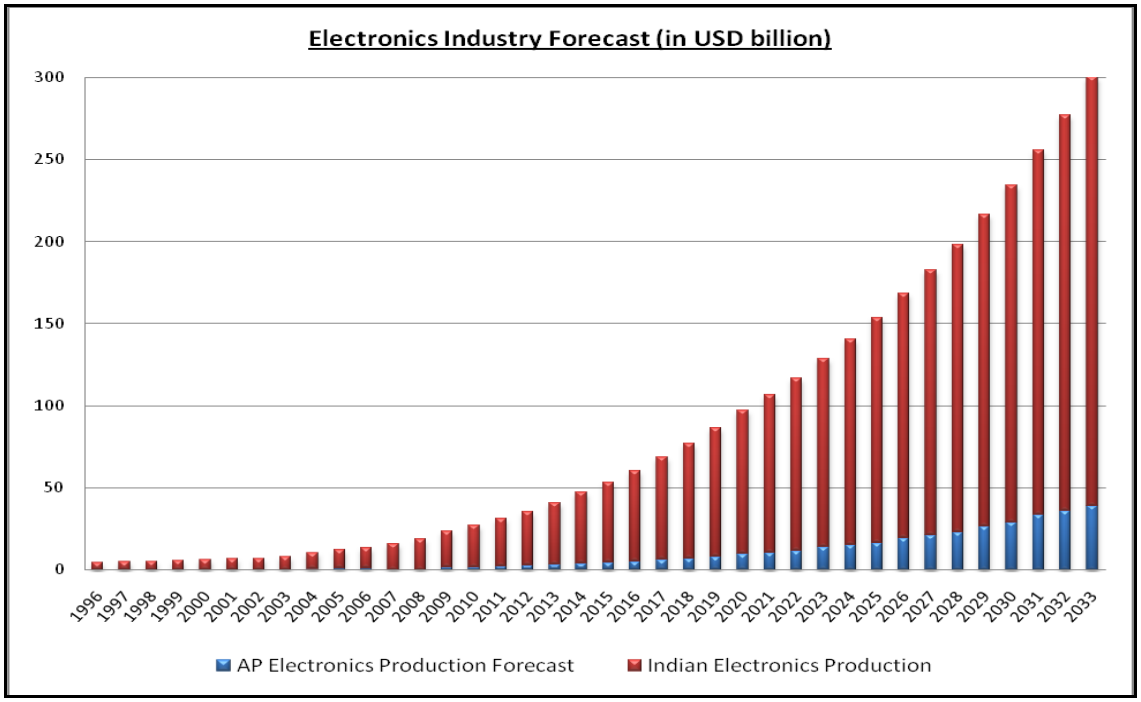
IT exports

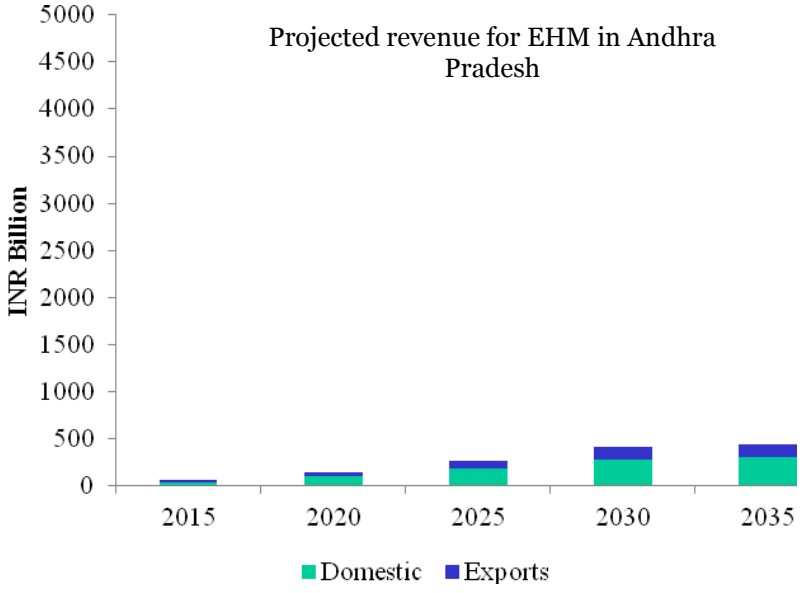




The EHM industry is expected to grow at much faster rate and contribute about 7% to the GDP by 2033 in which the share of Andhra Pradesh is expected to be about 15%. Exhibit: shows the growth of EHM in India and Andhra Pradesh.

Exhibit: Revenue from EHM Production




Projected revenue for EHM in Andhra Pradesh
INR Billion
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
2015
2020
2025
2030
2035
Domestic
Exports

3. PROJECT CONCEPT, DELINEATION & INFRASTRUCTURE REQUIREMENT

To promote investment in information technology (IT), information technology enabled services (ITES) and electronic hardware manufacturing (EHM) units, the government of India has envisaged a transparent and an investment friendly policy for setting up information technology investment regions (ITIRs) – a Gazette notification dated 28.05.2008 published a policy resolution for setting up of ITIRs. These ITIRs are expected to provide –

- Conducive business environment;
- Transparent investor friendly policy; and
- Excellent infrastructure.

Under the Gazette notification dated 28.05.2008, the GoI will consider applications from state governments for establishing ITIRs and approve feasible proposals. Government of India will ensure the availability of external physical infrastructure linkages to the ITIR including **National Highways, airports, telecom and rail** in a time bound manner.

The key provisions of the Gazette notification are:

- The state government would need to identify a suitable location and **notify the location as ITIR under a relevant existing act** or, if required, enact a new legislation to notify the ITIR.
- The state government should **constitute a management board** for development of the ITIR with the functions as specified in the Gazette notification, **under the relevant state act; or if necessary, under a new act**.
- The ITIR delineation should be based on the following criteria:
    - Minimum area of 40 square kilometre, and the area has to be contiguous;
    - Minimum Processing Area of 40%
    - ITIR could include - SEZs, industrial parks, FTWZs or Export Oriented Units, existing settlements, industries and services centres
    - Internal infrastructure would be built and managed by a developer or a group of developers
    - Development of ITIR to be undertaken in two phases:
        - Phase I of maximum 20% of notified area
        - Phase II with a development timeframe of 15-20 years
- The concerned state government can provide additional package of incentives for the development of ITIR.
- The external infrastructure to be created through PPPs (GoI will support, if required, through viability gap funding).

3.1. OBJECTIVES AND REASONING BEHIND THE PROPOSED AP ITIR

The key goals and objectives proposed to be met in the proposed ITIR are –

- Reduce travel times – take work to the workers;

- Active living – walking distance of parks and green areas;
- Proper infrastructure planning – roads, water, drainage, rail, metro, solid waste;
- Promote green cities – reduce carbon footprints; and
- Preserve heritage areas – connect with the past;

3.2. BENEFITS OF ITIR TO THE STATE OF ANDHRA PRADESH

The development of an ITIR will provide a boost to the state government in terms of –

- Better planning for the ITIR would lead to better infrastructure and promote strategies to reduce the carbon footprint of the development.
- Provision of better infrastructure in the ITIR would help in further leveraging the cluster effect of the IT industry – thus attracting new investment into IT/ITES/EHM sectors in the state.
- ITIR shall have linkages with the new IT policy of the state to further enhance sustained growth of the IT industry.
- Provide stimulus to export growth as well as generate direct and indirect employment.
- Provisions can be made to ensure that green buildings and green spaces are promoted so that people residing and working in the ITIR can live in a healthy environment.

3.3. INTEGRATING THE VIEWS OF KEY STAKEHOLDERS

There were a series of meetings held with **the Infrastructure Sub-Committee formed by the government of AP** - members of which include business leaders (in the IT industry) and other key stakeholders in the sector. These meetings provided feedback and views on development of the ITIR in an inclusive environment.

Key areas of concerns and recommendations of the industry include: -

- Development of world class infrastructure – transport, water, sewerage and drainage
- ITIR to be bicycle friendly;
- Water shed management – due considerations to existing water bodies and their interconnections through natural drainage channels;
- Prevent development of urban heat lands – promoting the concept of green buildings;
- Efficient waste management; and
- Accessibility of social infrastructure – walk-able distance of green areas.

3.4. DELINEATION OF AP ITIR

3.4.1. KEY DRIVERS FOR DELINEATION

3.4.1.1. ADVANTAGES OF HYDERABAD

Hyderabad, better known as Hitec City of India, has seen phenomenal economic growth in the last few years and has strengthened its position as one of the best investment destinations for IT & ITES industry. Hyderabad is emerging as one of the fastest growing IT cities of the country and is the fourth largest exporter of software products and services. The NASSCOM study on assessment of 50 Indian cities as potential hub for IT industry has listed **Hyderabad as one of the leader in the sector because of its enabling factors like high availability of talent pool, enabling business environment, presence of recognized IT-BPO companies, IT parks, SEZs and government support**.

Hyderabad has 28 universities, professional colleges, more than 698 engineering colleges, 1920 UG colleges, 713 MCA colleges, 174 Polytechnic colleges, premiere institutes like IIT Hyderabad, IIIT, ISB, BITS only to name a few, which form a rich resource base for the IT industry. Other factor that contribute to the success of the state as a whole and Hyderabad in particular is its excellent air, road and rail connectivity with the major metros.

Regionally, Hyderabad lies on the convergence of national and state highways and trunk, air and rail routes, which link it with other metropolitan centres and key centres of importance in the country. The well-developed national and regional rail-road network crisscrossing the city has improved the access of Hyderabad to a number of key growth centres within and outside the state.

- In relation to the other metros, it is located at a distance of 739 km from Mumbai, 704 km from Chennai, 566 km from Bangalore, 1453 km from Delhi and 1516 km from Calcutta.
- More than 28 flights, 160 trains and nearly 2,000 buses connect Hyderabad every day with other parts of India.
- Hyderabad has 3,000 km of road network including arterial roads, sub-arterial roads, local streets and 21 flyovers.
- It boasts of an optic fibre linked telephone exchanges with telephone density of 11.8 per 100 people.
- With the newly developed international airport with world-class facilities fully functional, the city is directly connected to London, Amsterdam, Bangkok and the Middle East.

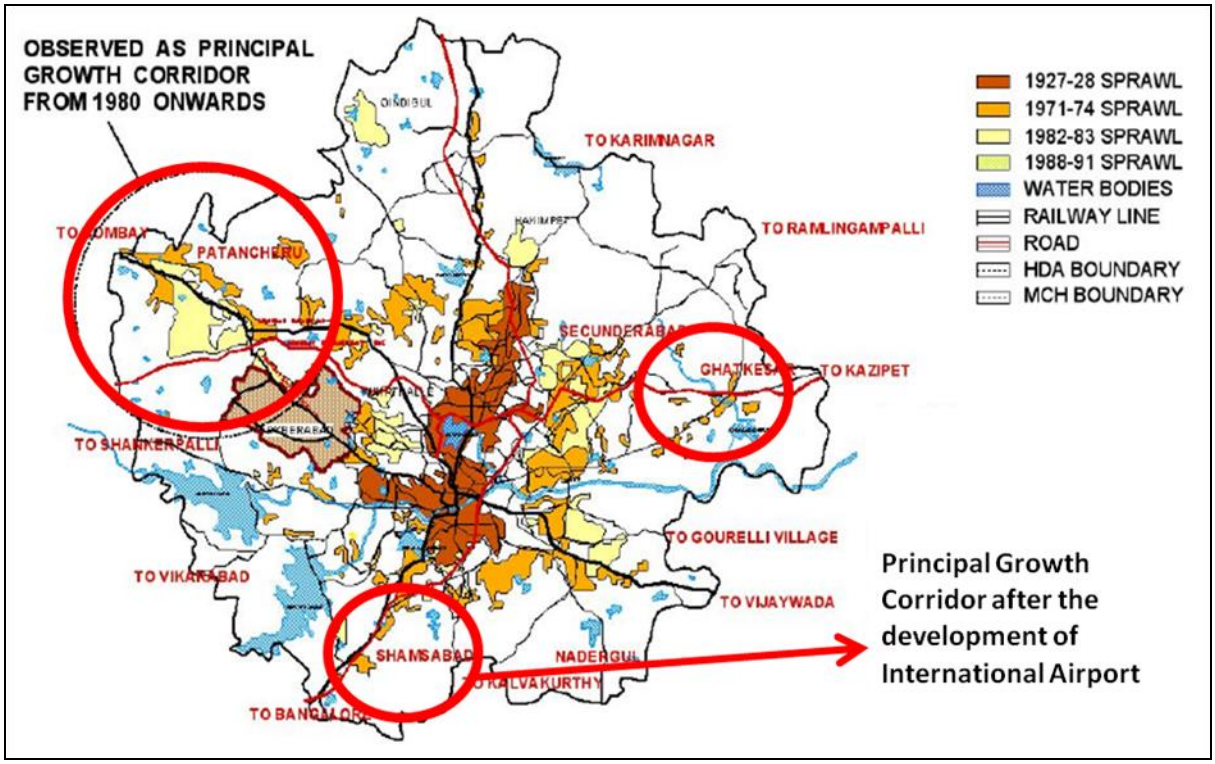
3.4.1.2. SPATIAL DEVELOPMENT TRENDS IN THE CITY

From 1980s onwards, growth was observed in the western part of the city in the Banjara Hills and Jubilee Hills area. Subsequently growth has further moved towards Madhapur and beyond with establishment of Hitech City housing IT & ITES companies.

The growth of Hyderabad is predominantly happening in peripheral areas due to availability of land and government initiatives to provide infrastructure facilities for growth. Most of these mega projects have in turn provided a boost to the development of peripheral areas in Hyderabad.

As shown in the map below, the growth in Hyderabad has been seen primarily in three directions of Patancheru, Shamshabad (after the development of International Airport) and Ghatkesar (proposed large developments like the Infosys centre etc).

Figure 1: Growth trends in Hyderabad



3.4.1.3. "TAKING WORK TO THE WORKERS"

The present IT development is predominantly in the Cyberabad area. This development is not supported by adequate social infrastructure. Therefore, many IT employees reside in areas which are at a distance and commute daily to work.

The ITIR has been delineated in areas which are already developed and have residential settlements – like areas surrounding CDA, Uppal, Pocharam and Maheshwaram. The ITIR notification will accelerate IT developments in the notified areas and encourage developers to develop further social infrastructure supporting the processing area. These developments will eventually help in reducing the travel time of the IT employees.

3.4.1.4. EXISTING IT/ITES/SEZ DEVELOPMENTS IN THE CITY

The IT industry in Andhra Pradesh has been identified as a key driver of the state economy in the forthcoming decade and Hyderabad is expected to be at the forefront of this development. With this as the backdrop, the state has focused on developing an enabling environment and support infrastructure to become a leading IT destination. ITIR is a step in this direction to further strengthen the existing IT industry in Hyderabad.

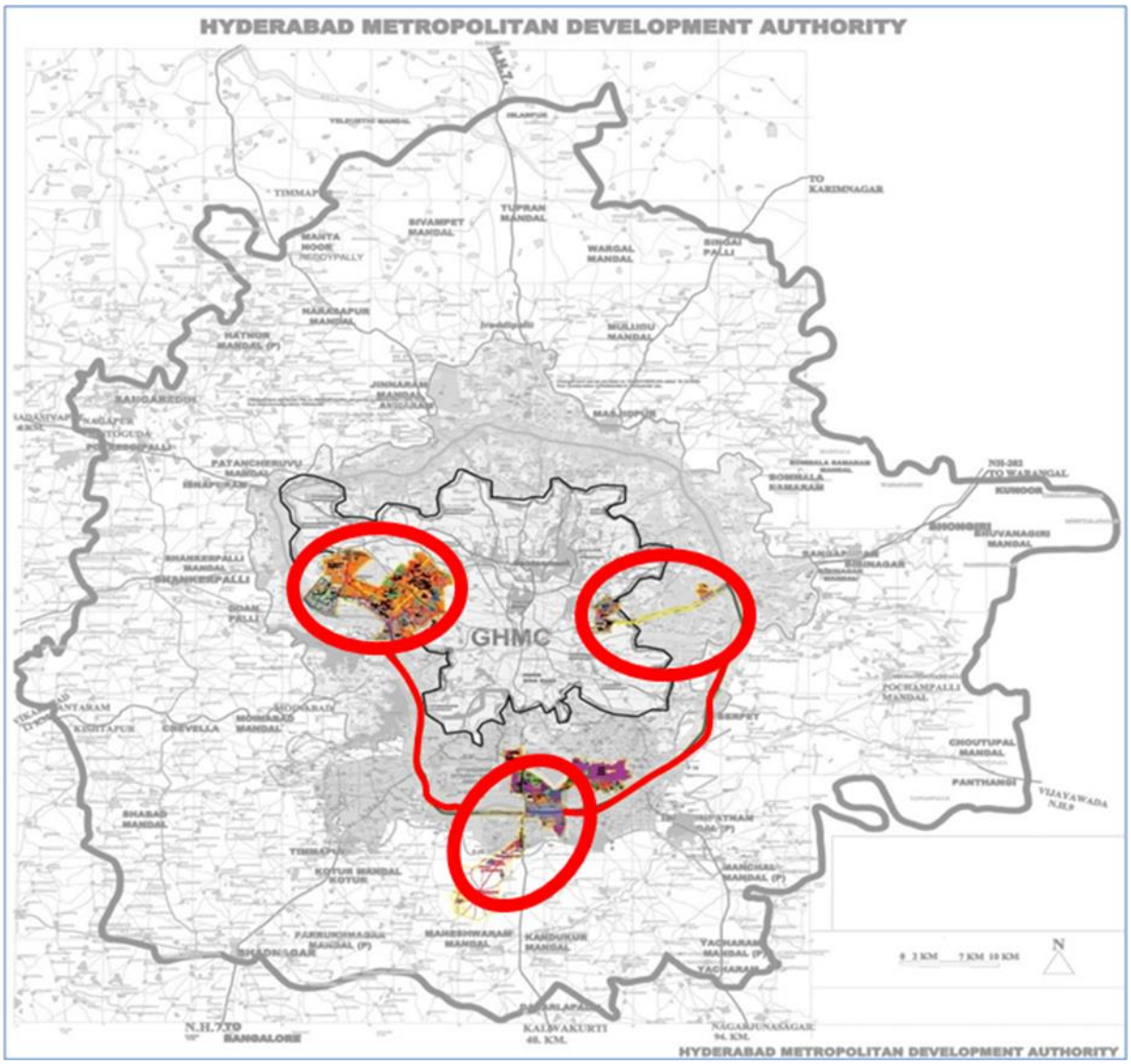
Hyderabad can boast of being one of the first cities in India which initiated coordinated and comprehensive development strategies towards development of the IT industry leading to the development of the techno-township called Hitech City in Madhapur in the late 1990s. This initiative combined with aggressive marketing of the state government has paved the path for IT investment in Hyderabad. The state government promoted similar developments in and around Madhapur, encouraged by the success of Hitech City. Hence, the development has spread to the surrounding areas of Manikonda, Gachibowli, Kokapet, Raidurg and Gopanpally. All these areas are being governed by the Cyberabad Development Authority (CDA).

Simultaneous to the development of Cyberabad area and surroundings, Fab City; Hardware Park; APIIC Work Centre and Maheshwaram Electronic SEZ are coming up in the southern part of the City. The growth in the South was accelerated by the development of the Hyderabad International Airport in Shamshabad.

Besides, Genpact and Prajay Technopark were established in the eastern part of the city. The prospects of growth in the east have increased due to the acquisition of 450-acre land by Infosys for their campus.

The IT/ITES concentrations in Hyderabad are mapped in the following map –

Figure 2: IT/ITES concentrations in Hyderabad



3.4.2. ITIR DELINEATION

The concept of ITIR in Hyderabad has been developed considering –

- A mix of brown-field and green-field development – inclusion of existing developments and vacant land with potential for growth in future
- Current agglomerations being connected through the growth corridor

- Master Plan of the proposed ITIR will be integrated with the HMDA Master Plan
- Integration with the existing and proposed settlements
- Integration with the natural features

Therefore, the ITIR has been delineated with three agglomerations being linked by two connectors along the ORR. The boundaries of all the three agglomerations and the connectors are explained in the following sections and the area details of the three agglomerations are given below –

Zone I: Zone 1 is proposed in the north-western part of ITIR, centring on Hitech city. The total size of this Zone is **86.70 sq km.**

Zone II: This is proposed in the southern part of ITIR including Hardware park, Fab city and APIIC Work centre. It covers parts of Maheshwaram mandal. The total size of this Zone is **79.22 sq km**.

Zone III: Zone III is designated in the north-eastern part of the ITIR area covering parts of Pocharam and Uppal Municipality with an interconnecting corridor along National Highway 202. The total area of this Zone is **10.25 sq km.**

Zone IV: Zone IV is located in the western part of ITIR interconnecting Zone I and Zone II area along the ORR. The total area of zone IV is **11.50 sq km.**

Zone V: Zone V is located in the eastern part of ITIR interconnecting Zone II area and Zone III along the ORR. . The total area of Zone V is **14.32** sq km.

Area details of ITIR

Agglomeration Name	Total Area (acre)	Total Processing Area (Acre)	Total Area (sq. Km)	Total Processing Area (sq.km)	Processing area %
Zone I - Cyberabad & surrounding area	21424.0	6721.2	86.7	27.2	31%
Zone II - Shamshabad International Airport & Maheshwaram	19575.6	9464.1	79.2	38.3	48%
Zone III - Uppal & Pocharam	2532.8	1057.6	10.3	4.3	42%
Zone IV - ORR Connector from Cyberabad to Shamshabad International Airport area	2841.7	1334.4	11.5	5.4	47%
Zone V - ORR Connector from Shamshabad International Airport area to Uppal, Pocharam	3538.5	1779.2	14.3	7.2	50%
Total	**49912.6**	**20356.5**	**202.0**	**82.4**	**41%**

3.4.2.1. INTEGRATION WITH HMDA MASTER PLAN

For coordinated development of the proposed ITIR, integration of new HMDA Master Plan is very important. This master plan has been notified after thorough consultations within the government and with the public. Therefore, we do not propose any changes in the existing master plan. ITIR Development Authority may at a later date decide to make changes in this plans to make suitable modifications for the requirements of IT/ITES/EHM sector.

3.4.2.2. PROCESSING & NON PROCESSING AREAS

Each Zone of the ITIR is planned with integrated non-processing areas to serve residential, commercial, education, health, recreational and other social infrastructure requirements.

Regarding the processing area –

- In Zone I, it has been observed that a lot of IT related industries and associated social infrastructure in and around Hitech city has already taken place and also a lot more are under development. The ITIR Master Plan recognizes the same and suitable provisions have been made with regards to processing area.
- In zone II, the processing areas are Hardware Park, Fab City, APIIC work centre and other already planned SEZs.
- In zone III, the processing areas are allotted in existing IT developments like the proposed Infosys campus and Raheja Mindspace.
- In zone IV and V, which are corridors along ORR, we have provided between 50 to 70% of the total area as processing area in ITIR master plan because growth corridor explicitly allows setting up of IT/ITES units. As of now there are no IT/ITES units proposed in this area.

	Unit	**Zone I**	**Zone II**	**Zone III**	**Zone IV and V**	**Total**
Total Delineated Land for ITIR	Acres	21,424	19,576	2,540	6,363	49,903
Processing Area	Acres	6,722	9,464	1,059	3,114	20,359
Non-processing Area	Acres	14,702	10,112	1,481	3,249	29,544
Brown Field Processing Area Development	Acres	902	385	60	-	1,347
Green Field Processing Area Development	**Acres**	**5,820**	**9,079**	**999**	**3,114**	**19,012**
Area allotted for Hardware	**Acres**	**544**	**6,553**	**80**	**-**	**7,176**
Area allotted for IT	**Acres**	**5,277**	**2,526**	**919**	**3,114**	**11,835**

3.4.3. BUILDING REGULATIONS/FAR/FSI IN AP ITIR

FAR/FSI has been done away with not only in AP ITIR area but also in the entire State of Andhra Pradesh, as per the common buildings rules have been issued vide G.O.Ms.No.86, dated: 03.03.2006 and subsequently G.O.Ms.No.168, dated:07.04.2012.(Pl see the Annexures) The only parameters that will be considered will be abutting the road width, area of the plot and the required height the builder proposed to construct. Based, on these three parameters, the set backs are prescribed. Therefore, there is no FAR/FSI concept. The said building rules are the most progressive and liberal in the country and other states also are trying to emulate the same.

3.4.3.1. INTEGRATION OF EXISTING SETTLEMENTS

The existing village habitation areas are proposed to be included and integrated into the non-processing areas of the ITIR. This will serve the following purposes:

- Prevent stress on the urban infrastructure of the nearby towns and cities
- Prevent any restriction on the existing village sites to grow spatially
- Enable the villages to retain their inherent characteristics both social and physical
- Strengthen the physical and social infrastructure of the villages thereby improving the quality of life, literacy rates, health and such other related aspects of the villagers.
- Create an environment for appropriate vocational training institutes to improve the skill of the existing and future generations in the settlements to serve the skilled/semi-skilled manpower needs of ITIR. Skill improvement by these institutes will also mitigate the economic losses of the villagers due to their agricultural / other lands being acquired for the project.
- This will also be advantageous to the project since local workforce would be eventually available for the project. The advantages of availability of local workforce include the presence of their social fabric to meet their social needs, stability and social security of the workforce and hence provide stability of employment.
- Gather public support for the project since the public is included as an integral part of the project.

3.4.3.2. INTEGRATION OF NATURAL FEATURES

The reserve forest areas in the region are effectively integrated into the Master Plan in such a way that they create a good ambience for the surrounding activity areas.

The various water bodies are being retained in the Master Plan and adequate buffers are also being provided so that they serve as green recreational areas. In HMDA Master Plan, some of the water bodies shown are considered as reclaimable and processing / non-processing activity area is indicated; the same assumptions has been retained in the proposed ITIR Master Plan.

The settlement / habitation areas have been considered as part of non processing area; however in order to maintain the uniformity of design / construction of housing, it is considered that in case the existing habitations needs to be dismantled, new housing will be provided to the affected people as a part of R&R package.

3.4.3.3. CIRCULATION OF TRAFFIC IN ITIR

- The proposed ORR divides the delineated area. The major 3 industrial zones ITIR have an entry point from the State Highway / Outer Ring Road with an adequately planned entry plaza.
- APSRTC bus terminals at Hardware Park, Work Centre, Fab City, Hi-tech city, Pocharam industrial area and other major activity centre areas

- Bus service to various nodes of Hyderabad city, viz., Charminar, Afzalgunj, Koti, Mehdipatnam, Secunderabad Station, Ameerpet, Lakdi-ka-pul, Secretariat, SR Nagar, Kukatpally, Begumpet, Tarnaka, etc.
- District bus services to other cities, viz., all district headquarters & major cities like Visakhapatnam, Vijayawada, Tirupati, Warangal, Guntur, Kurnool, Nizamabad, Karimnagar etc.
- For facilitating mass transport movement between the sectors and the main Hyderabad city, all primary roads are proposed to have an exclusive 4-lane dedicated bus-way as part of the central median, which could be upgraded as LRT (Light Rail transit) system at a future date
- A Truck Terminal has been proposed at the junction of the ORR and the Srisailam Highway at Tukkuguda.
- Dedicated transport zone has been proposed in Zone I.
- Similarly, a viable bus system needs to be proposed for the inter-sectoral movement along the secondary road network. This would be taken up as part of the detailed area level planning when the sectors develop.
- Traffic islands in the form of rotaries (of radius 60 feet) are proposed at strategic junctions. The intersections of all Primary Roads and Secondary Roads would have similar rotaries.
- Proposals are under consideration for extending the Hyderabad MMTS (Multi modal transport system) within Zone IV all along the ORR from Shamshabad to Cyberabad up to Hayatnagar through the Airport and Hardware Park.

In Zone II and Zone III agglomerations, road network has substantially developed. In Zone II, a three level hierarchical road network is planned as given below.

Primary Circulation Network

The alignment of the Outer Ring Road of 75 m indicated in the HMDA Master Plan is retained and rest of the land use is planned suitably.

The primary roads are proposed to cater to the smooth movement of the inter-city traffic and besides, would help in coping with the increased traffic movement between the various sectors and functional areas of ITIR area. The rights-of-way currently in possession have provisions to cater for mass transit system (to be designed separately).

Secondary Circulation Network

All inter-sector level circulation roads that link the sectors are 36 m (120 feet) right-of way and inclusive of 9 m (30 feet) service roads on either side. Some of the major existing village roads have also been proposed to be upgraded as secondary roads to 36 m wide.

Arterial and sub-arterial roads

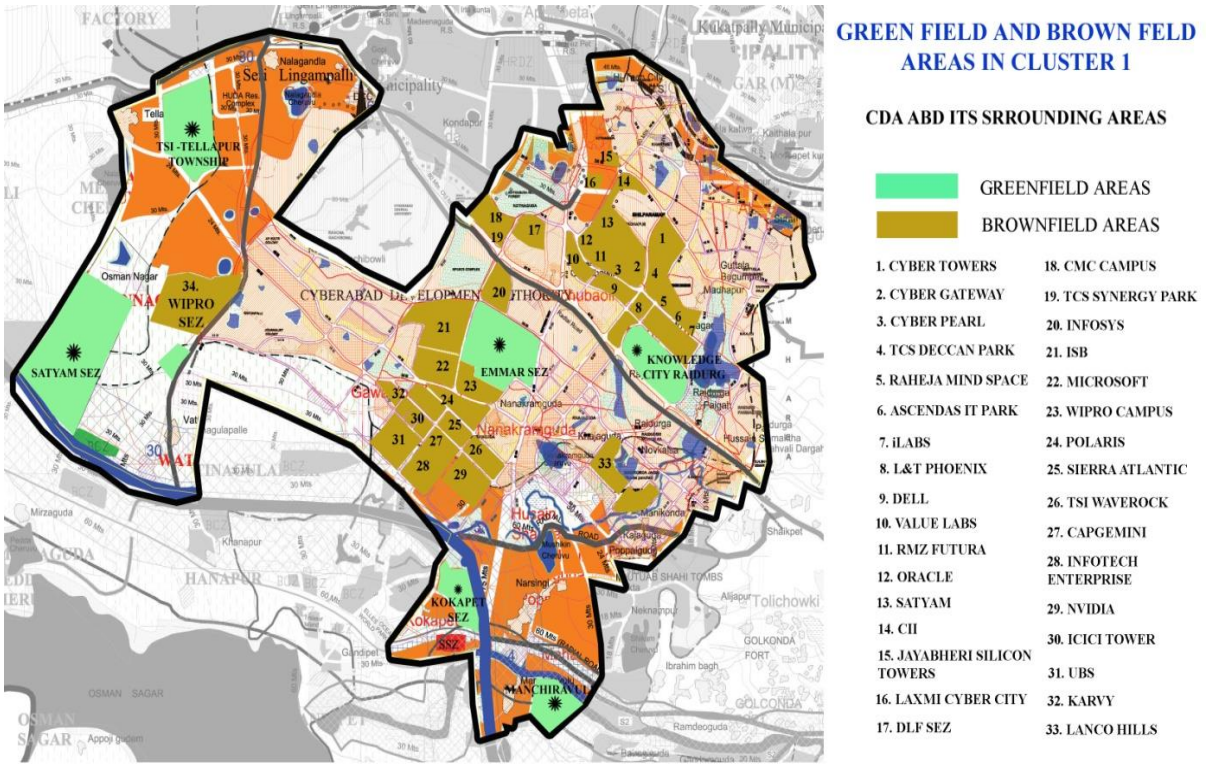
The arterial and sub-arterial roads comprise the connecting roads within the sectors and the neighbourhood and within the major activity areas and shall be within the framework of the above primary roads and secondary roads network.

- The arterial roads proposed are 45 m (148 feet) right-of-way with a 6-lane carriageway.
- The sub-arterial roads proposed are 30 m (100 feet) right-of-way with a 4-lane carriageway. These also include some of the existing village roads other than those mentioned above.
- Other transport requirements

3.4.4. DELINEATED AREA

Zone I – Cyberabad & Surrounding areas (covering approximately 86.7 sq. km)

Figure 3: Delineated area under Zone I



Under this agglomeration, the following two areas have been considered:

- Area under Cyberabad
- Surrounding areas

Cyberabad – better known as Hitech city – is the newly-created exclusive zone developed by the government of AP to give a boost to the development of IT infrastructure.

Located in the western suburbs of Hyderabad, Cyberabad is spread over 52 sq. km., comprising 17 revenue villages, out of which 16 revenue villages are in Serilingampally Municipality and one in Manikonda Jagir gram panchayat. Serilingampally has a population of about 1.5 lakh spread over 24 wards and 151 localities. It houses major IT companies in Hyderabad and falls within the jurisdiction of Cyberabad Development Authority (CDA).

Cyberabad spans the following areas

- Madhapur: Cyber Tower, Cyber Pearl, Cyber Gateway, Raheja Mindspace, RMZ Futura, TCS Deccan Park, Dell, Convergys, Vanenberg IT park, iLabs
- Gachibowli: ISB, Infosys, DLF City, SDE Pramela,

- Kondapur: Jayaberi Silicon Tower, Satyam Cyberspace, HSBC GLT (Laxmi Cyber Tower), Satyam Infocity, TCS park, SMR Technopolis.
- Manikonda: Microsoft, Polaris, Wipro, Kanbay, Franklin Templeton, UBS, CA, Sierra Atlantic
- Vatingunapally: Satyam Campus

Surrounding areas of Cyberabad: The surrounding areas of CDA have also seen phenomenal growth of IT & ITES sectors in the last 2-3 years. This growth has spilled over beyond Hitech City and onto surrounding areas. The major emerging locations and IT hubs in surrounding areas are:

- Tellapur: HUDA Residential Complex in partnership with Tishman Speyers.
- Kokapet: IT SEZ
- Narsingi: ORR junction and Sky Scraper Zone
- Manchirevula: Reliance Corporate Office

Boundary of Zone I

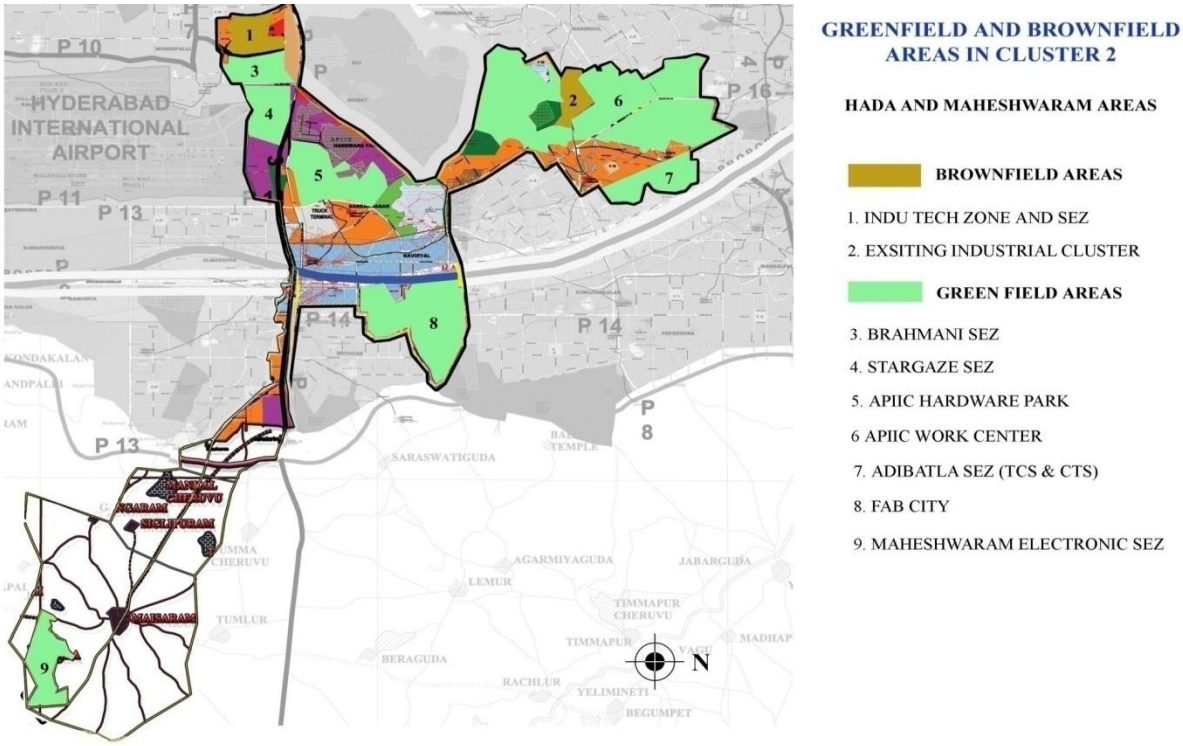
The proposed ITIR delineation boundary runs along the notified Cyberabad boundary along eastern and western part till the end of Kothaguda Reserve forest and it then further runs southwards along CMC to hit Old Mumbai Highway opposite Gachibowli Sports Complex. It then runs along Hyderabad Central University boundary to hit Lingampally crossroads on Old Mumbai Highway. It then runs along this road till Tellapur Junction and takes diversion towards south and then west to hit the 30m wide Vattinagulapally road.

The delineation runs along the same to hit proposed ORR. It runs along ORR till Khanapur Bio Conservation Zone. From this junction it moves northwards along proposed 30 m wide road to hit 30 m wide perpendicular road encompassing outer boundary of financial District. The delineation runs along this road to hit ORR near Kokapet junction. From here the delineation moves southwards along 30 m wide existing road encompassing Kokapet SEZ and proposed SSZ in Narsingi to hit ORR – GC above Musi River.

Zone II - Shamshabad Inernational Airport area and Maheshwaram (covering approximately 79.2 sq. km)

The jurisdiction of Shamshabad Inernational Airport area is over an area of about 458 sq. km. and covers 70 revenue villages and 19 hamlets – all these are in the Ranga Reddy district. From within the Shamshabad Inernational Airport area area, around 5,400 acres fall under the Hyderabad International Airport at Shamshabad. The airport site is located about 21km southwest of Hyderabad city and near the National Highway No. 7 to Bangalore.

Figure 4: Delineated area under Zone II



Boundary of the Shamshabad International Airport area and Maheshwaram agglomeration

The delineated area starts from Srisailam Highway near Pahadi Sarif area and runs along the 470m wide earmarked RCI institutional and special reservation zone. The delineation moves eastwards along earmarked APIIC Work Centre boundary to touch 45m wide road near Muthyala Kunta and then it hits ORR-GC and runs along the same to take diversion near Kammaguda Settlement along proposed 24m wide road. The delineation then moves southwards encompassing Adibatla SEZ with existing Pirangi Nala forming the southern boundary of ITIR Delineation. It then takes south west direction along proposed 24m wide road encompassing Adibatla Settlement to hit 36m wide road.

The delineation runs along proposed roads encompassing the outer boundary of APIIC Work Centre till Shikam Ravira Cheravu and then moves down straight encircling boundary of Fab City and then takes diversion towards the west along proposed 24m wide road to hit Srisailam Highway near Srinagar Settlement.

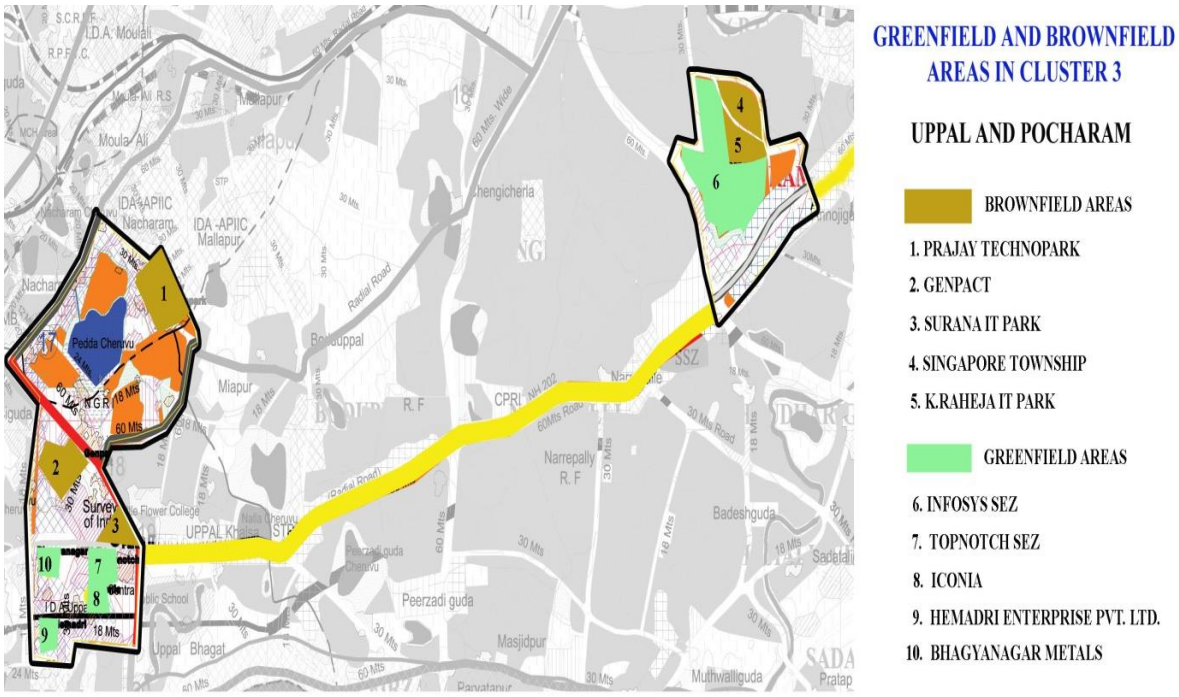
It then moves south along Srisailam Highway till Mankal IDA and then along Shamshabad Inernational Airport area boundary to join and move along Sirigiripuram and Maheshwaram village boundaries encompassing both to hit main road connecting Maheshwaram Village to Srisailam Highway.

The delineation takes a northwards direction along moving along boundaries of survey numbers 455, 449, 438, 437, 436, 434, 433, 245, 244, 264. 265, 268, 269 and 36 along the existing nala.

It hits Srisailam Highway above FAB City to move northwards encompassing APIIC Hardware Park to hit P-10 State Highway. From here, it moves along peripheral roads encompassing APIIC earmarked SEZs to hit Srisailam Highway near Pahadi Sarif.

Zone III - Uppal and Pocharam (covering approximately 10.3 sq. km)

Figure 5: Delineated area under Zone III



Boundary of Uppal and Pocharam agglomeration

This agglomeration contains two distinct areas interconnected by the State Highway to Warangal. The delineation of Uppal area starts at the inner ring road at Hubsiguda Junction near CCMB Campus. It moves along the main road connecting Nacharam IDA. It takes south east diversion opposite Nacharam cheruvu along 30m wide road encompassing part of IDA to connect radial road connecting Mallapur IDA. Moving along this radial road it again hits IRR opposite Genpact.

The delineation then moves along IRR beyond Uppal Public school boundary and the it moves west on 18m wide road within Uppal IDA area. Moving along this road it encompasses part of IDA and then crosses the Warangal Highway to move northwards to hit back IRR near Hubsiguda.

Pocharam delineation starts from Warangal Highway with the road forming the southern boundary. The delineation moves along the 60m wide main road connecting Cherlapally taking diversion near first Y–tuning along 30m proposed road. It moves along the road alignment to encompass Sanskriti Township (Singarore Township), K.Raheja IT Park and proposed Infosys SEZ to hit back Warangal Highway.

Zone IV - Connector – Outer Ring Road (ORR) (covering approximately 11.5 and 14.3 sq. km)

Figure 6: Zone IV ORR Connector – Zone I to Zone II

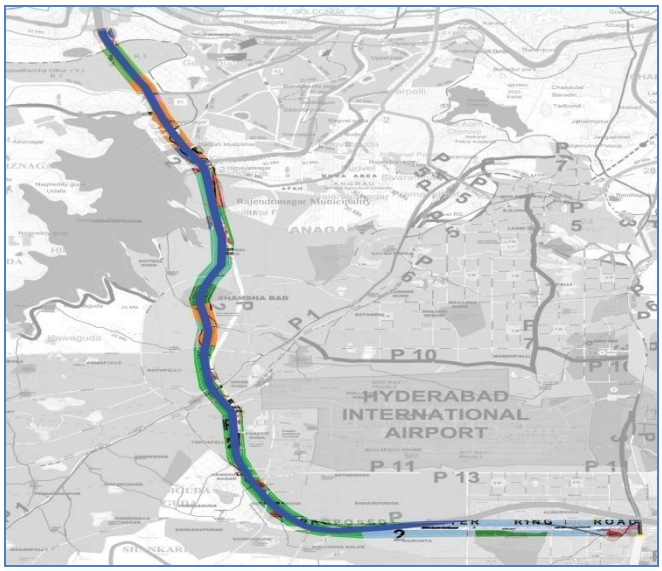
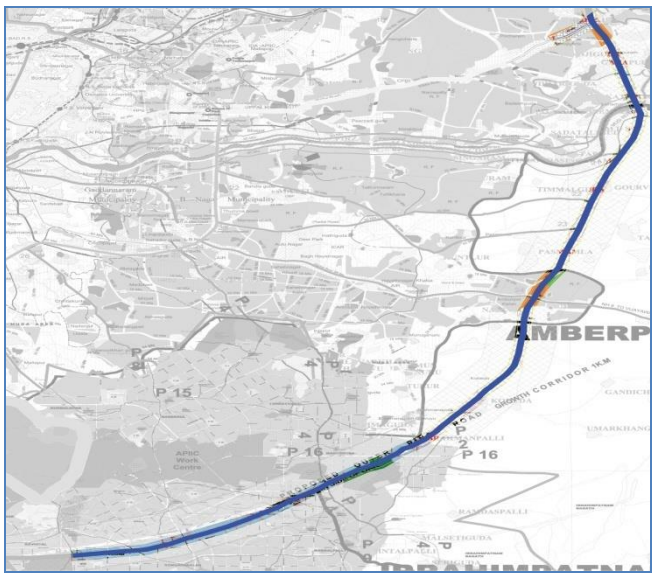


Figure 7: Zone V ORR Connector – Zone II to Zone III



The Government of AP is undertaking major infrastructure facilities in and around Hyderabad – one of them is the orbital linkage to decongest traffic flow on the existing major arterials. The Outer Ring Road is viewed as road-cum-area development project since the aim is the development of well-planned and well-connected urban settlements around the Hyderabad metropolitan area. The 165 km long Outer Ring Road connects Patancheru – Shamshabad - Hayathnagar - Medchal – Patancheru, thus providing connectivity to various State Highways and National Highways, and to provide a bypass to the city of Hyderabad. The importance of the proposed corridor being –

- Relieves congestion on the metropolitan area and inner ring road and meets future demand.
- Provides orbital linkage to radial arterial roads
- Creates options for development of further satellite townships
- Provides linkage to the proposed MRTS and bus system
- Provides quick access to the International Airport from strategic parts of the city
- Connects various new urban nodes outside the city like Hitec City, Games village, IIIT, ISB, Hardware Park, Singapore Township, Financial District etc.

Considering the anticipated growth in the region and development of the proposed satellite townships around the ORR and beyond, and the traffic thereby generated, an 8-lane divided carriage way is planned for a design life of 20 years.

An area of 1 km on either side of the outer edge of the ORR is declared as Growth Corridor which allows development of multi-use zones along the ORR with built up restriction only on land under G.O.111. As specified by Andhra Pradesh Government Order (GO) no. 111 (issued by the Commissionerate by Industries), ***no development (industrial or commercial) is allowed within the non-polluting zone viz. the area falling within a radius of 10 km. from the Himayat Sagar or the Osman Sagar lake boundaries.***

3.4.5. DEMOGRAPHIC PROFILE

There is a mix of urban and rural areas in the notified ITIR. The ITIR comprises 8 mandals in the Ranga Reddy district and one mandal (Ramachandrapuram) in Medak district. Almost 95% of the Serilingampally mandal falls in the jurisdiction of the ITIR, making it the largest settlement within ITIR with a population of 145,695 as per 2001 Census. Nearly 40% of area of other mandals has been delineated as ITIR. The mandals, along with population details are depicted in the table below –

Table 1: Population details of Mandals falling under ITIR as per 2001 Census

Name		Total Population	Number of Household	Sex ratio
Serilingampally	**Total**	**153,364**	**32,642**	**936**
	Rural	-	-	-
	Urban	153,364	32,642	936
Hayathnagar	**Total**	**81,070**	**17,082**	**905**
	Rural	68,200	14,046	930
	Urban	12,870	3,036	785
Saroornagar	**Total**	**391,358**	**83,868**	**929**
	Rural	26,177	5,235	931
	Urban	365,181	78,633	928

Name		Total Population	Number of Household	Sex ratio
Rajendranagar	**Total**	**188,299**	**35,639**	**920**
	Rural	34,156	6,592	945
	Urban	154,143	29,047	914
Maheshwaram	**Total**	**58,499**	**11,850**	**936**
	Rural	58,499	11,850	936
	Urban	-	-	-
Ibrahimpatnam	**Total**	**67,198**	**13,646**	**958**
	Rural	67,198	13,646	958
	Urban	-	-	-
Ramachandrapuram	**Total**	**80,115**	**17,460**	**942**
	Rural	12,937	2,548	924
	Urban	67,178	14,912	945
Ghatkesar	**Total**	**88,935**	**18,565**	**936**
	Rural	70,657	14,885	935
	Urban	18,278	3,680	942
Uppal	**Total**	**118,085**	**26,275**	**926**
	Rural	-	-	-
	Urban	118,085	26,275	926

Based on the projected economic activity and the natural growth rate of the residing population in the ITIR, the expected population in ITIR at the end year 2035 is as follows:

Table 2: Projected population in ITIR

Item	In persons lakh
Population in ITIR	13.63

3.4.6. SOCIO – ECONOMIC CHARACTERISTICS

The ITIR has a comparatively high literacy rate of 68.31% as per the 2001 Census as compared to similar areas. However, the non-worker population is higher than the worker population. This indicates deficiency of employment opportunities in these areas. The notification of ITIR will help improve the work participation rate.

Table 3: Work profile of people residing in Mandals in ITIR as per 2001 Census

Name		'Total Working Population'	'Total Main Worker'	'Total Marginal Worker'	'Total Non Worker'	'Work Participation Rate'
Serilingampally	**Total**	**48,470**	**43,032**	**5,438**	**104,894**	**32**
	Rural	-	-	-	-	-
	Urban	48,470	43,032	5,438	104,894	32
Hayathnagar	**Total**	**34,833**	**28,433**	**6,400**	**46,237**	**43**
	Rural	28,898	22,848	6,050	39,302	42
	Urban	5,935	5,585	350	6,935	46
Saroornagar	**Total**	**129,329**	**120,653**	**8,676**	**262,029**	**33**
	Rural	10,902	8,943	1,959	15,275	42
	Urban	118,427	111,710	6,717	246,754	32
Rajendranagar	**Total**	**64,253**	**55,290**	**8,963**	**124,046**	**34**
	Rural	13,479	9,895	3,584	20,677	40
	Urban	50,774	45,395	5,379	103,369	33
Maheshwaram	**Total**	**29,864**	**26,468**	**3,396**	**28,635**	**51**
	Rural	29,864	26,468	3,396	28,635	51
	Urban	-	-	-	-	-
Ibrahimpatnam	**Total**	**31,014**	**25,281**	**5,733**	**36,184**	**46**
	Rural	31,014	25,281	5,733	36,184	46
	Urban	-	-	-	-	-

Ramachandrapuram	**Total**	**25,863**	**21,429**	**4,434**	**54,252**	**32**
	Rural	5,826	3,935	1,891	7,111	45
	Urban	20,037	17,494	2,543	47,141	30
Ghatkesar	**Total**	**32,003**	**27,129**	**4,874**	**56,932**	**36**
	Rural	26,423	22,180	4,243	44,234	37
	Urban	5,580	4,949	631	12,698	31
Uppal	**Total**	**37,326**	**35,509**	**1,817**	**80,759**	32
	Rural	-	-	-	-	-
	Urban	37,326	35,509	1,817	80,759	32

3.5. PHASING OF INFRASTRUCTURE

As per the requirement of the Gazette Notification and for efficient planning and development of the ITIR, the proposed ITIR is divided into two phases. Phase I will involve physical development in the area demarcated for Phase 1, developing the policy framework of the ITIR, constituting governing and administrative bodies, provision of requisite infrastructure and detailed master planning.

For narrowing down & identification of the activities under Phase I, the following considerations are important:

- The industrial development happenings in and around Hi-tech city, Fab city, hardware park, APIIC work centre, Pocharam & Uppal industrial area currently and their observable growth plans.
- The wide spread social infrastructure growth in the Hyderabad - Secunderabad municipal area and in the outskirts as satellite clusters.
- The marked improvement in road transport networking by APSRTC & private operators linking the Central Hyderabad area, satellite clusters of social infrastructure and areas of industrial development activities.
- Medium and long term plans of R&B department of AP Government for road network development in the proposed ITIR region.
- Medium and long term plans for metro rail networking.

Keeping the above in view and also considering the fact that the social infrastructure development in and around Central Hyderabad area is fairly good and wide spread, it was felt that the industrial development activities may be of concentration in phase I and majority of the development of non processing areas can be considered in phase II.

Drawing 3 shows the conceptual Master Plan for the proposed ITIR. Drawing 5 shows the phasing plan of the proposed ITIR.

3.5.1. PROPOSED LAND USE

The total area available for ITIR is 201.99 sq. km. out of which reserve forest accounts for 5.26 sq. km and water bodies for 5.47 sq. km. As these two areas are restricted for use, the land use plan for the remaining areas of the ITIR is depicted in Table 4 below.

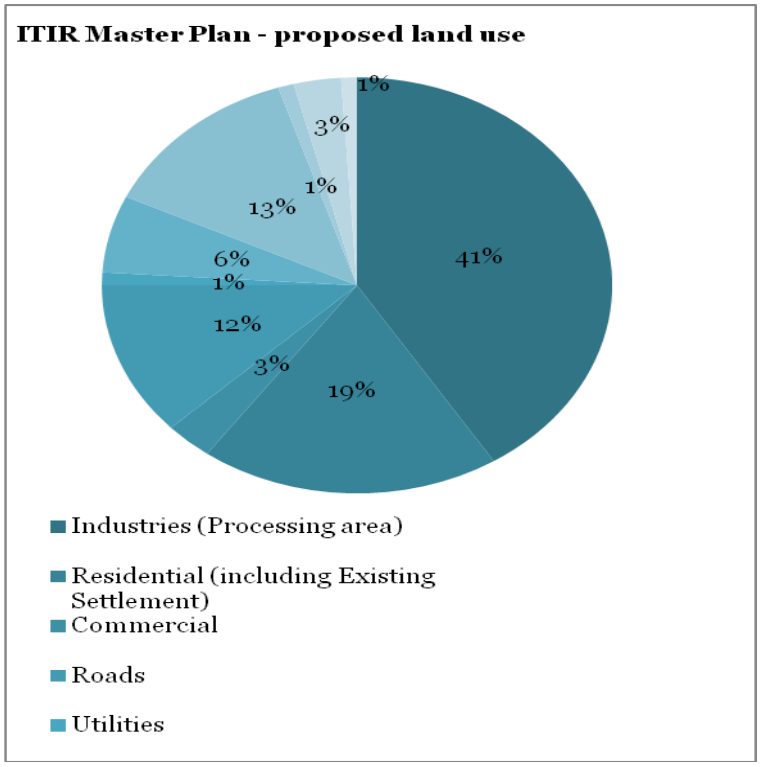


Table 4: Proposed Land Use

Description	Total		
	Sq. km.	Acre	%
Total Area	201.99	49,912.62	100.00%
Industries (Processing area)	82.38	20,356.46	40.78%
Residential (including Existing Settlement)	38.13	9,422.09	18.88%
Commercial	6.61	1,633.36	3.27%
Roads	24.56	6,068.88	12.16%
Utilities	1.40	345.95	0.69%
Greens	11.66	2,881.24	5.77%
Existing Forest, Water Bodies, Green Zone	25.47	6,293.75	12.61%
Health care & institutional	3.03	748.73	1.50%
Recreation	6.51	1,608.65	3.22%

Logistics	2.24	553.51	1.11%
TOTAL	**201.95**	**49,912.62**	**100.00%**

The HMDA Master Plan is the basis for all our workings. **"Industries" is a land use classification as per Master Plan. 40.78% is area on the map which has been marked as "Industries" area in that Master Plan.**

Processing Area is calculated based on existing projects, upcoming projects and land available for further expansion related to IT/ITES and EHM industries out of this "Industries" area. There are some allotments in this "Industries" area which do not belong to IT/ITES and EHM sectors.

Land use details pertaining to each zone are mentioned in Table 5 below.

Table 5: Zone wise Land Use details

Description	Zone 1			Zone 2			Zone 3			Zone 4			Zone 5		
	Sq. km.	Acre	%	Sq. km.	Acre	%	Sq. km.	Acre	%	Sq. km.	Acre	%	Sq. km.	Acre	%
Total Area	86.70	21,423.95	42.92	79.22	19,575.61	39.22	10.25	2,532.82	5.07	11.5	2,841.70	5.69	14.32	3,538.54	7.09
Industries (Processing area)	27.20	6,721.24	31.37	38.30	9,464.10	48.35	4.28	1,057.61	41.76	5.4	1,334.36	46.96	7.2	1,779.15	5027.93
Residential	15.80	3,904.25	18.22	19.26	4,759.23	24.31	3.07	758.61	29.95						
Commercial	4.40	1,087.26	5.07	1.98	489.27	2.50	0.23	56.83	2.24						
Roads	6.78	1,675.37	7.82	3.95	976.06	4.99	0.61	150.73	5.95	6.1	1,507.34	53.04	7.12	1,759.38	49.72
Utilities	0.85	210.04	0.98	0.50	123.55	0.63	0.05	12.36	0.49						
Greens	6.79	1,677.84	7.83	4.35	1,074.90	5.49	0.52	128.49	5.07						
Existing Forest, Water Bodies, Green Zone)	16.11	3,980.85	18.58	8.42	2,080.62	10.63	0.94	232.28	9.17						
Health care & institutional	2.17	536.22	2.50	0.80	197.68	1.01	0.06	14.83	0.59						
Recreation	5.40	1,334.36	6.23	0.95	234.75	1.20	0.16	39.54	1.56						
Logistics	1.20	296.53	1.38	0.71	175.44	0.90	0.33	81.54	3.22						
TOTAL	**86.70**	**21,423.95**	**100**	**79.22**	**19,575.61**	**100**	**10.25**	**2,532.82**	**100**	**11.50**	**2,841.70**	**100**	**14.32**	**3,538.54**	**100**

3.5.2. LIVABLE PLAN – INTERNAL INFRASTRUCTURE

The proposed ITIR, being located to the south of Hyderabad and within the influence zone of the Hyderabad Metropolitan Development Area, in the normal course may have to share the same basic and primary infrastructure facilities as that of Hyderabad. However as per the Gazette notification, the planning and development of the primary infrastructure network for the ITIR is linked with the focused development of the Investment Region and the implementation can be with financial support of GoI and the physical development through the various AP Government functional agencies like Hyderabad Metropolitan Water Supply and Sewerage Board, APTRANSCO, APIIC, IT&C Department etc. The general internal infrastructure and utilities envisaged are:

- Roads
- Power Supply
- Water Supply and WTP
- Sewerage System and STP
- Solid waste management system
- Telecommunication
- Site Grading (limited to the common infrastructure needs)
- Surface Drainage
- Signage
- Walkways

3.5.2.1. ROAD NETWORK

A proper internal road system of arterial, primary, secondary and local distribution roads needs to be connected to the individual sector entry points by the developer. In order to maximize lead values and minimize land taken by major and minor roads, a proper hierarchy of roads is to be planned to ensure smooth traffic movement inside the ITIR. Three main categories of roads are proposed for the internal road transportation network and the details are indicated in Table The major arterial roads are the three-lane carriageways in both directions. The primary roads are the two-lane carriageways in both directions. The secondary roads and tertiary roads are single lanes in both directions.

Table 6: Hierarchy of Roads

Category	Road Width (m)	Carriageway Width (m)	No. of lanes
Arterial Road	45	11.0+11.0	6 lane (with 2.0m central divider)
Primary Road	30.00	7.5+7.5	4 lane (with 2.0m central divider)
Secondary Road	24.0	5.4 + 5.4	Two lane
Tertiary Road – I	18.0	4 + 4	Two lane
Tertiary Road – II	15.0	3.5 + 3.5	Two lane
Tertiary Road – III	12.0	3.5+3.5	Two lane
Tertiary Road – IV	9.0	3.75+3.75	Two lane

Pedestrian walkways are provided for all categories of roads. All services for drains, sewers, water, power and telecom should be contained within the road reserves. Necessary signage, street name boards, zone guiding maps and visitors guidance map etc. shall be positioned at necessary locations.

The project envisages utilisation of the existing Srisailam State Highway & some of the district / village roads by widening and strengthening wherever essential and possible.

3.5.2.2. POWER SUPPLY

Electric sub-stations are suggested at Electric Sub-stations suggested at Golconda Khurd, Nadergul, Sardarnagar, Mankhal, and in the Sector squares of the respective Sector clusters Nadergul, Raviral, and in the Sector squares of the respective Sector clusters. The total power required for the entire ITIR area is given below in Table 7.

Table 7: Power Demand in ITIR

Description	Area in acres	Ultimate Demand (MW)
Total	49,912	3,348

The total final power demand for the ITIR area is 3,348 MW.

3.5.2.3. WATER SUPPLY

Water supply network, fire hydrants and booster pumps along the common roads and at strategic locations shall be provided. Underground sumps along with over-head tanks / ELSRs and water treatment plants are located at strategic points as denoted below for efficient water supply and drinking water will have to be connected with this pumping system with adequate pipelines. Water balancing has been done taking into consideration potable and non-potable water requirement and the availability of treated water.

SITES for ELSRs suggested at Hardware Park, Hi Tech City, Pocharam/Uppal Industrial Area Mankhal, Shamshabad, Nadergul and at the Central Squares of the respective sector clusters in Shamshabad International Airport area. Site for Major Service Reservoir suggested at Mangalpally at Nagarjuna Sagar Highway and Sardarnagar respectively.

The estimation of average daily water demand will be based on the type of land use as well as the fire fighting requirements. The planning parameters and design criteria considered in the estimation of water demand for the water distribution scheme is detailed in **Estimation** of Water Demand. Total water demand for the entire ITIR area is calculated as follows and given in table.

Table 8: Estimated Daily Water Demand for ITIR

Description	Area in acres	Potable water demand (MLD)	Non Potable water demand (MLD)	Total water demand (MLD)
Total	49,912	195	257	452

The total water required for the ITIR area is 452 MLD, of which 195 MLD is potable water and the remaining 257 MLD is non potable water. The requirement of potable water shall be serviced from the storage reservoir and the non potable water through recycling.

At the detailed engineering stage, based on the actual occupant industries profile, the treated sewage can be reused for non potable purposes. The balance potable water can be taken from the service reservoir located in Mangalpally near Nagarjuna Sagar Highway.

Water Pumping Station

A water pumping station is required for pumping the clear water from the underground tank to respective over head tanks. Required number of ELSR shall be proposed in order to cater the entire ITIR and the sizing being in proportionate to the demand.

A gridiron system of pipe network is recommended for the proposed water distribution network. Within the gridiron system of pipe network, all primary and secondary mains are looped and interconnected. This arrangement eliminates dead ends and permits water circulation in such way that a heavy discharge from one main allows drawing water from other pipes. This also helps in preventing water from developing tastes and odorous due to stagnation. In addition to the water supply for industrial cluster / plots, the piping system also includes to water supply for fire fighting. Whenever fire occurs, it is desirable to use stand by booster pumps to increase pressure in the entire system.

3.5.2.4. SEWERAGE SYSTEM

The objectives of the sewerage / sullage system are to cater for the anticipated peak discharge requirements and to treat the waste to the discharge standards required. The estimation of the sewage / sullage discharge is to be based on the land use distribution such as industrial, commercial, residential, recreational, institutional etc.

Sewerage Treatment Plant & Sullage Treatment Plants, domestic sewerage network, sullage network and sewage pumping stations shall be planned at the Raviral Cheruvu and central squares of the sector clusters, and near Mangalpally at Nagarjunasagar Highway. The treated water, to the extent required for non potable purposes shall be pumped to overhead tanks and re-circulated by gravity. Excess treated water shall be discharged into the Raviral Cheruvu through properly designed piping systems.

Table 9: Total Sewerage Generation in ITIR

Description	Area in acres	Potable water demand (MLD)	Non Potable water demand (MLD)	Total water demand (MLD)	Sewerage Generation (MLD)	Sullage Generation (MLD)	Total Sewage generated with 10% infiltration (MLD)
Total	49,912	195	257	452	132	182	359

Sewerage schemes & treated water conveyance system

The sewerage system basically comprises the collection system of pipe network, Sewage Pumping Stations (SPS) and sewage treatment plants. The sewage will be pumped through rising main to the gravity sewer. The sewage from the respective industrial cluster will be collected at the terminal pumping station where the STP is located and will be treated.

The total sewerage treatment plant scheme consists of pumping station, silting chamber, bar screen, grit chambers, aeration tanks, secondary clarifier, sludge sump, sludge thickener, thickener over flow sump, and treated water sump. The total design criteria for the above tanks for the treatment plant shall be based on the “manual on sewerage and sewage treatment” prepared by Central Public Health and Environmental Engineering Organization, Ministry of Urban Development, New Delhi.

The sewage will be treated at the STP and the treated water will be discharged in to the Raviral Cheruvu after taking permission from APSPCB.

The average depth of cutting for the sewer laying will be in the range of 3.5m to 4.0m. Subject to the soil data, the proposed sewerage scheme may have to be adjusted accordingly.

If the soil is rocky at shallow depth, then vacuum sewerage system for the affected area can be considered. Detailed soil study is important and needs to be carried out to facilitate down-stream design works.

3.5.2.5. SOLID WASTE MANAGEMENT

Based on the population and the per capita waste generation, the total municipal solid waste (MSW) generated for the ITIR has been estimated **assuming 450 gpcd waste generations** and the total solid waste generation estimated for the ITIR area is about **675 TPD**. Details of MSW generation are given in Table 10.

Table 10: Solid waste generation in ITIR

Estimated employees to reside in ITIR	1,363,000
Floating population @ 10%	136,300
Total Population	1,499,300
Considering per capita waste generation of 450 g per day, total MSW in TPD	675

Solid waste collection & transportation

The MSW from household, commercial and institutional area will be collected daily through push carts, auto tippers, RC vehicles & dumper placers for the entire ITIR area. The collected waste shall be transported either to the transfer station for segregation & compaction or directly to the processing and landfill site depending on its nature and treatment.

Solid Waste – Processing

Solid waste management is one of the most essential services for maintaining the quality of life and for ensuring better standards of health and sanitation.

The type of solid waste generated will be both biodegradable and non-biodegradable in nature. The domestic waste generated mainly from the residential, commercial and institutional area shall be biodegradable in nature. Hence, a comprehensive system needs to be evolved to scientifically dispose the biodegradable waste and inert waste in accordance with MSW 2000 Rules. Established scientific disposal of domestic biodegradable waste is in practice and one such method is bio composting. The compost obtained can be marketed or used as manure for the entire ITIR area. Waste to energy recovery methods can also be explored.

Solid Waste - Disposal

The inert and reject materials after treatment shall be collected and transported to suitable land fill sITES which are to be identified as part of separate solid waste management project for the ITIR area during the detailed master planning exercise.

SWM facilities need to be established and operated by local competent authorities / authorized agencies approved by AP Government.

3.5.2.6. OTHER INFRASTRUCTURE

3.5.2.6.1. SITE GRADING

The terrain of the land is fairly plain with limited contour variations. As the proposed ITIR shall have different zones and within each zone having processing & non processing areas, complete with their associated developed plots, ready built office spaces etc. it is advisable to avoid levelling the ground to maintain single platform level considering the contour variation.

However the common infrastructure facilities which are to be created by the developer such as roads, greens & blues, utilities etc. needs land preparation including site grading. The extent of site grading depends on the contour. All earthworks need to be carried out with appropriate technical considerations to avoid erosion or possibility of localized slip failure. Provision for temporary surface drainage system is to be made to minimize delay in work progress during wet weather condition.

3.5.2.6.2. DRAINAGE

The drainage system needs to be designed to cater for the entire ITIR area based on the topography. The system needs to handle storm water drain, drains from the individual sector / cluster / zone.

3.5.2.6.3. STREET LIGHTING

Street lighting is covered under the infrastructure. In the scheme of illumination, lighting has been conceived in 3 different forms.

- Street lights for the entire roads
- Post –top-lanterns for the major path ways
- Flood lighting from towers for all open areas

All the above lighting in combination will illuminate the entire ITIR sufficiently.

The Lighting Requirements for the individual plots of industrial zone and Distribution network within individual plots of industrial zone are to be done by the user industries. All the road and streets should be provided with street lighting not only to assist pedestrians and traffic but also to increase safety and security in the area. It is recommended that all lighting should be by high-pressure sodium lanterns mounted on power poles or on streetlight columns. Average illumination should be about 20 flux.

3.5.2.6.4. LANDSCAPING & SECURITY

This includes works associated with the landscaping within ITIR area covering tree strips along the roads & periphery, public greenery, pocket parks etc.

3.5.2.6.5. TELECOMMUNICATION

All telecommunication services in ITIR are expected to be provided through the Department of Telecommunications (DoT) and other private operators. Value added telecom services are covered in the infrastructure costing. Internal communication system for the occupant units is not covered under the general infrastructure costing. All communication services will be provided to subscribers at standard rates.

3.5.2.6.6. SIGNAGES

A proper design needs to be done during implementation stage for the design of individual signs. Wherever possible, signs are to be mounted on other constructed elements, such as buildings, walls, fences and kiosks. Where several signs are required at a single location, it is helpful to mount them on the support. Signs shall be carved in stone or terracotta in order to merge them with the surroundings. Painted signs are to be avoided since they will require repainting and the materials and colour may not blend with the green landscape. If painted signs cannot be avoided, the colour scheme should be earthy brown, black, and yellow ochre.

Where local information is frequently changed, wall mounted or freestanding display units in transparent plastic or toughened glass to be used. The selection factors to consider include mounting height, scale, materials, font size and colours. The Choice of font and height of the sign will be related to speed of the movement of the user. Separate focus lights will be used to light the signs. The Advertisement signs should be well designed and should not dominate the visual environment in the form of hoardings.

3.5.2.6.7. WALKWAYS

Aesthetically designed walkways along with lush green environment on either side are to be planned. Adequate circulation and green belt corridors which include pedestrian walkways, approach roads as well as service corridors, green belt, plantation schemes, path ways, public gardens, water supply, sewage mains, fire hydrants and storm water drains are to be provided.

3.5.2.6.8. COST OF INTERNAL INFRASTRUCTURE

The estimated cost for provision of internal infrastructure within the ITIR is given in Table 11. The cost calculation does not take land acquisition cost into consideration.

Table 11: Internal Infrastructure (Rs. crore)

#	Description	Infrastructure Cost
1	Road works including drain, culvert etc	2,320
2	Sewerage network including STP	1,084
3	Solid Waste management	105
4	Water supply including WTP	6,355
5	Electrical works including Transformer, street lighting	2,111
6	Telecom network	145
7	Rainwater harvesting & landscaping	156
8	Land Development cost including land cost	817
	Total	**13,093**

3.5.3. EXTERNAL INFRASTRUCTURE

3.5.3.1. REVIEW OF CURRENT INFRASTRUCTURE AVAILABLE

3.5.3.1.1. RAJIV GANDHI INTERNATIONAL AIRPORT

The Hyderabad Rajiv Gandhi International Airport is located in Shamshabad, towards the south of Hyderabad. The airport is spread over an area of 22 sq. km. and was developed through public private partnership between GMR, Malaysia Airports, GoAP and Airports Authority of India. The airport was designed as per the ICAO (International Civil Aviation Organization) standards and is capable of handling the largest jumbo aircrafts including the Airbus A-380.

It began commercial operations in March 2008 with an initial capacity of 10 million passengers annually. The total cost of the project is Rs. 2,370 crore and when fully operational in 2018, it will have a capacity to cater to 40 million passengers annually. Besides, it would have a cargo handling capacity of 100,000 tonnes per year.

The airport is located next to the proposed ITIR and would serve as an important nodal point for both domestic as well as international connectivity. The airport has 4-lane access through the Srisailam highway to the ITIR and also from the ORR.

3.5.3.1.2. EXISTING ROAD CONNECTIVITY

National Highway – 7

NH-7 (Varanasi – Kanyakumari) is one of the major national highways of India and is also part of the NHAI's flagship project of North South – East West Corridor under National Highway Development Program II (NHDP II). The highway passes through Hyderabad and provides road connectivity to major neighbouring cities like Nagpur and Bangalore.

Located close to the proposed ITIR, the NH will provide road connectivity to the other major IT city of India i.e. Bangalore and to the centre of the Hyderabad city. It will also provide road connectivity to the Shamshabad Airport and hence the traffic has increased considerably on the highway. To ease the traffic flow, the 12km long P.V. Narasimha Rao Elevated Expressway was constructed to provide a fast approach to the city centre.

Srisailam Highway

The Srisailam highway connects the state capital Hyderabad to the religious town of Srisailam in Kurnool district. Srisailam is an important pilgrimage town for Hindus and the highway is one of the most important connections to the city. The TR&B Department of the government of Andhra Pradesh has submitted a proposal to NHAI for upgradation of this road into a National Highway.

The Srisailam highway passes through the proposed ITIR, and hence will be an important linkage between the ITIR and Hyderabad city. The road will also see a substantial amount of traffic originating because of the International Airport and hence it has been proposed for upgradation into an 8-lane highway.

Nagarjuna Sagar Highway

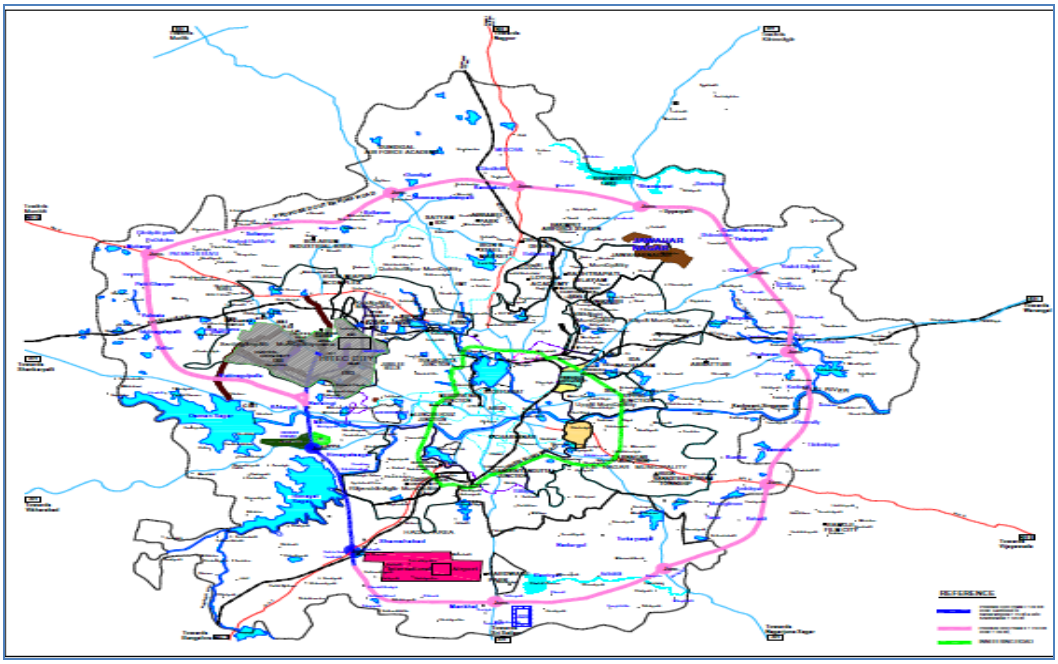
Nagarjuna Sagar is another important Buddhist site with religious and historical significance. It is connected to Hyderabad by the Nagarjuna Sagar highway. Besides its religious importance, the Nagarjuna Sagar dam is an important source of irrigation water for Andhra Pradesh. The highway lies towards the east of proposed ITIR will serve as connectivity between the ITIR and the Hyderabad city.

Outer Ring Road

The Hyderabad Outer Ring Road (ORR) is being developed by Hyderabad Growth Corridor Limited (HGCL) as a *'road-cum-area development'* project. - the Outer Ring Road (ORR) Project encompassing about 158 kms divided in 3 phases at a project cost of Rs.6696 crores connecting NH-9, NH-7 and NH-202 is envisaged. Out of this, the Phase-I ORR Project of 24 kms has already been completed at a project cost of Rs.699 crores and opened to traffic in July 2011. In Phase-II, road network covering a length of 59 kms has been completed and opened to traffic in March 2011 and the balance is to be completed by mid 2012. Phase-III ORR Project to an extent of 71 kms at a cost of Rs.3558 crores is under active implementation.

The area within 1 km on either side of the ORR has been designated as the ORR Growth Corridor – to promote planned development along the ORR. It is defined as a special development zone (SDZ) and classified as a multi-purpose use zone. The classification as multi-purpose zone allows all types of developments – residential, commercial (though limited on roads 18m wide and above), social, institutional and work centres (except industries). Development in the Growth Corridor is allowed except in areas specifically earmarked for roads, open space and recreational, transportation and public utilities. The Growth Corridor also lays emphasis on provision of housing for economically weaker section by providing for reservation of 5% space for "economically weaker sections" housing.

Figure 8: Alignment of the Outer Ring Road

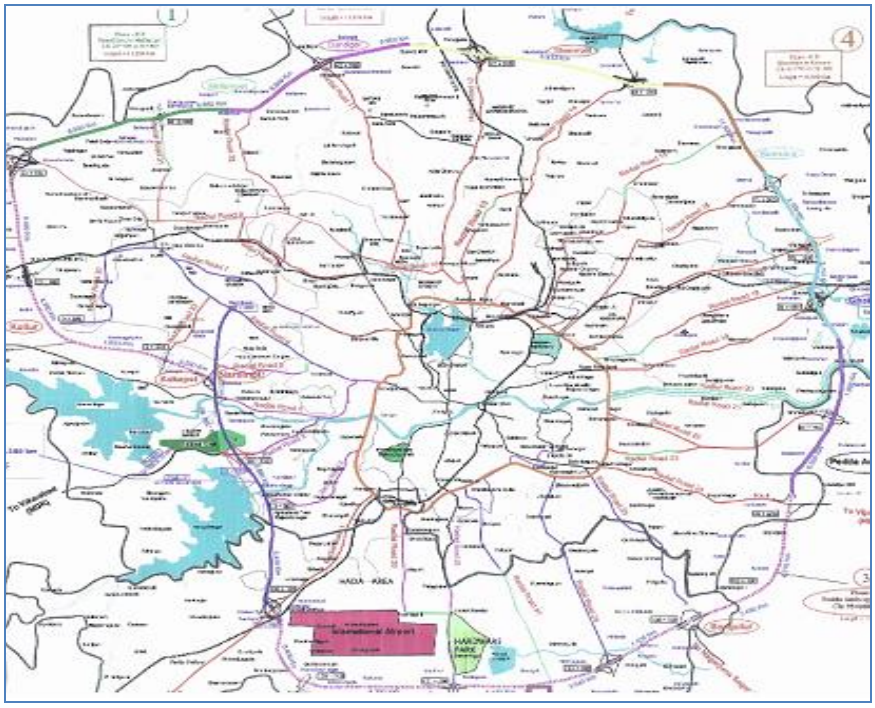


Radial Roads

Various radial roads have been proposed to connect the Inner Ring Road inside the core city with the Outer Ring Road. The TR&B department has proposed a total of 42 radial roads connecting various parts of the city and the ORR.

Out of the 11 radial roads proposed in the APITIR area, Road No.28, (from Chandrayangutta to Srinagar (Tukkuguda)) at a cost if Rs.42.42 crores and Road No.29 (from Lamiguda X Road to Mamidipally) at a cost of Rs.51.54 crores has already been completed Work in five radial roads connecting the ORR Project in the ITIR area to an extent of 38 kms at a project cost of Rs.308 crores has also been completed by June, 2011 and three radial roads covering a road length of 33.48 at a cost of Rs.207.51 crores are under implementation and are expected to be completed by March 2013. The internal roads in ITIR and also being developed in phases.

Figure 9: Alignment of the radial roads connecting the IRR to the ORR



In the above map, the brown lines connecting the IRR and the ORR depict the radial roads planned, which are going to be formed by upgrading the existing stretches and the green lines connecting the IRR and the ORR depict the new stretches of radial roads to be formed.

The Japan Bank for International Cooperation has provided financial assistance to few radial roads.

3.5.3.1.3. EXISTING RAIL CONNECTIVITY

Railway lines to other cities

The nearest major railway station to the proposed ITIR is the Hyderabad railway station. Hyderabad city has 3 major stations namely Secunderabad, Nampally and Kacheguda. The railway line to Bangalore is along the NH-7 and the nearest railway station to the proposed ITIR is at Shamshabad which is a small railway station.

Multi-Modal Transport System

The transportation within the city limits also uses the suburban railway system named the Multi-Modal Transport System (MMTS). It was built on equity contribution by GoAP and South Central Railway (SCR) and is operated by SCR. It started operations in 2003 and basically links HITEC city to the core of the city and various suburbs. It runs 84 services a day and covers 27 stations connecting Secunderabad, Nampally, Falaknuma and Lingampally. There are no dedicated tracks for the MMTS and presently it runs over the existing railway network. The closest MMTS station to the proposed ITIR is the Falaknuma station at a distance of about 12 km.

The MMTS can be fast and convenient means of travel for many people living outside the ITIR. It has been planned to extend the MMTS from Falaknuma to the Airport. The closest railway station to the airport is Umdanagar at a distance of 6 km. New track has to be laid from Umdanagar to Shamshabad to connect the airport to the existing network. The service has to be extended from Falaknuma to Umdanagar and Shamshabad.

3.5.3.2. ASSESSMENT OF EXTERNAL INFRASTRUCTURE REQUIREMENTS

Subsequent to extensive consultations with stakeholders, their technical analysis and assessment, the following external infrastructure projects are proposed under the AP ITIR project in two phases –

Phase 1	Project	Cost in Rs. crore
	Falaknuma – Umdanagar – Rajiv Gandhi International Airport - New Line from Umdanagar to Airpot and Doubling from Falaknuma – Umdanagar + Electrification	85
	• R.R No.6 (from Nanal Nagar junction to HCU Dept) • R.R.No.7 (from Panjagutta to Edulanagulapally) • R.R.No.8 (from Moosapet to BHEL Jn (IRR Jn on NH-9), • R.R.No.30 (from HCU Depot to near to Vattinagulapally)	440
	• 220KV SS at Golconda with 3x100 MVA PTR's and 220 kV DC line – 40 KM approx. • 220KV SS at Raidurg with 3x100 MVA PTR's and 220 kV DC UG cable – 5 KM approx.	417

	• Upstream 400KV SS at Manikonda with 3x315 MVA PTR's and 400 kV Quad Moose line -50 KM approx. • Upstream 400KV SS at Maheswaram 3x315 MVA PTR's and 400 kV Quad Moose line -10 KM approx	
	Total Phase I	**942**
Phase II	Project	**Cost in Rs. crore**
	Srisailam state highway linking Chandrayangutta and Srisailam	195
	Srisailam highway to Sagar highway - 2 lane to 4 lane	172
	• R.R.No.9 (from Panjagutta to Muttangi (NH-9 P-H) • R.R.No.18 (from Survey of India to Mazneerguda Rly Stn), • R.R.No.19 (from Uppal Jn to Anojiguda (NH-202) • R.R.No.26 (from Midhani Jn to Near Pungulur) • R.R.No.27 (DRDL Jn to Nimmiguda)	380
	• 220KV SS at Sardarnagar with 3x100 MVA PTR's and 220 kV DC line – 5 KM approx. • 220KV SS at Nadargul with 3x100 MVA PTR's and 220 kV DC UG cable – 10 KM approx.	174
	Extension of Metro Rail from Falaknuma to Shamshabad International Airport	3,000
	Total Phase II	**3,921**

Radial Roads connecting Outer Ring Road – External assistance required:

RR No	Length	Estimated Cost (Approx)
PHASE-I		
R.R.No.6 - from Nanal Nagar junction to HCU Dept	**15.5 kms - Phase-I**, under JNNURM	Rs.100 crores
R.R.No.7 - from Panjagutta to Edulanagulapally	**21 kms - Phase-I**, under JNNURM	Rs.150 crores
R.R.No.8 - from Moosapet to BHEL Jn (IRR Jn on NH-9)	**11.5** kms **Phase-I**, under JNNURM	Rs.80 crores

R.R.No.30 - from HCU Depot to Vattinagulapally	**14.3** kms **-Phase-I**, under JNNURM	Rs.110 crores
		Rs.440 crores
PHASE-II		
R.R.No.9 (on NH 9) – strengthening of existing road from Panjagutta to Muttangi	The total road length is **29 kms** and it is proposed to be taken up in **Phase-II** of ITIR	Rs. 70 crores
R.R.No.19 ((NH-202) – strengthening of existing road from Uppal Jn to Anojiguda.	The total road length is **13.9 kms** and it is proposed to be taken up in **Phase-II** of ITIR	Rs.40 crores
R.R.Nos.18 - From Survey of India to Mazneerguda Rly Stn	**14.5** kms - **Phase-II. under JNNURM**	Rs.80 crores
R.R.No.26 -From Midhani Jn to Near Pungulur	**15.5 kms - Phase-II. under JNNURM**	Rs.100 crores
R.R.No.27 - From DRDL Jn to Nimmiguda	**15 kms - Phase-II. under JNNURM**	Rs.90 crores
		Rs.380 crores

Provision of Power - External assistance required:

In the original AP ITIR Proposal furnished to DeitY in early 2010, by Govt of AP, as part of creation of external infrastructure in the AP ITIR region, it is proposed to set up 6 – 220 kv substations each at a total cost of Rs.180 crores at Raidurg, Golconda FAB City (Raviryal) and Maheshwaram (Mankhal),Sardar Nagar and Nadurgul locations to cater to the power requirements of IT/EHM clusters in in ITIR region.

Subsequently vide our letter dated 31-07-2012, while indicating that out of the proposed six substations, two substations planned at FAB City (Raviryal) and Maheshwaram (Mankhal) can be funded under the Electronic Manufacturing Cluster Scheme of Deity,GoI. it was indicated that while two substations at Raidurg and Golconda would be taken up in Phase-I and the other two substatuions i.e.,at Nadurgul and Sardar Nagar can be take up in phase II. This was also discussed and in principle agreed to in the meeting of High Powered Committee(HPC) of Secretaries of GoI under the chairmanship of the Cabinet Secretary on 03-08-2012.

Taking into consideration the estimated demand – supply position, from 2013 to 2022, and after critical evaluation, Transmission Corporation of Andhra Pradesh Limited, (AP TRANSCO), there is now a tentative revised & updated requirement of **8** substations in APITIR region as mentioned here under:

(Rupees in Crores)

Sl. No.	Name, Location & Capacity of the substation	Requirement of Site for SS	Tentative Cost Estimate
During PHASE-I implementation period of APITIR			
1	220KV SS at **Golconda** with 3x100 MVA PTR's and 220 kV DC line – 40 KM approx.	10 Acres	62.00
2	220KV SS at **Raidurg** with 3x100 MVA PTR's and 220 kV DC UG cable – 5 KM approx.	10 Acres	85.00
3	Upstream 400KV SS at **Manikonda** with 3x315 MVA PTR's and 400 kV Quad Moose line -50 KM approx.	60 Acres	150.00
4	Upstream 400KV SS at **Maheswaram** 3x315 MVA PTR's and 400 kV Quad Moose line -10 KM approx	60 Acres	120.00
			Rs. 417.00 Cr
During PHASE-II implementation period of APITIR			
1	220KV SS at **Raviral** with 3x100 MVA PTR's and 220 kV DC line – 10 KM approx.	10 Acres	38.00
2	220KV SS at **Sardarnagar** with 3x100 MVA PTR's and 220 kV DC line – 5 KM approx.	10 Acres	34.00
3	220KV SS at **Mankhal** with 3x100 MVA PTR's and 220 kV DC line – 20 KM approx.	10 Acres	46.00
4	220KV SS at **Nadargul** with 3x100 MVA PTR's and 220 kV DC UG cable – 10 KM approx.	10 Acres	140.00
			Rs. 258.00 Cr

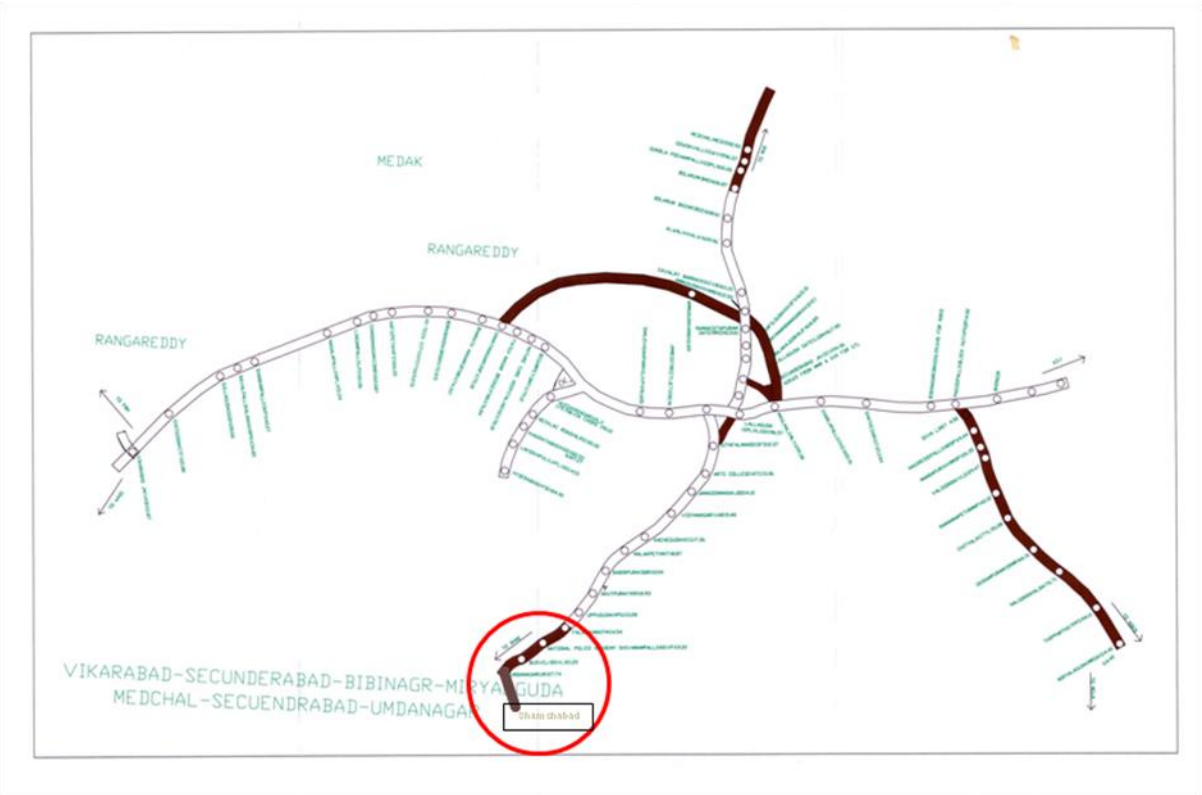
In this regard, it is stated that in the IT/ITES/EHM clusters, wherein the above substations are proposed to be located in the APITIR region, appropriate extent of AP Industrial Infrastructure Corporation(APIIC) land has been earmarked and shall be made available as and when is required by AP TRANSCO and as such **no** new acquisition of land for this purpose is envisaged.

However, as agreed in the HPC meeting and as mentioned above, the two substations planned at FAB City (Raviryal)(Cost Rs.38 crores) and Maheshwaram (Mankhal)(Rs.46 crores) , at a total cost of Rs. 84 crores) can be taken into consideration for sanction and funding under the Electronic Manufacturing Cluster Scheme(EHMC) of Deity,GoI, as per Notification dated: 22-10-2012. As such after removing these two substations from the APITIR proposal, the requested funding requirement for the **six** substations from GOI(Ministry of Power) external infrastructure funding for the proposed APITIR Region comes to Rs.591 crores (Phase I – Rs.417 crores + Phase II - Rs.174 crores).

Extension of MMTS line from Falaknuma to Shamshabad - External assistance required:

MMTS or **Multi-Modal Transport System** is a commuter rail system in Hyderabad. It was built on an equal expenditure basis by GOAP and the South Central Railway and is operated by the latter. It started its operations in August, 2003. The first phase covered a distance of 43 km of Secunderabad - Hyderabad - Lingampally (28 km) and Secunderabad - Falaknuma (15 km) at a cost of Rs 178 crore.

Figure 10: Proposed extension in the MMTS rail line



- It is, presently, running 84 services a day, covering 27 stations, connecting Secunderabad, Nampally, Falaknuma and Lingampally, over the existing railway network.
- The second phase of MMTS is envisaged to cover Falaknuma to Umdanagar - 6 km. There is an existing rail line, which can be used to operationalize the service.
- Considering the projected working population of 14.5 lakh, the proposed non processing area can accommodate housing only for 30-35% of the working staff and the balance may have to commute.

- The project envisages MMTS link from Falaknuma to Shamshabad Airport covering a distance of 12 km. However, new track needs to be formed from Umdanagar to Shamshabad covering a distance of 6 km.

Table 12: Investment requirement to extend MMTS from Umdanagar to Shamshabad

Description	Value	Unit rate including land development costs in Rs. crore	Total in Rs. crore
Alignment length for MMTS - double line from Falaknuma to Umdanagar to Shamshabad in km	20	4.25	85
Total cost			**85**

Extension of metro rail line from Falaknuma to Shamshabad - External assistance required

An elevated metro system is planned in Hyderabad to serve the passenger traffic to various points in and around Hyderabad. The SPV, Hyderabad Metro Rail Limited (HMRL) has finalized the Phase I of the Metro line costing Rs. 12,132 crore. It is estimated to be completed in 5 years from date of grounding the project.

The total length of the Metro is about 71 Km.

- Miyapur to L B Nagar (28.87 km)
- Jubilee Bus Station to Falaknuma (14.78 km)
- Nagole to Shilparamam (27.51 km)

All the routes will be started simultaneously. There is a critical path which forms a loop and has the interchanging stations. It will run along the central median of roads and is expected to carry about 16.38 lakh passengers per day by 2011 and 26.76 lakh passengers per day by 2021.

- There will be one Metro Rail scheduled every third minute
- One Rail will have 6, 66 metre or 200 feet coaches. The train will have a maximum capacity of carrying 2000 people at a time.

The project proposes the extension of the Metro Rail from Falaknuma to Shamshabad which is about 12 to 15 Kms. This elevated metro line will reduce the congestion of traffic to Shamshabad.

Figure 11: Proposed extension in the Metro Rail line

Investment requirement to extend Metro Rail from Falaknuma to Shamshabad

Description	Value	Unit rate including land development costs in Rs. Crore	Total in Rs. crore
Alignment length for Metro Rail line – from Falaknuma to Shamshabad in km	12	250	3,000
Total cost			**3,000**

a) The proposal was got prepared by DMRC for connectivity to Shamshabad International Airport and the feasibility is dependent on ridership.
b) The route proposed was from Falaknuma via Laxmiguda to Shamshabad International Airport for a length of about 12 km and it is a elevated Metro Rail.
c) Stabling facility at terminal point and a part of underground Metro Rail at the Airport is to be considered.
d) The approximate cost for 12 km elevated Metro Rail, part underground Metro Rail and stabling facility at present day estimates works out to a total project cost of Rs.3000 cr. (approximately Rs.250 cr. per km is taken as bench mark).
e) The implementation phase will be strictly not in accordance with Phase-I of APTIR as this extension was not considered in Phase-I implementation of Metro Rail project implementation milestones. As such, after due submission of the detailed proposal by Metro Rail, and approval of GoAP, the extension proposal for connectivity to International Airport will be formulated for further approvals from GoI and for requisite financial assistance.

Due to the above, it is to be noted now that there is change or additionality in the cost of provision of external infrastructure requirement requested from GoI as mentioned here under

(in Rs. Crores)

Item/Project	Cost proposed in the Original Proposal of AP ITIR in March 2010	Estimated Cost now proposed in the Updated APITIR Project Proposal-DPR	Reason/Justification
Development of six 220 KV substations in ITIR	180	Phase – I: 417 Phase – II: 174	Cost escalation is due to increase in cost of provision of external infrastructure in respect of two additional power project requirements .i.e., (i)Upstream 400KV SS at Manikonda with 3x315 MVA PTR's and 400 kV Quad Moose line -50 KM approx and (ii) Upstream 400KV SS at Maheswaram 3x315 MVA PTR's and 400 kV Quad Moose line -10 KM approx which will have to be taken up in Phase – I of APITIR project implementation
Extension of MMTS from Falaknuma-Umdanagar – Rajiv Gandhi International Airport - New Line from Umdanagar to Airport and doubling from Falaknuma-Umdanagar + Electrification	288	85	To be taken up in Phase – I
Alignment length to Metro Rail line – from Falaknama to Shamshabad International Aiport	-	Phase-II 3000	a) The proposal was got prepared by DMRC for connectivity to Shamshabad International Airport and the feasibility is dependent on ridership. b) The route proposed was from Falaknuma via Laxmiguda to Shamshabad International Airport for a length of about 12 km and it is a elevated Metro Rail.

			c) Stabling facility at terminal point and a part of underground Metro Rail at the Airport is to be considered. d) The approximate cost for 12 km elevated Metro Rail, part underground Metro Rail and stabling facility at present day estimates works out to a total project cost of Rs.3000 cr. (approximately Rs.250 cr. Per km is taken as bench mark). e) Since the implementation phase will be strictly not in accordance with Phase-I construction this could be considered in Phase _II of APITIR implementation This was not envisaged in original proposal. However keeping in view the proposed traffic requirements, request for provisional of appropriate funds due to enhanced cost escalation. As such, this can be taken up in Phase II of implementation of APITIR and only in principle approval solicited now.
Srisailam highway to Sagar highway – 2 lane to 4 lane	172	172	To be taken up in Phase II of APITIR
Srisailam highway connecting Chandrayangutta to Mohabatnagar - 4 lane to 8 lane	195	195	-do-
NH-7 from Bangalore to Srisailam highway -2 lane to 4 lane	96	--	NH-7 i.e. from Bangalore Highway to Srisailam Highway touching the ITIR region near Shamshabad area (22 kms length – widening of 2 lane to 4 lane

			is already being taken up as a priority road through internal funds
Upgradation of 11 Radial Roads Phase-I: R.R No.6 (from Nanal Nagar junction to HCU Dept) R.R.No.7 (from Panjagutta to Edulanagulapally) R.R.No.8 (from Moosapet to BHEL Jn (IRR Jn on NH-9), R.R.No.30 (from HCU Depot to near to Vattinagulapally) Phase-II: R.R.No.9 (from Panjagutta to Muttangi (NH-9 P-H) R.R.No.18 (from Survey of India to Mazneerguda Rly Stn), R.R.No.19 (from Uppal Jn to Anojiguda (NH-202) R.R.No.27 (DRDL Jn to Nimmiguda	1,258	Phase – I : 440 Phase-II - 380	Reduction in the cost estimates are due to the reason that out of the 11 Radial Roads proposed in the Original Proposal,2 radial roads, i.e., Road No.28, (from Chandrayangutta to Srinagar (Tukkuguda) at a cost if Rs.42.42 crores and Road No.29 (from Laxmiguda X Road to Mamidipally) at a cost of Rs.51.54 crores has already been completed Work in five radial roads connecting the ORR Project in the ITIR area to an extent of 38 kms at a project cost of Rs.308 crores has also been completed and three radial roads covering a road length of 33.48 at a cost of Rs.207.51 crores are under implementation and are expected to be completed by March 2013.
Total	**2189**	**4,863**	**Phase I -942 cr +** **Phase II – 3921 cr**

3.6. COMPLIANCE TO ENVIRONMENTAL REGULATIONS

Preliminary Environmental Risk assessment has been summarized in the Project Proposal which includes potential environmental risks, a brief analysis of the nature of impacts and associated management measures, and the identified risk category. Some of the measures to be taken are listed below –

As per the provisions of EIA-2006 Notification and its amendments thereof, issued by Ministry of Environment & Forests (MoE&F), GOI, the Environmental Clearance (EC) is required for all the Construction projects, if the total built-up area of the project is ≥20000 sq.mtrs.

- If the total built-up area of the project is ≥20,000 sq.mtrs and <1,50,000 sq.mtrs., Environment Management Plan (EMP) has to be prepared for obtaing EC.
- If the total built-up area of the project is ≥1,50,000 sq.mtrs. of built-up area, Environment Impact Assessment (EIA) report has to be prepared for obtaing EC.
- All the Construction projects are exempted from the process of public hearing.
- The proponent is required to provide STP for treatment of sewage and plan for recycle and reuse the treated waste water.
- The proponent is required to develop greenbelt / trees, as per APWALTA Act.
- **To obtain EC,** the proponent is required to submit one set of duly filled application i.e., Form-1, Form-1A, Standard Template, EMP / EIA report (as applicable) to the SEIAA, AP. The procedure to obtain EC is available in the website of APPCB viz., www.appcb.ap.nic.in and the proforma of above documents may also be downloaded from the website.

After obtaining EC, the proponent is required to obtain Consent for Establishment (**CFE**) from APPCB before starting any construction activity at site.

After obtaining CFE and after finishing construction of the project, the proponent is required to obtain Consent for Operation (**CFO**) from APPCB.

APIIC as the AP ITIR Development Authority, shall scrupulously follow the above guidelines in this regard during the implementation phases of AP ITIR.

4. PROJECT STRUCTURE AND INSTITUTIONAL STRUCTURE

4.1. NOTIFICATION OF ITIR

As per the ITIR gazette notification of the Government of India ITIR, Government of Andhra Pradesh needs to **notify the site as ITIR under a relevant existing act or, if required, formulate a new act.**

Government of Andhra Pradesh has analysed various options available and proposes to notify the ITIR under the existing act – **Andhra Pradesh Urban Areas (Development) Act, 1975 (APUDA).**

The **Andhra Pradesh Urban Areas (Development) Act, 1975**, provides for the development of urban areas in Andhra Pradesh. A separate authority, Hyderabad ITIR Development Authority, will be established under the **provisions of Section 3A**, which allows the State Government to constitute a Special Area Development Authority for any area in the State, as a special case, where such an area is classified as an urban area or otherwise, in the interest of specific development objectives that may be conducive to the overall planned development of the State.

- This Section 3A was added in the **Andhra Pradesh Urban Areas (Development) (Amendment) Act, 2001**. The purpose for allowing Special Urban Development Authorities was to promote the achievement of special objectives or orderly growth and environmental up-gradation in priority areas. It was also envisioned that such Special Authorities would be useful in carving out selected areas which needed special planning controls and a high level of infrastructural and managerial input. Finally, it was hoped that the creation of such enclaves and their successful operation would catch the imagination of people and eventually help in extending similar discipline, efficiency and managerial excellence to entire cities.

- Section 13 of the Andhra Pradesh Urban Areas (Development) Act, 1975, establishes the procedures to be adhered to once an area is notified by the State Government to be a 'development area'. Section 13(1) states that *"As soon as may be after the commencement of this Act, where Government consider it necessary to do so for purposes of proper development of any urban area or group of urban areas in this State they may, by notification, declare such urban area or group of urban areas to be a development area for the purposes of this Act"*.

- Section 5 of the Act provides the object and powers of an Authority, which states that *"to promote and secure the development area concerned according to plan and for that purpose, the Authority shall have the power to acquire, by way of purchase or otherwise, hold, manage, plan, develop and mortgage or otherwise dispose of land and other property, to carry out by or on its behalf building, engineering, mining and other operations, to execute works in connection with supply of water and electricity, disposal of sewerage and control of pollution, other services and amenities and generally do anything necessary or expedient for purposes incidental thereof."*

4.2. LAND ACQUISITION

A separate AP ITIR Development Authority, with APIIC and other stakeholders, will be notified under Section 3 (A) of the **Andhra Pradesh Urban Areas (Development) Act, 1975.** This Authority will be authorised to acquire and dispose of land according to Chapter V of the Act. The Andhra Pradesh government proposes to acquire land only for the purpose of development of internal and external infrastructure like roads, and common utility areas. No new acquisition is planned for either processing area or non-processing area projects specifically for ITIR.

- Section 18 (1) provides that, *"If, in the opinion of the Government; any land is required for the purpose of development or for any other purpose under this Act, the Government may acquire such land under the provisions of the Land Acquisition Act, 1894"*.
- Section 18 (2) further elucidates that when land is acquired and taken possession of by the Government, the land may be transferred to the Authority, for the purpose for which the land had been acquired on payment by the Authority of the compensation awarded under the **Land Acquisition Act, 1894** and of the charges incurred by the Government in connection with the acquisition.
- Should the Authority choose to acquire land in a manner other than which is prescribed under the Land Acquisition Act, 1894, the Authority, under Section 18-A, needs to "obtain the previous approval of the District Collector, herefore. While according to his approval, the District Collector shall determine the value at which the land is to be acquired and every such acquisition shall be subject to the previous sanction of the Government as may be prescribed".

For the processing areas of ITIR, the Andhra Pradesh Industrial Infrastructure Corporation (APIIC) is already in possession and have made lands available to an extent of more than 4169 acres in the three IT clusters in ITIR (i.e. 919 acres in Cyberabad cluster, 2600 acres Near International Airport cluster, 650 acres in Uppal & Pocharam cluster). Further, in the ITIR area, two Governments promoted IT SEZs to an extent of 159 acres, 7 IT campus SEZs in 781 acres, 12 IT SEZs by private infrastructure developers on Government allotted lands in 826 acres and 13 IT SEZs developed by private infrastructure developers on their own lands in an extent of 1016 acres are being developed. As such, the requisite land for delineated area of the proposed ITIR is already with the AP Industrial Infrastructure Corporation (APIIC) and if any land is further required to make the project viable, Government shall make the same available, on need based requirement, for the purpose of development of ITIR as per the existing provisions of land acquisition.

4.3. INSTITUTIONAL STRUCTURE

The following institutional structure for governing AP ITIR is in place:

- (a) Nominated Information Technology & Communications Department as Nodal Agency for the Govt of AP for creation, monitoring and management of their proposed ITIR.
- (b)Constituted a Management Board for the purpose of creation of ITIR comprising of Prl Secy to Govt, Municipal Admn & Urban Development (MA&UD), Revenue, Commissioner, Greater Hyderabad Municipal Corporation (GHMC), Commissioner, Hyderabad Metropolitan Development Authority (HMDA), Chairman & Managing Director, AP Industrial Infrastructure Corporation (APIIC), AP Transmission

Corporation (APTRANSCO), AP Central Power Distribution Corporation (APCPDCL) and co-opted members from other agencies/Depts as and when required.

- I Constituted State Level High Power Committee for monitoring the progress of implementation of ITIR comprising, Chief Secretary to Govt, Special Chief Secretary, Energy, Forests, Science & Technology Dept, Principal Secretaries of Revenue, Transport, Roads & Buildings, MA&UD and co-opted members from other agencies/Depts as and when required.

The proposed structure of the State Level Empowered Committee and the ITIR Management Board is described below.

4.4. AP ITIR DEVELOPMENT AUTHORITY

Government of Andhra Pradesh proposes to set up a AP ITIR DEVELOPMENT AUTHORITY **with APIIC and other stakeholders, to be notified under the APUDA Act, soon after the notification of AP ITIR by GoI. The Management Board will derive its** administrative, regulatory and development powers from the APUDA Act.

The Management Board shall have the following functions:

Planning, enforcement and monitoring:

- Preparation and enforcement of the detailed Master Plan for the ITIR
- Granting approvals for, and facilitating clearances to units within ITIR

Infrastructure development

- Providing the necessary infrastructure within ITIR, either directly or through Developer(s).
- Selection of Developer/Co-developers and entering into concession agreements with them for the development and maintenance of infrastructure internal to ITIR
- Exercise of authority to delegate, enter into or create SPVs for specialized services

Operation and management

- Co-ordination with local bodies
- Regulation of levy of user or service charges or fees or rent for the use of infrastructure / properties in ITIR
- Review of the functioning and performance of ITIR

Investment promotion:

- Promotion of investment, both foreign and domestic, into ITIR
- Promotion of production within, and exports from, ITIR

Other functions:

- Any other functions as may be prescribed by the State Government

Based on the proposed functions, the government of Andhra Pradesh proposes the following structure of the Management Board. As also stated in the ITIR gazette notification government of Andhra Pradesh, a role for key IT sector stakeholders in the ITIR is also envisaged. The key stakeholders and the roles proposed to them in the Management Board of the ITIR are as shown in the following table:

Exhibit: Key stakeholders in the Management Board of ITIR and their proposed roles

#	Stakeholder	Representative	Proposed role in the Management Board
1.	Department of IT&C, Government of Andhra Pradesh	Secretary / Principal Secretary, department of IT&C, government of Andhra Pradesh	Ensuring faster development and implementation of the ITIR master plan. Investment promotion Coordination with the key stakeholders in the industry.
2.	Andhra Pradesh Industrial Infrastructure Corporation Ltd (APIIC)	Managing Director, APIIC	Development of the IT/ITES/EHM units. Appointment of developers / co-developers for the processing areas.
3.	Hyderabad Metropolitan Development Authority	Vice-Chairman, HMDA	Review and modifications to the Master Plan of the ITIR. Incorporation of new features considering the requirements of the IT / ITES / EHM industry into the ITIR Master Plan.
4.	Finance Department	Principal Secretary, Finance	Development and implementation of PPP projects in the ITIR.
5.	Revenue Department, Government of Andhra Pradesh	Collector Ranga Reddy district	Facilitating land acquisition
6.	Andhra Pradesh Central Power Distribution Company Limited	Chairman and Managing Director, APCPDCL	Implementation of power distribution network
7.	Transmission Corporation of Andhra Pradesh	Chairman and Managing Director, APTransco	Implementation of transmission projects
8.	Hyderabad Metropolitan Water Supply And Sewerage Board	Managing Director, HMWS & SB	Overseeing and coordination with finance department to implement water supply sewerage and drainage infrastructure through PPP in ITIR
9.	Representatives of Industry associations	• NASSCOM Hyderabad • IT & ITES Industries Association of Andhra Pradesh (ItsAP) (formerly HYSEA) • Electronic Industries Association of Andhra Pradesh	Representatives of IT/ITES/EHM industry

#	Stakeholder	Representative	Proposed role in the Management Board
		(ELIAP)	
10.	Nominated members	Representatives from the legal entities awarded the developer or co-developer status by the Board	Developers of the housing and infrastructure projects

The infrastructure development in the ITIR will be done through an SPV – with APIIC and HMDA as equity holders. The SPV will undertake the following responsibilities –

- Conceptualise projects, including determining project feasibility and project structuring
- Undertake preparatory work for all projects including land acquisition, technical assessment, preliminary clearances from statutory bodies etc.
- Bundling / combining of projects
- Financial structuring of projects
- Implement projects through appropriate modes including PPP in select projects
- Arrange financing – both debt and equity

4.5. KEY STRATEGIES FOR ACHIEVING THE GOALS OF ITIR

The Management Board of the ITIR will develop a detailed Master Plan and detail out the development strategies for implementation of the ITIR. The broad strategic framework of the Management Board for each function is described in the table below:

#	Function	Broad strategic framework
1.	Planning, enforcement and monitoring	Promoting green buildings. Incentives in the form of relaxations in zoning and building regulations will be provided to buildings that can demonstrate that they have taken measures to be energy efficient, or to reduce the carbon footprints during and after construction (e.g. recycling of waste, water harvesting etc.)
2.	Infrastructure development, operation and management	Efficiencies in creation and management of infrastructure through PPP. Identify and conceptualise projects for internal infrastructure (solid waste management, flyovers/roads, water supply), undertake detailed feasibility studies, structure the projects, analyse possibility of PPP and implement the projects through suitable routes
3.	Investment promotion	IT and EHM companies in Andhra Pradesh have been provided incentives under the current ICT policy 2010-2015 and Electronic Hardware Policy 2012-2017

5. PREPAREDNESS FOR THE PROJECT

5.1. VARIOUS GOVERNMENT INITIATIVES TO PROMOTE IT/ITES AND EHM SECTORS

5.1.1. INFORMATION COMMUNICATION & TECHNOLOGY (ICT) POLICY 2010-2015

Information Technology has been identified as one of the thrust sectors for Andhra Pradesh with specific incentives being offered by the **Information & Communications Technology (ICT) Policy, 2010-2015**. Through this ICT Policy, Andhra Pradesh aims to attain leadership in the information economy by developing local enterprise and attracting best-in-class ICT companies and institutions, focussing on development of human resources and infrastructure.

> An organisation has been established to attract investments in the State - **APInvest** - with the objectives of aggressively identifying potential investors, building a strong value proposition and facilitating availability of infrastructure / manpower and to develop investment-friendly sector strategies. AP Invest is an integral part of GoAPs targeted approach. APInvest is the single point of contact that facilitates investments in Andhra Pradesh and functions along the lines of a corporate under the Chairmanship of the Chief Minister.

Under the ICT policy some key areas have been identified as being critical for providing the right ambience for attracting investments into the State and have been provided incentives. The key areas are:

- Start ups
- Small and Medium Enterprises (SMEs)
- IT Product/R&D companies
- Animation, Gaming and Digital Entertainment
- Engineering Services
- Electronic Hardware (non-hazardous)
- Promotion of IT Incubation Facilities at Engineering Colleges/ other educational institutions
- SC/ST entrepreneurs
- WOMEN entrepreneurs
- IT SEZs/IT Parks/IT Campuses/**ITIR**

Benefits/Incentives applicable to IT SEZs/IT Parks/IT Campuses/ITIR –

(A) **Exemption from Zoning Regulations:** IT industry, i.e., IT/ITES Units/Companies and IT Parks/IT Campuses notified by the IT&C Department, are exempted from the Zoning Regulations, subject to ensuring environmental safeguards, and the payment of conversion charges under the provisions of AP Urban Area Development Act 1975 or AP Town Planning Act 1920 as applicable for the location of IT/ITES Units/Companies as stipulated under the Revised Building Rules of Municipal Administration & Urban Development (M) Department and amendments thereon from time to time, basing on the following terms and conditions:

(a) The conversion / exemption from land use zoning regulations for setting up of IT/ITES Units/Companies/IT Parks/IT Campuses shall be made applicable only in the following notified land uses in the Master Plan /Zonal Development Plan.

i) Residential use zone.
ii) Commercial use zone.
iii) Institutional use zone/Public & Semi-public Use Zone.

iv) Industrial use zone.
v) Conservation / Agricultural use zone.

(b) The conversion / exemption from land use Zoning Regulations as above shall be applicable to the IT/ITES Units/IT Parks/IT Campuses which are notified by the Information Technology & Communications Department.

I IT/ITES Units/Companies/IT Parks so notified by Information Technology and Communications Department are exempt from payment of conversion charges.

(B) **No limitation on height of buildings and FAR/FSI**, subject to payment of City Level Infrastructure

Impact Fee and would be governed by, Revised Building Rules, location norms and clearances from Fire Services, Airport Authority and shall be in conformity with National Building Code, regulations, terms & conditions as per stipulations of Municipal Administration & Urban Development (M) Department and amendments thereon.

I Consequent on adoption of Repeal Act 1999, there is no necessity to file any declarations or to obtain permission under Section 20 (1) of Urban Land (Ceiling & Regulation) Act, 1976, to hold the excess land for future land transactions and is regulated as per the instructions contained in Revenue Dept, Cir.Memo.No.17377/UC-I(1)/2008-1, dt:24.04.2008 and amendments thereon from time to time.

(D) Approval through Special Unit in Urban Development Authority/Greater Hyderabad Municipal Corporation within 15 days for draft approval and 1 week for Final approval.

(E) All statutory clearances to IT Parks/IT Campuses constructed by IT Infrastructure Companies/builders/developers and IT/ITES Industry/Companies/Units for own use on lands allotted by APIIC in their Industrial Local Area Authority, would be given by APIIC except the clearances from Fire Services, Airport Authority etc.

5.1.2. ELECTRONIC HARDWARE POLICY 2012-2017

Andhra Pradesh Electronic Hardware Policy of GoAP intends to will drive growth in the state's electronics ecosystem.

Key initiatives:

- Convert existing clusters such as FAB City and Aeronautical SEZ into Centers of excellence, giving fresh impetus on Infrastructure
- Create 4 Hubs covering NEWS (North, East, West, and South) in and around ORR, Hyderabad consisting of 300 Acres of Multi product Electronic SEZ's and another 200 acres for the supporting Electronic Industry.
- Create a joint Government-Industry committee to market India and attract investment in India.
- Incentivizing investments in Andhra Pradesh by creating a model where the subsidy or rebate given to a Electronic Hardware industry is determined on the basis of the value addition and volumes.
- R&D will be the key focus areas for Andhra Pradesh. Intellectual Property (IP) creation by local units will be given prime importance.
- Common facilitation Centre/Incubation Centre/Cluster should be established with full pledged testing facilities to meet the global quality parameters such as EMC, Safety Testing, RF, Microwave Testing, Environmental Testing, and Endurance Testing & Other Functional Testing. This should be closer to the Electronic Hardware Industries Cluster.

- Creating Hardware Manufacturing Clusters in both SEZ and non-SEZ(domestic) areas in tune with the Policy Guidelines of Electronic Hardware Promotion program of Ministry of Communications & information Technology, Govt of India
- Create a fund under the management of a working committee comprising representatives of industry bodies and government, with an equal stake to promote design, manufacturing, assembling, and Innovation and packaging business.
- Organizing exhibitions, conferences and taking Electronic Hardware companies located in the state as part of trade delegations to domestic, national and international exhibitions.
- Single Window System for necessary permissions and clearances. Concerned Industry association inputs/suggestions/approval/ recommendation may be obtained for necessary clearances.
- Recognizing the importance of involving Industry Stake Holders, President, ELIAP has been included as a member of Consultative Committee on IT Industry (CCITI) which is a industry – Government body for administration of incentives and providing comfort and facilitation for Electronics Hardware Sector.

(I) Incentives offered to Electronic Hardware Industries under Electronic Hardware Policy 2012-17

(A) Electronic Hardware Industry units are regulated and governed as per the provision of the Air Act, Water Act, and E(P) Act 1986.

(B) Electronic Hardware Industry companies are exempt from the purview of power cuts on similar lines of IT/ITES Industry.

(C) Electronic Hardware Industry is exempt from inspections/certifications under the following Acts and the Rules framed there under and as administered by the Labour Department, barring inspections arising out of specific complaints. The Electronic Industry (units) are permitted to file self-certificates, in the prescribed formats.

- The Factories Act 1948.
- The Maternity Benefit Act 1961.
- The AP Shops & Establishments Act 1988 (Not Applicable).
- The Contract Labour (Regulation & Abolition) Act 1970.
- The Payment of Wages Act 1936.
- The Minimum Wages Act 1948.
- The Employment Exchanges (Compulsory Notification of Vacancies) Act 1959

(D) General permission on similar lines of IT/ITES Industry for three shift operations with women working in the night for Electronic Hardware Industry.

(E) Electronic Hardware Industry be declared essential service under AP Essential Services Maintenance Act.

(II) Common Incentives for all Electronic Hardware companies:

(A) 100% reimbursement of stamp duty, transfer duty and Registration fee paid on sale/lease deeds/ mortgages& Hypothecations on the first transaction.

(B) 50% reimbursement of stamp duty, transfer duty and Registration fee paid on sale/lease deeds /mortgages& Hypothecations on the 2nd transaction.

(C) Admissibility of Industrial Power category tariff.

(D) 50% to Micro, 40% to small & 25% to medium & 10% to large scale industry limited to Rs.30 lakh Power Subsidy on power bills for a period of 5 years from the date of commencement of commercial operations.

(E) Reimbursement/Grant of 50% exhibition subsidy for participating in the national/international exhibitions limited to 9 sq m space.

(F) 20% Investment subsidy limited to Rs. 20 lakh for micro & small industries and additional 5% incentive subsidy for women, SC, ST Entrepreneurs.

(G) 3% interest rebate limited to Rs. 5 lakh per year for 5 years.

(H) 10% subsidy on new capital equipment for technology upgradation limited to Rs. 25 lakh as one time availment by the eligible company.

(I) 50% subsidy on the expenses incurred for quality certification limited to Rs. 4 lakh (Conformity European(CE),China, Compulsory Certificate(CCC),UL Certification, ISO, CMM Certification, SA, RU etc.,

(J) 25% subsidy on cleaner/ green production measures limited to Rs.10 lakh

(K) 100% Tax reimbursement of VAT / CST, for the new units started after the date of issue of this Policy, for a period of 5 years from the date of commencement of production for products made in AP and sold in AP.

(L) 25% rebate in land cost limited to 10.00 lakhs in Industrial estates, industrial parks, SEZ's, hubs, parks & clusters.

(M) 50% reimbursement/ grant of cost involved in skill up gradation & training the local manpower limited to Rs 2,000/- per person.

(III) Specific Incentives to Focus Areas in Electronic Hardware sector:

- Allocation/ Reservation of 20% of Order value to electronic hardware SMEs in State Govt promoted Projects.
- **Sector Specific Incentives**: The different segments in Electronic Hardware sector needs to be promoted to enable them to compete with the Global markets as well as domestic consumption. Keeping in this view, the following specific incentives are offered to focus areas in Electronic Hardware Sector:-

Startups/ Micro:	a) Recruitment Assistance of Rs.2.5 Lakhs for recruitment made up to 50 Employees within a period of two years. b) 10% subsidy on new capital equipment for technology upgradation limited to Rs.25 lakhs as one time availment by the eligible company. c) Providing 25% subsidy on lease rentals up to Rs.5 Lakhs per annum maximum up to a period of three years, for the plug-and-play built up office space from 1000 sft to 10,000 sft, Industry Shed ranging from 1000 sft to 20,000 sft, leased from Government or Private owned IT Park/IT SEZ/ Industrial Park
Small & Medium:	a) Rs.10 lakh as recruitment assistance for employing minimum 200 employees within 2 years of commencement of commercial operations b) 10% subsidy on new capital equipment for technology upgradation limited to Rs.25 lakh as one time availment by the eligible company. c) 25 % subsidy on lease rentals up to Rs.5 lakh per annum maximum up to a period of three years, for the plug-and-play built up office space from 1000 sft to 10,000 sft, Industry Shed ranging from 1000 sft to 20,000 sft, leased from Government or Private owned IT Park/IT SEZ/ Industrial Park.
R&D	Rs.15 lakh as recruitment assistance for employing minimum 150 employees within two years of commencement of commercial operations.
SC/ST Entrepreneurs & Women entrepreneurs :	a) Rs.10 lakh as recruitment assistance, basing on the level of employment generated, for employing minimum 100 employees within three years of commencement of commercial operations i.e., Rs.5 lakh for first 50 employment generated in the first year, Rs.2.5 lakh to the next 25 employees in the 2nd year, and Rs.2.5 lakh for the remaining 25 employees employed at the end of third year. b) Providing 25% subsidy on lease rentals up to Rs.5 lakh per annum maximum up to a period of three years, for the plug-and-play built up office space from 1000 sft to 10,000 sft, Industry Shed ranging from 1000 sft to 20,000 sft, leased from Government or Private owned IT Park/IT SEZ/ Industrial Park. c) 5% of the project cost will be provided as seed capital assistance to MSME units started by SC/ST entrepreneurs limited to Rs.5.00 lakh.

	d) An additional subsidy of 5% limited to Rs.5 lakh for SC/ST entrepreneurs e) 10% subsidy on new capital equipment for technology upgradation limited to Rs.25 lakh as one time availment by the eligible company.
Existing Units (other than large scale industries)	a) 50% subsidy on the expenses incurred for quality certification limited to Rs.2 lakh. b) 50% subsidy on the expenses incurred for patent registration limited to Rs.5 lakh.

Encouragement to MSMEs to set up their operations in APITR

As can be seen from above, both the ICT Policy 2010-2015 and Electronic Hardware Manufacturing Policy 2012-2016 of Govt of AP provides requisite impetus to the Micro, Small & Medium Enterprises in IT, ITES and EHM verticals to setup, grow and provides level playing filed to sustain their operations, on par with their medium and major counterparts in the AP ITIR area.

Further vide GO Rt No:223; dated 31-08-2010, Government of Andhra Pradesh, extends support by allowing preferential treatment to participate and execute e-Governance projects.

Other Initiatives

- Single window Mechanism: Govt of AP put in place single window mechanism for expeditious clearance of proposals of ICT industry vide GOMS No:2, dated 13-03-2010

(ii) ICT is an Essential Service:ICT declared as an essential service under AP Essential Services Maintenance Act vide GO MS No:5, dated 20-04-2010

(iii) Exemption from Labour Laws and protection for women working in ICT Sector: Government of Andhra Pradesh accorded exemption from certain Labour Laws and provides due protection for women working in ICT Industry through GO Ms.No:62, dated:30-05-2012

(iv) Committee for attracting IT Investments into the State of Andhra Pradesh: In order to bring in synergy for sustained growth of IT sector and to achieve new heights with regard to promotion o IT in the State of Andhra Pradesh, a Committee with senior officers of the Government vide GO Ms. No:71, dated:05-05-2012

5.2. VARIOUS INFRASTRUCTURE PROJECTS UNDERTAKEN TO SUPPORT IT/ITES AND EHM SECTORS

Since the submission of the Project Proposal to Government of India in March 2010, the following are the key initiatives/developments /progress creation of infrastructure projects by the State Government:

- Provision is land for the processing areas of ITIR: the Andhra Pradesh Industrial Infrastructure Corporation (APIIC) is already in possession and have made lands available to an extent of more than 4169 acres in the three IT clusters in ITIR (i.e. 919 acres in Cyberabad cluster, 2600 acres Near International Airport cluster, 650 acres in Uppal & Pocharam cluster). Further, in the ITIR area, two Governments promoted IT SEZs to an extent of 159 acres, 7 IT campus SEZs in 781 acres, 12 IT SEZs by private infrastructure developers on Government allotted lands in 826 acres and 13 IT SEZs developed by private infrastructure developers on their own lands in an extent of 1016

acres are being developed. As such, the requisite land for delineated area of the proposed ITIR is already with the AP Industrial Infrastructure Corporation (APIIC) and if any land is further required to make the project viable, Government shall make the same available for the purpose of development of ITIR as per the existing provisions of land acquisition.

- Creation of International Airport: The Government of Andhra Pradesh on its own through PPP mode has developed the state-of-the-art world class International Airport abutting ITIR region in a sprawling area of 5000 acres.

- Provision of transportation infrastructure in ITIR area - the Outer Ring Road (ORR) Project encompassing about 158 kms divided in 3 phases at a project cost of Rs.6696 crores connecting NH-9, NH-7 and NH-202 is envisaged. Out of this, the Phase-I ORR Project of 24 kms has already been completed at a project cost of Rs.699 crores and opened to traffic in July 2011. In Phase-II, road network covering a length of 59 kms has been completed and opened to traffic in March 2011 and the balance is to be completed by mid 2012. Phase-III ORR Project to an extent of 71 kms at a cost of Rs.3558 crores is also under active implementation.

- Out of the 11 radial roads, Road No.28, (from Chandrayangutta to Srinagar (Tukkuguda)) at a cost if Rs.42.42 crores and Road No.29 (from Lamiguda X Road to Mamidipally) at a cost of Rs.51.54 crores has already been completed Work in five radial roads connecting the ORR Project in the ITIR area to an extent of 38 kms at a project cost of Rs.308 crores has also been completed by June, 2011 and three radial roads covering a road length of 33.48 at a cost of Rs.207.51 crores are under implementation and are expected to be completed by March 2013. The internal roads in ITIR and also being developed in phases.

- NH-7 i.e. from Bangalore Highway to Srisailam Highway touching the ITIR region near Shamshabad area (22 kms length – widening of 2 lane to 4 lane is already being taken up as a priority road through internal funds
- Provision of water in ITIR area: Drinking Water pipe line from Krishna Water project has been laid out and rest of the prayed are also under contemplation.

- Enhancement of Power/Augmentation of Substations/transformers in the ITIR area, :seven substation's capacity has been augmented to an extent of 481 MVA at a cost of Rs.118 crores during the next year and in the next two years i.e. by the end of 2013, another 3 substations capacity is being augmented and 7 new substations are planned at a cost of Rs.3026 crores in the ITIR area.

- GHMC has already taken up

- Widening of the road from Chandrayangutta to Barkas upto GHMC limits to 100 feet for which more than 90% of the properties have already been acquired. The road work is also being taken up at a cost of Rs.4.3 Crores to make it 6 lane.
- Various Link Roads / Road Widening for improving the trunk infrastructure for connecting the IT / ITES industries. The following are the link roads / road widening/Flyovers proposed.
    - Flyover at Tolichowki at a cost of Rs.50.00 Crores.
    - 100 feet wide link road from Hi-tech City Railway Station to Borabonda at a cost of Rs.12.00 Crores.
    - Link Road from Dargah Junction to O.U.Colony in Serilingampally (South) at a cost of Rs.12.00 Crores.
    - Link Road from Moosapet Cheruvu connecting to Railway Line via IDL.
    - Link Road from Ambedhkar University to Kavuri Hills, Madhapur to Durgam Cheruvu Road via Vasanth Vihar, Madhaur at a cost of Rs.8.00 Crores.

- Construction of 80 feet wide BT Road from Amaravathi Hotel (Madhapur Main Road) to Moosapet at a cost of Rs.25.00 Crores.
- Link Road connecting Madhapur Main Road to Raheja IT Park at a cost of Rs.8.00 Crores.
- 8 Widening of Barkas Road at a cost of Rs.5.00 Crores.
- Widening of road from Botanical Gardens to Old Bombay Highway via Masjeed Banda Village at a cost of Rs.20.00 Crores.

- In addition to this, GHMC in association with the APIIC have also taken up the improvement of the following roads partly funded by APIIC.
  - Improvement of the road from Tolichowki to Gacchibowli at a cost of Rs.35 Crores.
  - Improvement of the Old Bombay Highway to Khajaguda – Wipro Junction at a cost of Rs.32 Crores.
  - Improvement of the road from Wipro Junction to Gopannapalli T Junction at a cost of Rs.12 Crores.
  - Improvement of the road from Gopannapalli T Junction to Nallagandla at a cost of Rs.14 Crores.

All the above works are proposed to be completed by the end of 2013.

- - <u>For creation of governing structure of ITIR:</u> Government has put in place the following administrative/ executive mechanisms in place:

  - (a) Nominated Information Technology & Communications Department as Nodal Agency for the Govt of AP for creation, monitoring and management of their proposed ITIR.
  - (b)Constituted a Management Board for the purpose of creation of ITIR comprising of Prl Secy to Govt, Municipal Admn & Urban Development (MA&UD), Revenue, Commissioner, Greater Hyderabad Municipal Corporation (GHMC), Commissioner, Hyderabad Metropolitan Development Authority (HMDA), Chairman & Managing Director, AP Industrial Infrastructure Corporation (APIIC), AP Transmission Corporation (APTRANSCO), AP Central Power Distribution Corporation (APCPDCL) and co-opted members from other agencies/Depts as and when required.
  - I Constituted State Level High Power Committee for monitoring the progress of implementation of ITIR comprising, Chief Secretary to Govt, Special Chief Secretary, Energy, Forests, Science & Technology Dept, Principal Secretaries of Revenue, Transport, Roads & Buildings, MA&UD and co-opted members from other agencies/Depts as and when required.

6. ECONOMIC ACTIVITY AND BENEFITS

The IT/ ITES sector is proving to be a major growth pole within the services sector, which in turn drives several economic indicators of growth in the Hyderabad region. The sector's contribution to the district's GDP has been steadily increasing from a share of 7% in 1999-2000 to almost 42% in 2005-2006. The direct economic impact is also realized in terms of increased export earnings and creation of employment opportunities. The growth in the IT/ ITES sector also boosts revenues of other related sectors and creates indirect employment opportunities. All of these aspects of economic benefits have been elaborated in the following sections.

6.1. LIKELY INVESTMENTS

The ITIR is expected to attract a total investment of about **Rs. 219,440 crore** of which the IT/ ITES sector is expected to attract investments of **Rs. 118,355 crore** and the Electronics Hardware Manufacturing sector will attract investment of **Rs. 101,085 crore**.

6.1.1. IT/ITES SECTORS

There are ambitious plans for development of IT/ITES sectors in the regions demarcated under the ITIR. Greenfield development is expected to come up in the CDA in the regions including Manikonda, Nanakramguda, Gopanpally, Kokapet etc.

Lanco and Emmar have been allotted 100 acres and 450 acres respectively in CDA for the development of technology parks and SEZs. About 400 acres of land has been allotted in Tellapur for mixed use development with an investment of about Rs 9,000 crore.

Similarly in International Airport area region, 4 sq. km. of IT/ITES development has been envisaged. Some of the major developments that are expected to come in a few years are as follows:

- Brahmani Infratech Pvt. Ltd., Indu Group and K Raheja Corp have already been allotted 250 acres of land each in the Hardware Park for developing IT SEZ within the ITIR.
- Brahmani Infratech plans to develop a 150-acre SEZ and remaining 100 acres of residential development with an investment of about Rs. 1,200 – 1,500 crore. They are planning to develop 75 acres as phase 1 within the next 5-7 years.
- Indu Group is developing their 'PointIndu' SEZ within an area of 150 acres and remaining 100 acres for residential development. The total floor space area will be about 8-10 million sq. ft. with proposed investment of approximately Rs. 2,000 crore. The residential area will consist of 2,000 units of houses comprising of both apartments and luxury villas.
- K Raheja Corp has also plans to develop their Mindspace SEZ within the Hardware Park, however because of their similar projects towards east of Hyderabad, this project will be developed after some time.
- Besides the large SEZ development other IT companies like Tata Consultancy Services (75 acres) and Cognizant Technology Solutions (40 acres) have been allotted land in the APIIC Work Centre.

In the Uppal Pocharam region, land parcel of 450 acres has been allotted for Infosys SEZ and 105 acres to K Raheja Corp for IT development which plans to invest around Rs 400 crore.

6.1.2. EHM SECTOR

Land allotment of about 25 sq km has been done for development of EHM sector primarily in the International Airport area region. APIIC is developing Fab City for the manufacture of electronic hardware and has already made allotments of about **518 acres** out of the total area of 1,200 acres in Fab City. The committed investment is about **Rs. 50,850 crore in Fab City**. Development of Fab City and Hardware Park is expected to attract more EHM units into the area and expected to attract further investments of **Rs. 50,235 crore**. Table 13 below is the list of Fab City allottees along with their investment and employment plans.

Table 13 : Investment and employment plans of Fab City allottees

#	Name of the company	Extent (Acres)	Investment (in Rs crore)	Employment
1	SemIndia Fab (P) Limited	100	13,838*	8,000
2	Solar Semiconductor (P) Limited	50	6,863*	8,500
3	M/s. XL Telecom & Energy Limited	50	400	186
4	Nano-Tech Silicon India	50	9,590*	
5	KSK Surya Photovoltaic Ventures Private Limited	50	425	1,720
6	Gennex Enpower Corporation Private Limited	30	9,240	720
7	Titan Energy System Limited	25	3,140	2,670
8	MIC Electronics Limited	25	850	1,200
9	NCS Renewable Energies Limited	25	1,050	1,000
10	Lampex Electronics Limited	20	556	2,000
11	Embedded IT Solutions (India) Private Limited	10	23*	250
12	Surana Ventures Limited	10	60	400
13	Photon Energy Systems Limited	10	750	345
14	Think Solar India Private Limited	10	968*	1,000
15	ICOMM Tele Limited	10	750	1,000
16	Dolphin Technologies Limited	10	500	700

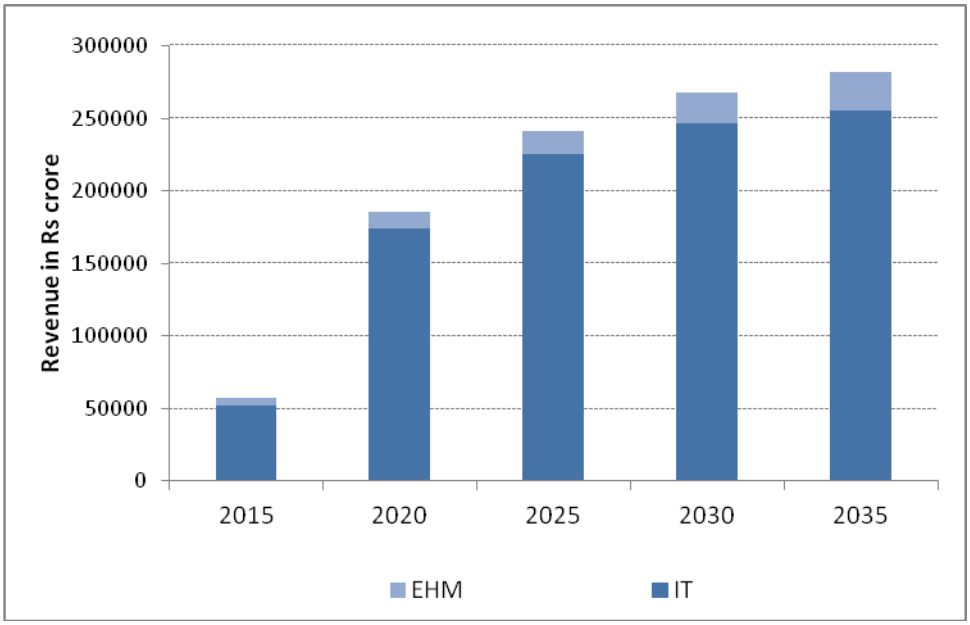
#	Name of the company	Extent (Acres)	Investment (in Rs crore)	Employment
17	Hanson Infrastructure & Projects Private Limited	8	100	150
18	Air Liquide India Holding (P) Limited	7	120	100
19	Radiant Dolar Private Limited	5	165	500
20	BOC India Limited	5	50	100
21	Honeywell Technology Solutions Lab Pvt Ltd	5	50	50
22	Chandreep Solar	3	25	10

6.2. ECONOMIC ACTIVITY

6.2.1. REVENUE GENERATION

When fully developed and operational, in 2035, the proposed ITIR is expected to generate annual revenues of around **Rs. 297,035 crore**, in terms of direct revenue. The IT industry will contribute **Rs. 268,233 crore** i.e. 90% of the total expected revenue, and the remaining **Rs. 28,802 crore** will be contributed by the Electronic Hardware Manufacturing industries. The expected revenue generation has been estimated based on demand projections and taking into account various factors influencing the IT and EHM industry.

Figure 12 : Revenue Projection



6.2.2. EXPORTS POTENTIAL

Annual exports from the proposed ITIR are estimated to be about Rs. 209,221 crore and Rs. 14,401 crore from IT and EHM respectively, in the year 2035. The IT industry in Hyderabad is mostly export oriented, with 75% of revenues coming from exports. Other factors like growing domestic market and emergence of cheaper off-shoring destinations which can affect the export market have been taken into consideration.

The EHM industry caters primarily to the domestic market and exports in the past have been very low at around 1% from Andhra Pradesh. However, with the liberalization in FDI and export-import policies, it is expected that both the total revenue generation and exports will increase significantly. Also, the proposed Fab City has mostly electronics components manufacturers for which the exports percentage is high (~ 50%) compared to other sub-components of hardware manufacturing.

6.2.3. EMPLOYMENT GENERATION

Besides contributing to the economy, the ITIR will also generate direct employment for the large educated population of the state. IT is estimated to generate a total of **13.4 lakh** jobs and EHM is estimated to generate around **1.4 lakh** jobs. The indirect employment generation by the IT sector is 4 times the direct employment and hence IT activities in the ITIR will generate additional **53.64 lakh** jobs in the service industry like catering, housekeeping, security, transport, etc. The EHM industry will generate additional indirect employment for **2.3 lakh** people.

6.2.4. OTHER SOCIO-ECONOMIC BENEFITS

The growth of the IT sector had fuelled the growth of other sectors as well and has much wider impact on the economy. According to a NASSCOM report, *"…every Re 1 spent by the IT/ITES sector (on domestically sourced goods and services) translates into a total output of about Rs 2 in the economy…"* establishing an overall multiplier effect of 2.0 on other sectors including housing, construction, transport, communication, entertainment, consumer durables, hotels, restaurants, automobiles, printing, etc. Similarly, the EHM industry has a multiplier effect of 1.3 through indirect impact on the economy. Based on the above assumptions, the proposed ITIR is expected to generate additional indirect revenue of **Rs. 573,909 crore**. Besides significant revenue generation and direct and indirect employment generation, the ITIR will have the benefits of concerted, integrated and planned infrastructure development.

7. COMMITMENT OF GOVERNMENT OF ANDHRA PRADESH

7.1. INITIATIVES OF GOAP TILL DATE

GoAP has been very pro-active in promoting IT/ITES/EHM sector in the state. It has also embarked on massive infrastructure projects to support the development of the sector. GoAP has also promoted projects like Hardware Park and Fab City to attract the IT sector.

7.2. COMMITMENT OF FINANCIAL RESOURCES

The state government will continue to support the planning authorities, utilities and any other statutory bodies responsible for infrastructure provision through budgetary sources for ensuring that they are able to deliver the infrastructure in a timely manner. GoAP will meet the internal infrastructure cost either directly or through private sector participation. To the extent possible PPP mode of financing of infrastructure will be undertaken. In the table below an estimate of the likely financing plan for internal infrastructure components is indicated based on likely investments that can be secured from the private sector. However this is likely to vary depending on investor interest, government policy for PPP etc...

Table 14: Financing Plan of Internal Infrastructure

#	Description	Total	GoAP	Private Sector
1	Road works including drain, culvert etc	2,320	1,856	464
2	Sewerage network including STP	1,084	867	217
3	Solid Waste management	105	-	105
4	Water supply including WTP	6,355	5,084	1,271
5	Electrical works including Transformer, street lighting	2,111	2,111	-
6	Telecom network	145	-	145
7	Rainwater harvesting & landscaping	156	-	156
8	Land Development cost including land cost (for roads, greens & utilities only)	817	817	-
	Total	**13,093**	**10,735**	**2,358**

8. SUPPORT FROM CENTRAL GOVERNMENT

As per the ITIR policy and the recent policy resolutions, Government of India (GoI) will ensure availability of external linkages to the ITIR including rail, roads and airports in a time bound manner. In this regard, GoAP seeks support from GoI for execution of the following projects pertaining to the external linkages for AP ITIR as detailed at para 3.5 above from page 55 onwards.

Table 15: External infrastructure requiring Central Government assistance

Item	Total Cost (Rs. Crore)
Phase I	942
Phase II	3,921
GRAND TOTAL	4,863

9. ANNEXURES

S.No.	G.O.No./Date	Subject
1	G.O.Ms.No.9, IT&C Dept, dt: 07.07.2010	ICT Policy 2010-2015 of Andhra Pradesh
2	G.O.Ms.No.27, IT&C Dept, dt: 24.07.2012	Electronic Hardware Policy 2012-2017 of Andhra Pradesh
3	G.O.Ms.No.13, IT&C Dept, dt: 31.07.2010	Operational Guidelines for administration of incentives of ICT Policy 2010-2015 of Andhra Pradesh
4	G.O.Ms.No.14, IT&C Dept, dt: 19.08.2010	Operational Guidelines on declaration of notified IT Park status as per ICT Policy 2010-2015 of Andhra Pradesh
5	G.O.Ms.No.2, IT&C Dept, dt: 18.03.2010	Constitution of Single Window Agency for obtaining the approvals/clearances for ICT Industry
6	G.O.Ms.No.5, IT&C Dept, dt: 20.04.2010	Declaring IT activity as an Essential Service
7	G.O.Ms.No.9, IT&C Dept, dt: 28.09.2011	Constitution of Industrial Security Task Force
8	GO.Rt.No.223, IT&C Dept, dt:31.08.2010	Involvement of SMEs in e-Governance projects of Andhra Pradesh
9	G.O.Ms.No.28, IT&C Dept, dt: 24.07.2012	Guidelines on creation of Electronic Hardware Manufacturing Clusters in Andhra Pradesh
10	G.O.Ms.No.71, IT&C Dept, dt: 05.05.2012	Constitution of Committee for attracting investments in IT Sector to the State of Andhra Pradesh
11	G.O.Ms.No.62, LET&F Dept, dt: 30.05.2012	Exemption from certain provisions of Labour Laws to IT Industry in Andhra Pradesh
12	Resolution No.94, dt:30.06.2008 of GHMC	Schedule of Town Planning charges and fees
13	G.O.Ms.No.86, MA&UD Dept, dt: 03.03.2006	Revised Common Building Rules of Andhra Pradesh
14	G.O.Ms.No.168, MA&UD Dept, dt: 07.04.2012	Building Rules 2012 of Andhra Pradesh
15	Notification dt:22.10.2012 of DeitY	Guidelines on Electronic Manufacturing Clusters scheme