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Eco-Industrial Parks and Their Formalization Perspectives in Azerbaijan

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Abstract

Increased economic development requires a transition to more environmentally friendly production systems. At the same time, the restriction of natural resources demands saving of them. Eco industrial parks provide more environmentally friendly and advantaged production systems. In many countries of the world, there are experience in the formation of these parks and these parks will play an important role in the future development of the industry. A new industry policy is being formed within the changing economic conditions in Azerbaijan, which has been a major focus of the extractive industry and the chemical industry for a long time. There is a great potential for the formation of eco-industrial parks in Azerbaijan. In this study, we have explained on the features of eco-industrial parks, their development and operation and mechanisms of creating eco-friendly parks in international practice. At the same time, we have tried to explore opportunities for the formation of industrial parks in Azerbaijan and future eco-parks. During the research, we have also examined the policy of the state in this field and the mechanism of functioning of existing industrial parks.

Table of Contents

ACKNOWLEDGEMENTS.....	I
ABSTRACT	II
1. INTRODUCTION.....	1
1.1 BACKGROUND OF STUDY.....	1
1.2 PURPOSE OF THE STUDY	1
1.3 RESEARCH QUESTIONS.....	1
1.4 SIGNIFICANCE OF THE STUDY	2
2. Theoretical analysis of the problem.....	3
2.1. Theoretical methodological approaches to industrial zones	3
2.2. Industrial parks and their mechanisms of action	15
2.3. Eco-industrial parks and their role in the industrial system	21
3. Substantiation and methodology of the empirical research.....	29
3.1. Forms of organization of modern eco-industrial parks.....	29
3.2. Mechanisms of eco-industrial parks	40
3.3. Role of eco-industrial parks in waste production and its formation and energy efficiency	48
4. Results of the empirical research and generalization of the results	54
4.1. The main directions of formation and activity of modern industrial zones in Azerbaijan	54
4.2. Future role of Eco-industrial parks in the Azerbaijani economy.....	61
4.3. Perespective role of eco-industrial parks in the formation of ecological and non-waste industrial processing in Azerbaijan.....	66
5. CONCLUSIONS AND RECOMMENDATIONS.....	73
6. REREFERENCES.....	75

1. Introduction

1.1 Background of Study

Industrial parks have been tremendous in spurring economic growth in country. And today, more countries are intended to transfer them into eco-industrial parks for protecting the environment. They want to build and modernize them for applying more effective methods for natural resources and energy. Nowadays, numerous organizations are using more clean energy resources and they use wastes for more effectively too.

Due to its profits and more eco-friendly structure, government could rise their size in their country. Today, we have so many kinds of experiences and methods for constructing and maintaining eco-industrial parks. Therefore, developing countries are able to use the experiences of developed countries, as well as the most developed ones can advise and help for creating them.

1.2 Purpose of the study

The purpose of the study is to make research about eco-industrial formalization and examine the positive aspects and roles of them with looking different types of organizations and their experiences. Since, today protecting the environment is one of the main purposes and challenge of the world and therefore, creating and maintaining of eco-industrial parks and zones are quite essential for every region in the world.

1.3 Research Questions

When trying to find out how the mechanism of the eco-industry's parks and their mechanisms of formation and the application of this mechanism in Azerbaijan then I try to answer these questions:

1. Identifying of the role of Eco-industrial parks in the economic system
2. Determination of their main activity areas in the international practice of their formation and management mechanism

3. The industrial parks that had been formed in Azerbaijan and the main directions of their activity, as well as opportunities for the formation of eco-industrial parks

1.4 Significance of the Study

The main focus of this research is its close proximity to sustainable economic development targets and the research is one of the key economic target and industry's new trend in the modern era. One of the other important aspect of this study is the recent upgrading of this field in Azerbaijan, as well as the traditional industry sectors, as well as a number of activities to improve the efficiency and productivity of the industry, which creates opportunities for the ecosystems to explore. Formation of industrial zones that capture non-waste and energy efficiency will create additional value for the country's economy.

2. Literature Review

2. Industrial zones and their place in the modern economic system

2.1. Theoretical methodological approaches to industrial zones

Industrial zones are within the framework of national urban planning in order to assess the role of industrial zones in the development of urban zones, commercial activities and services. It is this model that turns out to be effective, as it allows you to create jobs and stabilize the demographics in the urban sector. It is seen that industrialization in the world comes to the fore with the Second World War. Countries wishing to cover the losses of the Second World War preferred the way of industrialization.

The foundation for industrial parks has habitually been dual. First, the facility of practical substructure is much simpler to scheme in physically partial place, mainly for distribution- forced administrations. Second, the attention of organizations can offer important spillover outcomes equally internal and external the park: evidence spillovers, with information and equipment; the concentration and separation of industry amongst organizations; the growth of trained labor marketplaces; and the expansion of marketplaces nearby the parks. The wide-ranging kind of an industrial park is a focused arranged of organizations functioning on a delineated 'rigid' structure position. Outside this, a quantity of dissimilar methods have been advanced. Greatest include extra controlling structures, often to avoid uncooperative business environments, expedited by the "partial" space involved, in which instance the umbrella expression is "Special Economic Zones" (SEZs). Such differences contain: "tax" parks (which offer tax profits); technology parks; "green" parks; "trade handling zones"; and numerous others. In this paper, "industrial park" will be used in its greatest overall intelligence, i.e., concerning the establishment of mutual substructure to a collection of industrial organizations in a defined area, while methods connecting additional controlling or additional procedures will be specially signified as such.

In every variant, industrial parks in philosophy are a instrument to progress a more overall method of industrial organization: industrial "clusters", a awareness of interrelated

organizations in a specific field. Such clusters can shape “organically”, or can be the goal of careful rules. The detection of vigorous cluster growth, like that of industrial parks themselves, can be a contentious policy aim. On the one hand, the development of industrial clusters is regularly cited as a motorist of China’s quick growth. Many developed naturally, but state (especially local authority) also offered critical provision for their growth.

Indeed, cluster expansion, and industrial park and zone ideas in certain, have also been topic to important criticism. Here have been arguments concerning land distributed for their structure, sometimes at great scale, specially when parks are prolonged delayed or barely occupied, powering claims of land speculation. It has established difficult to establish additionality, i.e. that the movement in parks would not have occurred without their creation and the civic money that has been disbursed to upkeep it. This later criticism has been deepest for rules that not only offer civic money for park building but sacrifice revenues in the system of taxes or option to detailed regulations such as weaker labor laws to appeal investment.

The disparagements seem to have had slight to no influence on exercise yet. Whether or not unique side or the further of the common debate is right, park and zone curriculums remain to proliferate, and numerous stay to under-deliver. Taking just a limited examples, numerous parks in Central America have wrinkled the tax base in here; in Africa, industrial parks are frequently recognized to view mostly empty even later many years; and a quantity of industrial parks in Afghanistan maintained by various presenters either did not develop operational or unsuccessful to invite demand. However, a sight at pipelines of expansion programs through continents discoveries no interval in the formation of novel industrial park programs. Meanwhile the obtainable evidence strongly advises this will remain, there are probable more increases in accepting how and why park curriculums do or do not bring than in trying to border a general rule of their facts.

These overall features apply powerfully to the Indian background. For periods government-level industrial development companies have been constructing industrial parks. At the midpoint, multiple departments and plan phases have outlined novel industrial park

schemes. The most noticeable new power was the SEZ program, jumped in 2005, which tripped in operation.

Many instances of prosperous parks have been developed in India, completed both downtown and government enterprises, but the general record is definitely diverse, and timelines manage to be extended and enlargement. Several issues are often suggested to clarify the disappointments of industrial park programs. Certain are extremely specific, such as the danger of conflict, but most are comprehensive, for instance, poor segment targeting; poor position choice; inadequate savings in infrastructure; poor application size and lack of expert; and lack of high-level provision and steadiness. At this time these are overcome, or sidestepped, comparative disappointment is also accredited to issues such as a absence of support for knowledge acquisition, skills structure and quality guarantee, or other movements that would make “cluster effects”. Such analytical focus on the lack of specific institutional methods, rather than the meanings that should be helped by the dissimilar stakeholders. This turns this risk of construction in “durable priors concerning the nature of the difficulty and the suitable fixes”, and can attitude in the way of detection solutions in terms of functioning. Consequently, find it additional useful to categorize implementation disappointments of industrial parks into four key performance groups:

- (i) parks do not become constructed;
- (ii) parks are developed although there is slight demand from organizations to localize as well as invest into them;
- (iii) parks are constructed and make demand, nevertheless with limited “cluster effects”;
- (iv) parks are prosperous but have impartial or destructive side-effects on investment sense outdoor the park (“destructive spillovers” what is more “crowding out”).

All of these types have been combined in many dissimilar ways amongst national, sub-national and local levels of state, and as many as four kinds of private sector organizations: consultants rented by the authority for demand documentation, or scheming as well as financing of the parks; “developers” who characteristically make the master strategy for the

parks; rented “constructors” plus “operators” who make the parks and do their operation and maintenance (i.e., who track more than construct decisions); besides “users”, the private financiers inhabiting the park themselves. Into this light, it is partial use to demand an industrial park delivery prototypical “private sector focused” or “public-private” once the private segment is “involved”. With a great number of procedure stages and roles, the serious questions are: Who does the “private sector” mention to? As well as, what stages will they accept?

Into this light, the relevant question for a park system is how the select of a certain portion of the public or private segment to apply these steps grows or decreases the opportunity for such disappointments. The expressions “private sector” or “PPP” require to be used carefully. Frequently, this suggests private sector immersion primarily in the late steps of inner dimensioning (iv); infrastructure creation (vii) and park process & maintenance (viii), while the more basic location choice (i), as well as demand connection and general dimensioning (ii) are mainly, if not completely, engaged on by a public unit. Even if this unit is reinforced by a technical consultancy, client consultant organization and struggle of interest problems mean such stages might be de facto public and very frequently governmental.

Besides, “private sector” is heterogenous. The enticements and costs fronting a consultant, a maker and the users of the park are very diverse, as is their condition – formal and informal –inside the native political economy. It is significant to attention against the earlier statement that “the private sector” will be superior at all stages. Whether this is thus, as well as who is expected by the “private sector”, will rely on specific abilities and inducements. The plan of industrial park lists ought to consider these steps, and pursue to recognize, inside the light of local political economy, which performers would be well or poorer suited to which characters.

The impression of industrial district is genuinely far reaching in later modern financial aspects and in business contemplates, with an assorted variety of significances and typologies. Undeniably, the honest unique idea days consequently to Alfred Marshall and the market forecasters of the announced Cambridge school. Reasonably regularly the possibility

of modern region is estimated as indistinguishable with agglomeration, limitation just as bunching. Be that as it may, as per the signification given previously by Marshall, these movements of industry 'dearterialization' are very divergent from the additional 'compound confinement' this is the Marshallian industrial area. Thus, the motivation behind our commitment is resolved on unraveling its remarkable significance from strengthening resulting elucidations, alluding principally to the discussion on this subject rose among the financial specialists of the Cambridge School.

In reality, Alfred Marshall is the maker of the Cambridge School of Economics and he achieved the Political Economy Chair in the 1885. From his coming at Cambridge, his significant point was 'to build the status of monetary trainings in Cambridge by giving it a Tripos of its own'. Marshall assumed his impartial in multi-year when he recognized the Economics and Tripos of Political Sciences as autonomous from the Tripos of Moral Sciences advanced a long clash exclusive the Academia. Financial matters upgraded a huge piece of Cambridge shrewd life and for a long time the 'Cambridge School of Economics' taken an interest a predominant offer in the consequences of monetary approach in Britain and in Academic dialogs. Certainly, as efficiently underlined by Becattini in the 1990, we should distinct between two different Cambridge Schools of Economics.

The first is the more distant broadly referred to just as is the one brought into the world adjacent J. M. Keynes. Amongst individuals fitting to this college we find Richard Kahn, Joan Robinson, Gerald Shove, Nicholas Kaldor, Austin Robinson as well as besides Piero Sraffa.

The second is distant less referred to just as it is the one brought into the world adjacent Alfred Marshall. Among those setting off to this foundation we reveal: H. Robertson, A. C. Pigou, and Arthur Bowley; H. Macintosh Gregor, S. Chapman, C. Sanger and R. Fay just as Philip Florence and various others like Becattini (*Becattini G., 2004*). Becattini asks for the later school 'the Old Cambridge School' so as to separate it clearly from the past, which industrialized later. Both of these schools are amazingly adjusted. In explicit the Old Cambridge School incorporates those understudies of Marshall who arranged and built up the

examination fields prized to Marshall and as per an odd methodological strategy. Among the few territories of mindfulness the most basic is industrial financial aspects contemplated in a wide mindfulness: the total and cautious investigation of the firm of work, associations, industry and exchange, especially transnational exchange. Like we know, Marshall is moreover the 'father' of the advanced idea of 'Industrial District'. A. Marshall 'uncovered' the reality of modern regions quite early, perhaps in his 'Wanderjahre among manufacturing plants', and dispersed with them from his essential strategy to monetary science. Essential positions to industrial locale are finished, for instance, in *The Pure Domestic Value of Theory*, an exertion that can be unfashionable among 1873– 1877 years.

In spite of the fact that the Marshallian industrial area is these days perceived as a huge part of present modern financial matters (Piore and Sabel (1983), Brusco and Paba (1997), Pyke and Sengenberger (1990)) and as an essential component of Marshall's trusted (Loasby (1999), Becattini (1962 and 1975a), Raffaelli (1998)) we think of it as important to review its central qualities so as to improved comprehend its extra advancements finished by the Old Cambridge School. 'Industrial region' is where a mindfulness of associations has settled down; be that as it may, it isn't only a restricted industry, by method for Marshall elucidates attractive, especially in his *Economics' Principles*. A found industry is an industry centered in guaranteed areas. The intentions in a geological use of associations might be unique: first, the prerequisites of the makers to be near the salaries on which they rely upon. Imprisonments are primarily associated with physical circumstances (for example, soil, climate, coalmines, quarries, access to terrestrial or water) and shows the source of various English areas alike Bedfordshire, Staffordshire, and Buckinghamshire. Furthermore, 'the help of a court' that makes an 'ask for products of especially high trait' in the 1920. Third, the participation of a city: 'practically every one of the modern area has been resolved in one or additional huge towns.

In here, Marshall recognizes two sorts of regions: one that portrays an advancement of the "midpoints of particular aptitudes" since the pre-industrial age just as extra made intentionally and in a prearranged manner as the result of the overflow of a few assembling

and craftsmanship achievements from the modern capitals normal for English free enterprise at the finish of the nineteenth century. In the essential condition, of which Sheffield, with its all-encompassing iron-working custom, is an ideal example, the significant component is the reliance among specialized monetary issues and the central sociocultural relations. It is an all-encompassing and complex system in which a reasonable stream of financial creations prompts a strategy whereby the best productive ones are consolidated inside the foundations. The second circumstance recommends, in embryonic framework, the job of open technique in the making of assembling locale. In an archive that built up the announcement of the Promoted Industrial Villages by Society, which was adjacent to the Movement of Garden City, of which, seriously, Marshall was a member, he kept up "the improvement of a relationship specifically place well somewhere else the assortment of London smoke. A.Marshall's idea of the assembling region isn't only the mindfulness of assembling development in a given territory (the bunching or communicating of organizations alluded to by various financial experts today) that results from the "characteristic" extension of commercial center automatisms. Inside A.Marshall's idea, financial in addition to socio-social wonders are stuck into a singular hypothetical square, flooring the strategy for the use of commanding open techniques.

Since Alfred Marshall previously presented the idea of a industrial territory into financial idea during the 1890s, the group exchange has not yet been as unique as it is today. Never since the Italian school restored his thoughts and made an interpretation of them into a logical field, there has been no such intensive research on these subjects. Furthermore, never, since Michael Porter celebrated the idea of a "group," there was still no such consideration that legislators, nongovernmental associations, top directors, specialists, and established researchers bolted on it.

Groups show up in different shapes, edges and sizes, are the reason for a wide range of enterprises and exist at various phases of the existence cycle. They can be found in created and creating nations. There are such outstanding as: Silicon Valley, Las Vegas, the money related focal point of London, regions gaining practical experience in the production of data

and correspondence advances in India (ICT), fabricating groups of China, and so forth. This decent variety of species causes the issue of a general meaning of a bunch and prompts the rise of an assortment of elucidations, wordings and logical schools, every one of which somehow or another thinks about the embodiment of the group. This examination will consider a conviction framework that consolidates the ideas of the most well known schools.

Among the writing on groups there is a wide assortment of definitions. This causes numerous challenges and troubles in the utilization of this term in the writing and talk of local improvement. The issue is that because of its ubiquity, groups are contemplated by numerous researchers from various fields: financial specialists, social researchers and political advisors, just as a developing number of representatives and political figures. The accompanying passages followed the authentic advancement of the idea of the group, just as the perspectives of logical schools, which made the best commitment to the present comprehension of this idea. All schools showed up based on verifiable occasions of explicit districts, which significantly changed the aggressive circumstance and the manner in which organizations interface with condition. Their local chronicled setting, introductory conditions and the fundamental requirements for the upper hand of firms-bunches are followed further.

The beginning stage of present day inquire about on bunches lies in the meaning of industrial or modern zones in England, which Alfred Marshall gave toward the finish of the nineteenth century. As of now, Marshall watched the beginning of another period and the example of changing creation lines, which would later be known as the "main industrial gap" (first modern separation). An indication of this redistribution was the rise of an expansive vertically coordinated partnership, which made progress from the outer economies of scale and the generation of institutionalized merchandise. These enterprises went about as genuine new rivals in the market and undermined to oust little art firms. By the by, amazingly, firms all through England and Europe endure this progress, yet additionally kept on thriving in a situation that was later called an industrial zone. Not with standing a clear portrayal of the industrial territories of the time, Marshall was additionally ready to convincingly clarify how their appearance enabled little firms to effectively rival substantial enterprises. His

contentions depended on two components that he investigated throughout his exploration: the outer impact of scale and the alleged industrial air that was made by all organizations in the area.

In view of his perceptions of the conveyance model of monetary ventures in the nineteenth century in England, he characterizes the industrial zone as the grouping of countless firms of a similar sort in a similar territory. As per Marshall, industrial zones enable actions to profit by outside economies of scale. Firms increment their productivity through a high level of division of work, and this enables an individual firm to concentrate on one explicit advance of the creation procedure. In his work, Alfred Marshall distinguished a few expanding and diminishing scale impacts when finding creation in a modern territory.

Industrial regions offer an alluring business sector for very much prepared workforce, which benefits the two managers and representatives. Businesses profit by a decent choice of laborers with the specific information they require. Representatives profit by the nearness of potential managers who offer certainty to themselves and their relatives to look for some kind of employment.

To aggregate up, Alfred Marshall's most noteworthy commitment is to establish that closeness makes critical effectiveness gains for independent companies, which enable them to benefit from economies of scale, just as extensive partnerships. Likewise, it ought to be noticed that with the presentation of the socio-social component of industrial zones, he started to depict the requirements for the development and working of groups dependent on non-financial reasons.

During the 1970s, Italian schools swung to A. Marshall's thoughts on industrial zones. These thoughts were seen as a point of reference for clarifying the monetary accomplishment of the focal and northeastern districts of Italy.

The principle impediment of the idea is that the ends and hypothetical reflections depended just on the Italian case of industrial zones, complex chronicled and social roots, the predominance of the broadly spoken to private venture and the concentrating of the thought on conventional workmanship businesses. These weaknesses fundamentally limit the

speculation and the level of appropriateness of this perspective to another specific situation, for instance, to nations in which a solid propensity towards more challenge or inventive innovative enterprises is progressively articulated. This disappointment prompted the rise of the California Science School.

The California School inspected industrial regions spoken to by a lot of specific and vertically crumbled firms and organizations moved in one area. The essential reason is that sure outside variables cause developing vulnerability, which is upheld by an expansion in the quantity of on-screen characters in the generation tie so as to limit the danger of overproduction and amplify the advantages of specialization.

The best shortcoming of this methodology lies in its emphasis on the general hypothesis of the firm and exchange relations, which can be measured. Nonetheless, examines have appeared there are different explanations behind the union of firms and the arrangement of bunches, for example, helpful standards, principles, and states of presence.

The following way to deal with the idea of a group was created by Michael Porter (*Porter, M.E.,1987*). Watchman characterizes bunches as a topographically firmly found gathering of interconnected organizations and related foundations in a specific field of movement, described by shared trait and interconnection. Groups incorporate an expansive number of particular providers, administration organizations, related handling and assembling businesses, makers of integral items, specific related organizations, government offices and different establishments giving particular administrations, for example, preparing, instruction, statistical surveying and specialized help. Doorman's definition brings up that bunches are comprised of a lot of free on-screen characters interconnected (*Doorman F., 2013*). These connections can be level and vertical. Bunches can be founded on little firms and substantial firms or mixes of both. For group arrangement, it is imperative that these subjects are topographically near one another, since this is key standard for deciding the bunch.

Thoughts, for example, the procurement of learning and experience inside the national or provincial economy, just as creative advancement inside the group have turned out to be

known as a major aspect of the lessons of the Scandinavian school of development and information. Its delegates contend that the present economy is portrayed by steady a noteworthy change and consistent obscuring of near favorable position. Along these lines, developments are considered as the most critical factor of consistent achievement, as they strengthen the upper hands of the firm. Preparing and the creation of new learning structure the development towards imaginative improvement. Hence, advancement performing artists try to make a learning framework that enables them to deliver and move information between them in increasingly productive ways. Information framework can contain impalpable and physical establishments, for example, standards, guidelines and propensities, just as social and private research associations, colleges, science and innovation parks and national labs.

Groups of inventive firms, in this manner, are essential motors for local advancement improvement. To start with, nearness enables firms to all the more regularly share involvement and casual information, as more tightly associations among providers and purchasers advance trust and collaboration. Besides, closeness not just expands the speed of correspondence between firms, yet in addition improves the nature of data transmitted. Firms that begin to participate with one another on a long haul premise are bound to share arranged data. Thirdly, such an area additionally lessens false impressions and pressures between subjects. Firms in a similar field are bound to rehearse similar examples of conduct, utilizing a typical language and social premise, which will decrease language and social obstructions in correspondence. Along these lines, the area improves the probability that messages will be accurately seen and unscrambled by the beneficiary.

Despite the fact that this idea looks honest in clarifying the quintessence of the group, there is an analysis of this methodology. There are numerous assessments that organizations are not fixing to their nearby condition with regards to gaining from their primary rivals. The reviewed examinations demonstrate that organizations can make up for the absence of connected learning by interfacing a lot of instruments that have nothing to do with geographic vicinity, for example, building investigation, patent divulgence, exchange diaries and fairs.

Subsequently, every one of these investigations demonstrate the way that geological area ought not be considered as an exceptional wellspring of connected information, since they are not as fixed and shut as is frequently expected. Be that as it may, connected information ought to be seen as something joined to individuals, setting subordinate and socially available just through direct collaboration. In this way, it makes them to some degree attached to a specific domain, since certain parts can be lost or contorted while trading data at a separation, notwithstanding when individuals and associations are effective in working with one another. In this way, land closeness is an essential, however not by any means the only, and definitive factor for the trading of information. All things considered, geographic area isn't so essential when the requirement for individual contacts isn't sufficiently high to require co-area in one spot, just as in situations where information can be exchanged through formal gatherings, for example, authoritative systems, joint endeavors and mergers.

This article talks about the fundamental precepts of the most vital logical schools on the bunch, its instruction and working. The aftereffects of this survey can be followed in the table, which contains a count of the principle attributes of the group from the perspective of the schools considered.

This examination comprehends why the expression "groups" still does not have a solitary translation. Articles frequently utilize this idea to portray a specific arrangement of firms in a similar domain. This is somewhat valid, yet you have to comprehend that a bunch is portrayed by certain interior procedures. What's more, just "drenching" in the perspective of different logical schools with respect to the key qualities Cluster abilities recognized inconsistencies, discover the upsides and downsides of different methodologies, comprehend the contrast between the "group" and different relationship of firms, and characterize interfaces between firms dependent on the current agglomeration, which will give us comprehend the arrangement of bunches and the development towards advancement.

The creator proposes the accompanying group definition as: "the land convergence of interconnected firms and organizations that collaborate with one another inside a typical asset

base and single market and tend to share commonsense learning that quickens the advancement of an imaginative economy of regional elements".

2.2. Industrial parks and their mechanisms of action

The industrial park is a region extraordinarily organized the area of new preparations, furnished with vitality assets, framework, essential authoritative and legitimate conditions, overseen by a particular organization.

The modern park is a industrial site where a few free undertakings from the equivalent or distinctive enterprises work. Setting their creation in the basic domain of the venture is regularly associated by normal esteem chains and offer the joint park framework and administrations given by an open or private administration organization. The compound business regularly utilizes the name Chemical Park.

"The industrial (mechanical) park is a complex of land objects overseen by a solitary administrator (particular administration organization) comprising of a land plot (locales) with generation, managerial, stockpiling and different premises and offices, furnished with vitality, building and transport framework and regulatory law conditions for arrangement of creation. Extract from the "Standard Industrial Park" - the official report of the Non-Profit Partnership "Relationship of Industrial Parks".

The Association of Industrial Parks is a sectoral non-benefit association that joins most of mechanical stops in Russia, just as specialist co-ops in the field of modern development so as to advance basic interests.

The individuals from the Association are 130 legitimate elements speaking to 89 industrial or mechanical stops in the domains of 46 constituent elements of the Russian Federation. Alongside the administration organizations of modern stops, the Association incorporates local improvement partnerships, counseling, structure and development organizations.

Together we work together to make the best conditions for financial specialists in Russia. Our errands are identified with the advancement of fitness in Russia in the expert administration of modern destinations, just as observing consistence with exclusive requirements of industrial parks dependent on the best Russian and global practices.

Consistently we hold around 20 industry occasions, and furthermore on a progressing premise speak to the premiums of our individuals in universal affiliations and at venture occasions.

The Association is the distributor and copyright holder of the Industrial Parks of Russia sectoral Review. This is a yearly systematic distribution, which is the first thus far the main thorough wellspring of solid data in Russia on every single modern park in the nation. The Association consistently directs and other industry-explicit research in the field of modern parks, produces diagnostic materials. The affiliation is the "passage point" and conductor in Russia for remote financial specialists intending to restrict creation.

The configuration of industrial parks is a successful instrument to build the aggressiveness of the local economy, adding to the production of new employments, diminishing import reliance, drawing in new ventures, making a steady and agreeable business condition, expanding the scholarly potential, just as expanding charge incomes to spending plans all things considered.

On the off chance that we consider a modern park as it ought to accord western criteria, at that point it has a lot of unmistakable highlights that make great conditions for the advancement of industry, to be specific:

1. Land is possessed or rented by the administration organization, and there is an improvement plan for the region;
2. There is an amazing designing foundation, the administration organization causes inhabitants to associate with interchanges, gives security of the domain, fire wellbeing, and so forth.;

3. The administration organization enables inhabitants to sort out their business, having certain forces to find offices inside the modern park and going about as a mediator between the speculator and the provincial organization;

4. The administration organization furnishes financial specialists with a scope of business administrations (secretarial, dispatch, coordinations, bookkeeping, faculty seek, and so forth.);

5. The administration organization arranges building ventures, oversees development ventures, offers to rent its own structures in the recreation center.

Today, the principle thought of numerous continuous ventures for the formation of industrial parks is to accomplish a cooperative energy impact from finding comparable or vertically incorporated businesses, just as related administrations and research focuses. The nearness of a specific specialization in the industrial park, the area of undertakings from one or related enterprises on its domain is one of the primary preferences of the task.

Modern arrangement ought to be gone for keeping up and invigorating the most noteworthy need regions of mechanical generation advancement, guaranteeing the intensity of local ventures in remote and residential markets and filling in as a sort of "development focuses" for different parts of the territorial economy. Notwithstanding, such need territories ought to at first be controlled by each driving venture autonomously during the time spent concentrated work on finding and picking the best methodology for accomplishing feasible advancement. The undertaking of local experts is the last positioning of need zones in the advancement of modern creation, with the point of their help from the area as per the accessible open doors for a given timeframe and viewpoint.

The present advancement pattern of the business is a result of market guideline, which guarantees development to the detriment of the most productive and financially appealing plans of action and kinds of projects. The improvement and backing of projects for the reproduction and re-industrialization of old industrial zones, including single-industry towns, will make it conceivable later on to essentially build the offer of various sort of parks in the general structure of the business.

So as to execute financial rebuilding, a methodology for the financial advancement of a locale ought to incorporate a lot of proportions of monetary guideline, comprising in making the vital conditions and impetuses for the required changes. It ought to be noticed that this record isn't standardizing for associations of the private area of the economy, and open experts in a market economy don't have direct switches on private business.

The main component for taking care of these issues is to make ideal conditions for the advancement of existing ventures and draw in new financial specialists to the domain.

So as to make an agreeable and alluring speculation atmosphere in the area, it is important to actualize measures gone for making a thorough venture advancement system. The focal component in this procedure is viewed as state specialists, which ought to wind up a connection between the speculator and the asset markets, guaranteeing the decrease of the financial specialist's time and expenses for the usage of undertakings for the advancement of existing and making of new ventures.

Value financing of speculation ventures utilizing open private association systems. So as to aid the usage of venture tasks of need significance for the financial improvement of the locale, it is conceivable to utilize the assets of the territorial spending plan or provincial associations supporting business enterprise and interest in the system of speculation ventures.

By and by, financial specialists are pulled in to areas in which nearby governments seek after a predictable arrangement went for supporting the advancement of modern parks. It depends on the understanding that tax reductions are not loss of benefits against the foundation of the need to recharge the financial plan, yet an impetus for the advancement of industry in the district, charge incomes from which will result in commonly more than the volume of starting spending plan "misfortunes".

Today the industrial parks fragment will grow all the more effectively where incredible fundamental endeavors are being made to make great managerial, institutional, hierarchical and money related conditions. Such districts will get the best positive monetary and social impact from the formation of industrial or industrial stops on their region, just as a substantial increment in appeal for household and remote financial specialists.

Individual support of the main people of the district and region Practically in all areas where effectively working industrial parks are made, the "zero cycle" requested the most elevated consideration from the nearby specialists - the individual interest of the representative, the high ranking representatives of the legislature. Their legitimacy is the accomplishment of casual concurrences with the primary occupants, with power engineers, guaranteeing the opportune satisfaction of the district's commitments on streets and provincial assessments. Tax reductions are allowed to inhabitants in practically all parks.

It ought to be noticed that industrial parks are the train of business advancement. For all intents and purposes all the main nations of the world, utilizing the arrangement of open private organizations in the system of the development of industrial parks, make a compelling stage for the manageable long haul advancement of the modern complex of a specific locale.

There are numerous models for modern parks, which arrange in various zones. The Höchst Industrial Park in Frankfurt is one of the vital modern parks and its area catches around 90 substance and pharmaceutical organizations occupied with research, advancement and creation. This area is one of the biggest and best in Europe, where new organizations are always setting up. It is created by the individual organizations quite a long time after year with a large number of speculations. Since 2000, the complete speculation has been around 6.3 billion euros. The strategic points of interest of the area incorporate the focal area in the core of Europe, the ideal associations with the expressway organize and the rail system of the Deutsche Bahn and the vicinity to Frankfurt Airport. Its very own port office, as a "Trimodalport", makes it conceivable to associate the rail, street and conduit methods of transport. Added to this is the ideal specialized foundation, with productive vitality age frameworks, which make the area vitality independent, directly through to present day transfer offices. Around 22,000 individuals chip away at the site, which has the elements of a community of 460 hectares. Industriepark Höchst is the previous parent plant of the previous Hoechst AG. Since 1998, Infraserv Höchst has been the area administrator in charge of the effective framework of the industrial park

Undoubtedly, the best biggest modern parks are mostly situated in U.S.A. , Canada and Middle East and different districts. Jubail Industrial City and Ras Al Khair Industrial City (RIC) are number of them and Petrochemical and mining items in East Saudi Arabia Dillon, city populace and generation are relied upon to twofold in 20 years, while a city end-all strategy was created by Jubail Royal Commission . Jubail is household to the extreme metropolitan in the Middle East and crowds the fourth actual petrochemical corporation on the world and the highest in the Middle East. Created city end-all strategy to give a lightweight and steady arrangement for the 500 ha J1 light modern region plan for over 400 years; and to do as such by assessing our future lodging for the two urban areas. Industrial City of Jubail is located on the Arabian Gulf, 100 km north of the Dammam Metropolitan region. It is an overall petrochemical complex with essential, optional and bolster ventures. JIC covers a zone of roughly 920 square of km . Their underlying territory of 260 km ² was resolved for advancement. The Jubail Industrial City framework comprises of:

- Power
- Gas
- Telecommunications
- Water and waste water frameworks
- Seawater cooling framework
- Recycled water framework for water system and industrial or mechanical use
- Bulk material taking care of framework
- Transportation offices (air terminal, modern and business port complex, railroad, street arrange).

The Community territory is situated toward the north of the modern zone giving business, government and local locations for Jubail Industrial City representatives. Dillon gave an all-inclusive strategy (MPU) for changing Jubail from a world-class industrial complex with network space into a "total city with a lively downtown area, petrochemical bunch, propelled creation, innovative work, and a progressively differing industry base. Increasingly green advancements, lodging, malls and progressively offer an assortment of

amusement and diversion openings. As an expert for the Jubail Industrial City venture, Dillon works with a universal sub-conference group. The MPU is an extensive, multidisciplinary plan refresh covering 10 specialized volumes, including an arrangement plan. The MPU incorporates an appraisal of long haul development projections, nearby and worldwide financial patterns, and a nitty gritty survey of future venture open doors for petrochemical improvement in the JIC. The MPU gives an arrangement to another 6000 ha modern park (J2), including the whole foundation of the recreation center, land use and transport arranging. The MPU offers monetary broadening, improvement openings, and a technique for another innovative work park and college practice close Jubail yenis new downtown area.

The Tahoe Reno Industrial Center is additionally one if most biggest modern stops in U.S.A. what's more, this modern park situates in Nevada, which represents around 433 square kilometers, about portion of the nearby Story County. Usable for mechanical settlement are in the uneven desert zone 121 square kilometers, all the more correctly 12,140 hectares. The territory is roughly 14.5 km east of the twin urban areas of Reno and Sparks south of the Truckee River and spreads 19.3 km along the Interstate 80, which pursues the course of the river. Named the modern park after the southwest Lake Tahoe and the adjacent town of Reno.

2.3. Eco-industrial parks and their role in the industrial system

Today, the principle main impetus in the improvement of eco-industrial parks is rivalry driven plans of action. The eco-industrial parks not just make ready for lower-cost generation with the open doors they offer, yet additionally step forward with condition neighborly advances in the new request, where buyer inclinations are unequivocal in the challenge. In doing as such, they offer a group and imaginative stage for activity to counteract environmental change. The arranged eco-modern park demonstrate, which has been actualized in South Korea since 2005, has spared 554 million USD altogether since 2005 by changing the conventional composed industrial zones (OIZ) into eco-modern parks. Turkey's aggregate of 289, including half breed and concentrated OIZ is disseminated in seven districts

establish the soul of Turkish industry. In this sense, the eco-industrial park display has a high potential for the Turkish business to be increasingly aggressive on a worldwide scale.

The Paris Climate Change Agreement flags how environmental change is a need for approach plans in both created and creating nations. Ventures are in charge of roughly 33% of immediate and circuitous ozone harming substance discharges on the planet. The environmental change activities to be created at the modern dimension will assume a vital job in accomplishing the worldwide targets expected at the global atmosphere summit in Paris and after the summit.

As the eco-modern park display contributes fundamentally to fighting environmental change, governments, urban communities and extraordinary financial zones are relied upon to wind up increasingly across the board during the time spent dynamic activity against environmental change.

In spite of the fact that the eco-industrial parks have move lately in the idea of industrialization, the establishments of this idea have been laid in the principal long stretches of the foundation of modern zones in nineteenth century Europe. In any case, the period in which the real ascent has concurred with the result of the Second World War. As a characteristic result of asset deficiencies and high vitality costs in Germany, Denmark and Finland after the Second World War, it developed as spontaneous modern beneficial interaction and proficiency measures at first.

The primary subjects of the eco-industrial park display in the early years were squander the executives and contamination counteractive action. During the 2000s, Japan, China and South Korea improved their intensity in worldwide markets by creating national arrangements to help their work on eco-industrial parks. Over the most recent 5 years, the idea of eco-industrial park has turned into a worldwide idea which has turned into a historic idea in modern zones, and in this model, the improvement of modern zones proceeds in around 40 nations.

In spite of the fact that the World Bank did not have a universally concurred definition amid an examination, the World Bank has distinguished in excess of 254 ventures and

arranged eco-modern stops altogether, with 77 percent working on the planet. These recognized eco-industrial parks have embraced a progression of natural and supportable applications, and 80 percent of them are modern parks. Nearly 59 percent of these parks were changed over into eco-industrial parks with the improvement of the current parks, and 34 percent were built without any preparation. In any case, as much as 7 percent has been changed into an eco-industrial park show in a natural or impromptu way.

Eco-industrial park is an exceptionally new idea and it is characterized in the writing by putting diverse determinant parameters in core interest. The watchwords related with eco-modern parks are ecological administration, industrial beneficial interaction, vitality effectiveness, asset proficiency and clean creation and financial aggressiveness. In these, eco-modern parks are the most well-known unmistakable parameter of industrial beneficial interaction.

One approach to stay away from extensive scale industrial contamination could be purported eco-modern parks. The term alludes to mechanical edifices in which organizations coordinate with one another to share assets and use them all the more effectively - from land and materials to transport, know-how and vitality.

The utilization of purported efficient power sources energies additionally assumes a noteworthy job in the eco-modern parks. The thought behind it: organizations ought to lessen their own carbon impression and add to supportable improvement.

Eco-industrial parks and importance as an utilization of the idea of manageable advancement:

- relative dematerialization, which permits to acquire more administrations and items for a given amount of material
- supreme dematerialization, which tries to lessen, in outright esteem, the streams of material going through the modern framework

By and large, a standout amongst the most ideal approaches to dematerialize the economy is to enhance the utilization, for example to sell the utilization rather than the article.

- Decarbonize vitality (in other words, continuously change to hydrocarbons containing relatively not so much carbon but rather more by and large, decrease the reliance on non-sustainable power sources).

It ought to be noticed that industrial nature works at three levels:

- at the local/worldwide dimension, the point is to improve material and vitality proficiency all through the economy. This is the worldwide viewpoint of industrial environment.

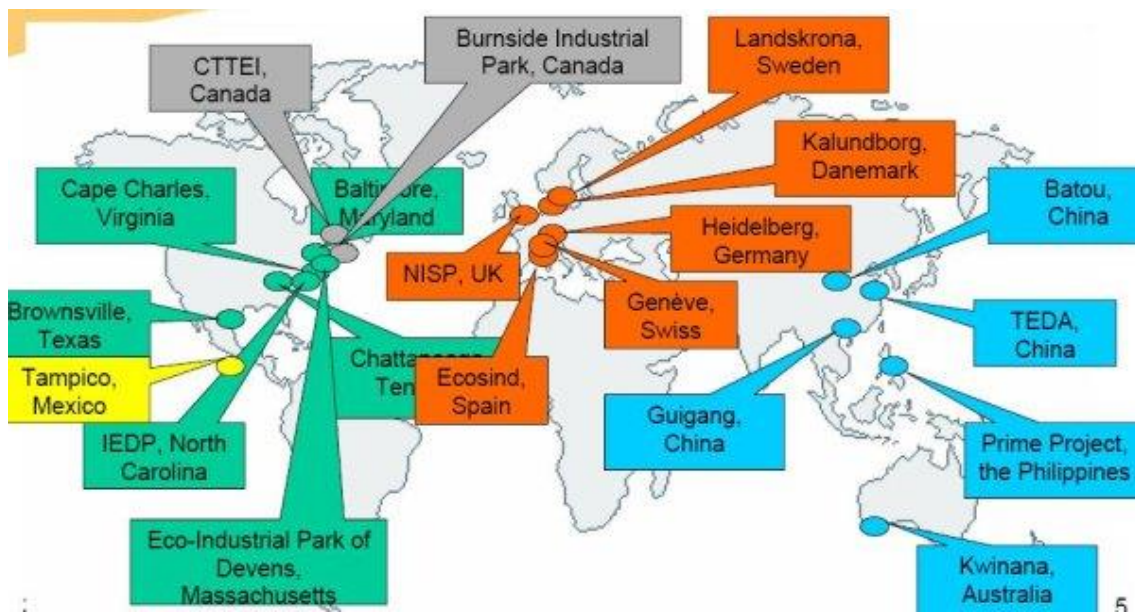
- at the between firm dimension; this worries the modern beneficial interaction (eco-industrial parks), the item life cycle and all activities at the modern part level.

- At the dimension of the firm or the creation units, it is an issue of reconsidering the items and the procedures of production, specifically to diminish the waste (eco-plan for instance).

We will arrange ourselves here at the size of modern advantageous interaction, with the eco-industrial parks.

The idea of "eco-industrial park" was first depicted amid an introduction to the United Nations Conference on Environment and Development in Rio de Janeiro in 1992 and is made known, in 1993, by the United States Environmental Protection Agency Since at that point, a progression of activities and ventures have risen in created and creating nations.

Figure 1. Historical development of industrial ecology in the world



Source :UNIDO. **Implementation Handbook for eco-industrial parks. Comprehensive Plus Sustainable Industrial Development. 2017, 50 p.**

Figure 1 speaks to just the primary ventures of eco-modern improvement. Eco-modern parks and their importance as a use of the idea of practical improvement:

- An eco-modern park is a network of organizations that collaborate with one another and with the neighborhood network to successfully share assets (data, materials, water, vitality, foundation and common territory), prompting financial additions and natural and HR development evenhanded for organizations and the nearby network.

- An eco-industrial park is a modern arrangement of arranged trades of materials and vitality, which tries to lessen the utilization of vitality and crude materials, diminish the creation of waste and fabricate financial, environmental and social reasonable Robert U. Ayres outlined these definitions in 1995 by observing the eco-industry park as a mechanical biological system. Characterized by Frosch and Gallopoulos in 1989, the industrial biological community is considered as an incorporated framework in which vitality and material utilization is streamlined and where the effluents of one procedure can fill in as crude materials for another procedure.

An eco-modern park is like a regular industrial park as in it is an unforeseen property containing various contractual workers sharing a typical property/the board, framework, administrations and frequently an affiliation

Members The advancement of the eco-industrial way to deal with park improvement is the use of standards of modern nature. Illumination that the thought of "park" ought to be seen just in the feeling of a topographically limited region. An eco-modern park may well incorporate the neighboring agglomeration or an organization situated at an extraordinary separation, in the event that it is the just a single to most likely valorize an uncommon waste that it is difficult to treat on the spot, for instance.

The idea of "eco-modern park" covers distinctive substances as far as the use of industrial nature. Marian Chertow has built a classification identified with these sorts of uses. It recognizes five sorts of parks and eco-industrial systems:

- Type 1: conventional reusing frameworks for end-of-life items that include an accumulation and deals interface (family unit squander reusing frameworks, Salvation Army, and so forth.)

- Type 2: framework for circling material and vitality streams inside an industrial facility or an organization (Ex: Yprema organization in France)

- Type 3: framework for circling material and vitality streams in a characterized region. Organizations and other unforeseen associations can trade data and administrations, for example, transport framework or promoting. They may incorporate different accomplices "past the fence". These zones can be new improvements or "re-advancements" in other words from existing areas. (Ex: Londonderry, United Kingdom).

- Type 4: arrangement of trades of materials and vitality between nearby yet non-neighboring organizations. Trades of this sort 4 interface officially existing organizations that can profit by existing water, vitality and material streams and furthermore offer the chance to make new organizations dependent on regular administration needs and sufficiency of participants and leavers. (Precedent: Kalundborg, Denmark has appeared in Figure 1).

- Type 5: arrangement of trade of materials and vitality between organizations composed "for all intents and purposes" at the size of an area (Ex: North Carolina, Tampico). Despite the fact that this still concerns firms in a given area, type 5 exchange incorporates a provincial monetary network in which the potential for recognizing result exchange increments essentially with the quantity of organizations partaking in it. This kind of association is once in a while called, not without discussion, "virtual eco-modern park".

An eco-industrial park can be created in two different ways: it very well may be created without any preparation to structure, or it tends to be changed into green businesses by applying asset proficiency and other manageability measures in the current modern zone. In the two cases, a methodical methodology ought to be made to distinguish and actualize specialized open doors that mean to streamline asset usage and diminish waste and discharges.

The World Bank Climate Group builds up an orderly way to deal with distinguishing eco-industrial stops and adding to the extension of its appropriateness. In this methodology, applications that might be received in the change to eco-industrial park show are gathered into three fundamental gatherings. These are (i) asset proficient and clean generation (ii) circularity and (iii) clean vitality applications.

Asset Efficient and Clean Production: The most normally utilized application for changing over new modern parks and customary industrial zones into eco-modern parks is asset effective and clean generation applications. The most notable use of this gathering is modern beneficial interaction.

Circularity: Circulation at the modern dimension is done by waste and water the board. For the assurance and assessment of water assets, the combination of water accumulation frameworks into modern parks or the cleaning of surface regions by utilizing suitable dimensions of wastewater in certain contamination load, the cleaning of basic zones and the utilization for water system reasons for existing are instances of the use of water based circularity. Squander based circularity is accomplished by reusing of waste inside the waste

pecking order, reusing and reusing of profitable substances. Waste and water circularity diminishes asset reliance in ventures and lessens working expenses.

Clean Energy: Most of the vitality utilized in eco-modern parks is given from sustainable clean vitality sources, adding to ozone depleting substance discharges and lessening reliance on petroleum products while in the meantime avoiding potential risk against the expansion in fuel costs. Along these lines, it adds to build the intensity.

There are numerous precedents for nations that utilization eco-industrial stops essentially in economies, which have appeared as follows. For instance, China, etc.

Together with globalization, industrial zones have begun to be acknowledged everywhere throughout the world and these modern bunches have turned into the building squares of quick mechanical improvement particularly in China. In the course of the most recent two decades, numerous industrial zones have been created. In 1984, the Chinese Government affirmed 14 seaside urban areas as an advancement zone to quicken the section of remote capital into the nation. From that point forward, huge, little modern zones and cutting edge parks have been set up all through China. As indicated by 2008 figures, there are 6.866 industrial zones in China. Industrial zones have turned into the most vital piece of Chinese economy with fare arranged. These locales pulling in remote financial specialists have quickened the passage of new segments and advancements into the nation. With the presentation of outside financial specialists, the Chinese government has embraced universal standards as far as ecological administration techniques.

With this monetary development in China, modern parks have additionally had results that unfavorably influence nature, human wellbeing and security. In a portion of these industrial zones; high contamination rates and thusly rising treatment costs, expanded security issues and wellbeing costs, loss of biodiversity and expanding difficulties for beach front administration and so forth issues have emerged. Thinking about the present deficiency of characteristic assets, the effect of industrial zones had progressively serious outcomes.

Thinking about the negative effects of industrial zones on the earth and the social condition, and the way that modern zones are the most essential building squares of China's

monetary advancement, it was unavoidable that the idea of Eco-industrial parks ought to be adjusted to the modern zones in China as an imaginative instrument. In this specific situation, the Ministry of Environmental Protection of China (MEP), in 2000, Eco-modern parks tasks can be connected, which is dynamic in the 30 industrial zones were chosen (*Zhang, 2008*).

3. Modern models of the organization and functioning of eco-industrial parks

3.1. Forms of organization of modern eco-industrial parks

In the 21st century, solid development in modern creation and utilization started in creating nations. The EU today gives extraordinary consideration to endeavors to assemble a "manageable" economy, because of the frail asset base of European nations and high vitality costs. Showing up during the 1990s, beginning from the 2000s, the issue of industrial environment started to involve increasingly more space in the modern parks of the new kind. Today, the principle pattern in the advancement of mechanical stops in Europe is the development of eco-modern parks. The eco-industrial park is true and is a modern park, the administration association of which does all things required to limit ecological mischief from generation: the common utilization of assets and foundation, which permits to diminish unsafe discharges and makes it conceivable to put earth cordial enterprises in urban communities. Government arrangements went for expanding the quantity of naturally benevolent enterprises prompted an expansion in the expense of working together in the urban region, which prompted the withdrawal of mechanical limit outside the urban communities, where the expense of land, work, and the nearness of undeveloped spaces are less expensive - this has turned out to be beneficial as a business and the European "environmental campaign".

Over the most recent couple of decades, Eco-Industrial Parks have been perceived as a far reaching and successful device to address the difficulties of supportable industrial or industrial improvement under the Sustainable Development Goals. This report, arranged by

UNIDO, DB Group and GIZ, means to make a typical structure for Eco-Industrial Parks and to control approach producers and experts and to uncover the essential criteria for open and private segment to make financial, social and ecologically supportable eco-modern parks. appears. The point of the examination can be partitioned into three fundamental headings:

(I) Supporting applicable partners for the change to Eco-Industrial Parks and the establishment of Eco-Industrial Park,

(ii) Promote the significance and consciousness of Eco-Industrial Parks and urge them to change,

(iii) Establish worldwide benchmarks that will add to expanding the execution, maintainability and comprehensiveness of the modern part.

In the report, the point and general methodology of the investigations, Eco-Industrial Park idea and applications, to make a way to deal with characterize the execution necessities for Eco-Industrial Parks, criteria for Eco-Industrial Parks and eco-modern park precedents are incorporated.

Idea of Eco-Industrial Parks

Industrial parks are named with various names, for example, modern regions, modern zones, modern speculation regions, unique monetary zones, mechanical passageways and numerous definitions. In any case, numerous universal associations that work in these regions allude to the accompanying definition by Lowe (1997):

Eco-Industrial Park (EIP) is the general name of the network of generation and administration endeavors which are joined in a typical zone. Part organizations expect to build their ecological, monetary and social execution by teaming up in asset use and the executives of natural zones. Consequently, this gathering of organizations intends to pick up a more noteworthy income than the whole of the advantages that ventures can understand by upgrading their execution with a typical administration approach.

Extent of Eco-Industrial Parking Frame

The EEP Framework built up inside the extent of the investigation is set up from a thorough perspective and prescribes the selection of a delicate viewpoint for the application

considering the decent variety of the modern zones and the authoritative structures where they work. The extent of the produced edge is as per the following:

- Industrial zones in cutting edge, transitional and creating nations,
- Current industrial zones and arranged modern zones,
- Any industrial zone with various attributes (eg measure/territory, innovative improvement level and the power of existing participation),
- Leather preparing, material creation, fabricating, compound generation, etc. every modern segment (considering explicit national consistence necessities).

Prerequisites for Eco-Industrial Parks

All together for a sorted out industrial zone/modern park to be delegated tak Eco-Industrial Park o, there is a requirement for various execution necessities that attention on key parts and the board of eco-modern parks. While applying a system shaped of execution prerequisites for three distinct zones, natural, financial and social, to the current modern zones, the accompanying focuses ought to be considered:

- Performance prerequisites should draw the most minimal acknowledged reference line on a universal reason for the desires for a worldwide EEP; be that as it may, local conditions and benchmarks are considered in the execution stage.

- Performance necessities have two sorts of pointers for every one of the classifications referenced above, including essential markers and execution markers. A modern zone must meet the desires for these two marker types so as to be delegated EEP.

1-Requirements for Compliance with National and Regional Legislation

EEPs and substances working in the association must consent to all appropriate national and territorial laws, guidelines and benchmarks. On the off chance that the national EEP prerequisites don't meet global desires, EEPs ought to endeavor to be lined up with pertinent universal industrial practices. In this report; Based on the experience picked up from the tasks of reasonable industrial zones did worldwide by UNIDO, World Bank Group and German International Cooperation Agency (GIZ), the national and provincial enactment that ought to

be good are under the four headings as administrative, natural, social and financial it is ordered.

2-Parking Management: Performance Requirements and Performance Indicators

The fundamental target of the execution prerequisites for eco-industrial stopping the board is to set up an autonomous and approved park the executives unit. After the foundation stage is finished, this unit completes exercises to create eco-industrial park economically and to draw in interests in the venture, park and to give socially adequate and alluring working conditions inside the recreation center. The applicable execution necessities can be condensed as pursues:

- Administrative administrations, for example, the presence of a recreation center administration unit and the capacity of the recreation center to give regular foundations and administrations to its ventures,
- Monitoring and hazard the board exercises, for example, the presence of a framework for checking exhibitions and dangers and a sound learning of existing guidelines and principles,
- Planning and zoning for the presence or advancement of a ground breaking strategy

3-Environment: Performance Requirements and Performance Indicators

A modern zone needs to forestall or limit the hurtful impacts it has on the earth so as to be named EEP. The primary goal of natural execution necessities is to guarantee that an EEP on ecological administration meets the desires for execution. The significant execution necessities markers can be outlined as pursues:

- Presence of ecological and vitality the executives frameworks (ISO 14001, ISO 50001 and so on.) as far as the board and checking,
- The presence of a working system to decide open doors for vitality and warmth trade systems with vitality proficient procedures for vitality productive foundations and high vitality utilization ventures,
- the presence of frameworks to expand water investment funds and reuse in water,

- Environmental appraisal and biological community administrations with various measures and destinations on ozone depleting substance outflows and contamination counteractive action regarding environmental change and condition.

Eco-industrial stopping execution markers for the recreation center administration are condensed as pursues:

- as far as the board and observing: 40% of natural and vitality the executives frameworks and detailing undertakings

- as far as vitality utilization: Measurement and observing frameworks for vitality utilization at the recreation center/endeavor level are up to 40% of the all out utilization; that the utilization of inexhaustible and clean vitality is equivalent to or more noteworthy than the national normal; most extreme carbon thickness focuses for stopping and ventures (kg CO₂e/kWh); Maximum vitality thickness targets per unit of creation for parks and undertakings (kWh/\$ turnover).

- as far as water utilization: the absolute water request of the recreation center does not negatively affect neighborhood water assets/nearby individuals; the modern wastewater treated by natural measures relates to 95% of the all out wastewater; half re-utilization of industrial waste water.

- as far as waste and material use; a re-utilization of strong waste from the task by 20% of the all out waste; the rate (100%) of the work that putting away/discarding the poisonous and unsafe waste fittingly; under half of complete waste to landfill.

- as far as environmental change and condition; least level of the territory allotted to the local vegetation (5% of the open zone); working rate (half) with waste counteractive action and emanation decrease methodology; among the most contaminating ventures (30%).

4-Social Performance Requirements

Eco-Industrial Parks are required to incorporate great practices as far as the executives structure and ecological criteria just as social administration. In this sense, tyke work, sex balance, working conditions, settlers and social foundation (toilets, cafeterias, tyke care administrations and restorative offices and so on.) are secured by social execution criteria.

It is stressed that gathering the social execution necessities at the global models by the EEP the executives will positively affect the workforce and the general network, making an increasingly legitimate and proficient workplace by decreasing social dangers.

In the reports, the key issues for improving social execution in an EEP are recorded as pursues: Management frameworks for significant social, word related wellbeing and security (OH and S) and objections strategies; improving working conditions and working conditions for laborers in modern parks; working hours, working conditions, estimating and rest days as per national and sectoral standards; fundamental social foundation for industrial parks or its environment; advancement of HR, professional preparing and limit building; universal experience and support of organizations in network exercises; expanding correspondence and mindfulness inside the network.

5-Economic Performance Requirements

EEPs are an imperative device that administrations use to advance modern generation and make included an incentive in the economy. In the arranging stage; The EEP framework ought to be intended to react to advertise request. This plan ought to draw in ventures that desire to put resources into the locale. EEPs can likewise give benefits as far as financial esteem and intensity. For instance; global genuine precedents; It demonstrates that spotless creation and vitality proficiency usage give low monetary capital, low capital generation and vitality effectiveness applications with momentary reimbursement process. Noteworthy financial contemplations for EEPs in the report are as per the following:

Business creation: Industrial parks can make genuine work. This objective; neighborhood work targets can be accomplished through long haul business ensure/business affirmation in accordance with the arrangement of chances to improve the expert abilities of representatives and long haul or perpetual business contracts. The advancement and relations of nearby organizations and SMEs: An EEP gives chances to the foundation of SMEs that can give administrations to other (bigger) organizations working in the district and give them included esteem. EEPs can likewise make monetary cooperative energies by working

together with park the executives and nearby organizations that are the provider of endeavors in the recreation center.

Esteem Added Creation: Integrating the board forms with practical, vitality productive advancements can give upper hand by comprehension and arranging the sorts and dimensions of market requests. Since EEPs offer lower hazard and venture expenses to organizations (eg through the accessibility and arrangement of important framework, open and private administrations), they are more appealing than different parks.

Figure 2. Type of Eco-Industrial Parks



Urban 3%, Combined 17%, Industrial 80%

Source: Mainstreaming Eco-Industrial Parks by Etienne Kechichian and Mi Hoon Jeong published in July 2016

The biggest modern stops in the U.S.A. were clearly grown; However, this propensity can not proceed. A few organizations presently need to have their own harvests. Little and medium-sized firms are intending to rent land, yet the plant is attempting to acquire development credits. This pattern could have been made by EIP.

The private area assumes an imperative job in openly created parks. Privately owned businesses are tenants and are regularly the overseers of modern parks. Land obtaining in creating territories is an intricate procedure for joining arranging and possibility studies and venture methodology. Private engineers frequently fill in as specialists on social activities.

The present network industry will profit by a ground-breaking nearby economy. The nearness of neighborhood firms can likewise build the EIP.

The end or combination of administrative advancement financing programs (and different effects of government scaling back in the mid-90s) will make open private organizations significantly progressively essential in EIP ventures. For instance, open landowners may just enter undertakings other than counseling with themselves. Taking an interest in the venture can add to creating, adding to numerous normal assets and private speculation.

Financing for any modern park requires cash:

- The underlying task arranging, prompting site plan idea,
- At least two phases of natural and structural and designing work,
- Land securing,
- Site improvement,
- Construction costs, and
- Project working expenses.

A portion of these costs will be superior to an EIP (for instance, the ecological structure process coordinated in task arranging and arranging). Also, the improvement of a more extensive item sharing system should be financed by the formation of a solid setting that different projects requirement for the EIP.

The interest in modern stops during the 1990s will in general be moderately preservationist. The monetary network requires a solid show of budgetary execution of property ventures. Financial specialists additionally need to offer the best systems for lessening dangers.

While new wellsprings of financing may seem to pull in the drawback of inability, subsidizing for administrative monetary advancement is once in a while observed as the decrease in government and the ascent in spending adjusts. Numerous projects have been united and cash has been dispersed to government governments as spending volumes.

The principle goals of eco-industrial park the executives structures can be condensed as pursues:

- Make land residency the board and coordination of administration conveyance to inhabitant organizations, especially most advancing income and modern cooperative energies as basic framework and administrations, just as different types of industrial collaborations.
- Play a conclusive job as an innovator in the plan and checking of monetary, social and natural execution for the recreation center exhibitions in accordance with PEI benchmarks.
- Provide an interface between occupant organizations and experts. Can fill in as facilitator, arbitrator or go between.

Challenges for Eco-Industrial or Green Parks

As coordinated into frameworks assigned as any new idea, new modern parks face various complexities that incorporate numerous structure, the board and basic leadership regions. Thus, accomplishment in creating nations, for example, India will depend essentially on the capacity to recognize challenges and kill street barrels that may require a change to a national/state approach or neighborhood building rules.

We can clarify the methodology for anticipating the instance of ALEAP (The Association of Lady Entrepreneurs of Andhra Pradesh was established in 1933) A well ordered way to deal with the readiness of the A-GRIP Field Master Plan is given in Figure 3. At various phases of task arrangement, discussions with partners and related procedures are accounted for in the above area.

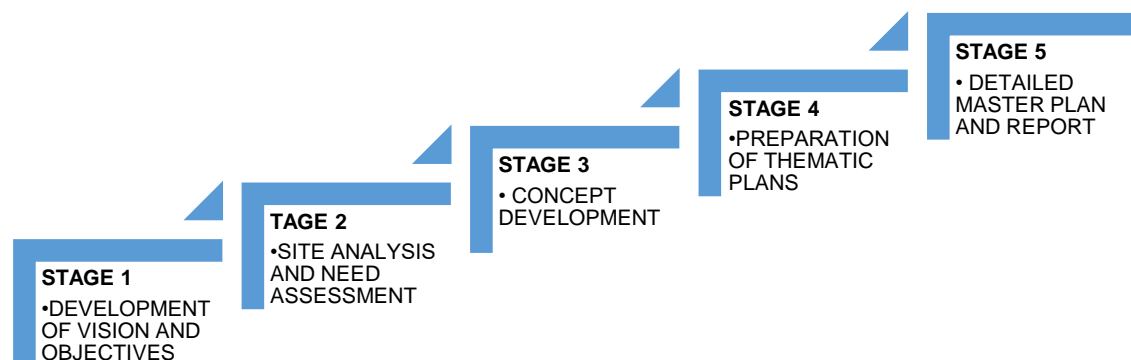


Figure 3. Methodology for planning [Source: Planning for Sustainable Industrial Parks in June 2015 <http://seip.urban-industrial.in>].

There are fundamental five stages that referenced beneath:

Stage 1: Development of vision and targets

Then, the start of the venture, ALEAP has empowered itself for economical advancement

Through the accompanying vision:

"Green Industrial Park, Nandigama, is a model Green Park that uses best in class innovation for female business people and uses front line advances, including clean advances, sustainable power source advances, natural innovation, and proficient in general foundation."

Because of impermanent time and strong procedures, this vision has been additionally improved:

"Reinforcing ladies by making secure, steady and redundant business enterprise situations that coordinate supportability, aggregate prosperity, development and nearby culture".

Stage 2: Site Analysis and Needs Assessment

Pre-monsoons and rainstorm in the encompassing territory utilize diverse seasons, including transport, transport and transport. Site configuration, site structure, geology, waste, surface water, wind, radiation and precipitation have been assessed in detail.

A study was led to comprehend the necessities and requirements of ladies business people who need to put resources into A-GRIP. Casual gatherings were likewise held with inhabitants of encompassing towns. Primer information examination, field perceptions and connection with partners, socioeconomics, water request, traffic, etc.

Stage 3: Concept improvement

A coordinated arranging way to deal with the readiness of a domain neighborly site all-inclusive strategy for A-GRIP was presented. The objective was not to legitimize the physical

arranging standards but rather to positively affect the proficiency and viability of the industrial park as a rule.

At first, a theoretical arrangement was created by advisors to achieve the most extreme number of fields inside the region. Be that as it may, after the examination, the idea has been changed by the characteristic incline that the base territory separates and common waste will likewise be secured.

The ways were diverted to the diagram of the site. A chain of command of person on foot, transport and access to support has been made to limit clashes between various kinds of transport and the sorts of transport. The idea of green regions was to make a system of green zones related with stormwater the board and arranging. A second green street organize has been set up to coordinate greenery portability. Parking spots were focused to guarantee blockage. Establishing groups are put in key areas to fill in as business, network, and network.

Stage 4: Preparation of topical layers

The thoughts were translated into physical structure by after models. A standard of topical plans were advanced explicitly: Land use plan, Zoning plan, Basic foundation plan, Technical framework plan, Environmental foundation plan (checking hurricane water and waste water supervision) and Social framework plan.

Stage 5: Detailed all-inclusive strategy and report

A nitty gritty guide plan has been readied, which is an extensive record key parts of the report are referenced beneath:

- A-GRIP-audit - the all out territory of the site, the normal enterprises, the normal number, generation cost, anticipated business, directed speculations, etc.
- Violation of land use.
- Identification of modern zones/zones for waste kinds and relative ecological effects the readiness of the allowed enterprises and the constrained business.
- Main framework (street arrange, power, water supply, gas, ecological clean transportation, security, fencing, fire and catastrophe the executives, and so forth.).

- Technical foundation (green plant structures, sustainable power source/vitality effectiveness arrangements, business focus, distribution centers, preparing focus, plan focus, hatchery, and so forth.).
- Environmental Infrastructure (marine seepage, sewerage/wastewater transportation, wastewater treatment and transfer, strong waste administration offices, green/open regions/scenes, ecological checking, and so forth.).
- Social framework (sustenance and drinking water offices, recreational offices, sex explicit foundation - arrangements for ladies specialists, handicapped individuals, visitor houses, open toilets, wellbeing focus and so forth.)
- Relevant measures, criteria, rules, systems, etc. (Ecological contemplations/criteria, "green" criteria, natural proposals, and so on.)
- Planned and layered layers on the required scale.

3.2. Mechanisms of eco-industrial parks

Regarding the readiness of a meaning of the eco-industrial park, it is favorable to recognize two methodologies. The primary methodology centers around a gathering of organizations that team up with one another and the network on the viable sharing of assets. A sharing of assets that will prompt a monetary and natural advantage, just as a superior utilization of HR. The second methodology concentrates more on a modern framework with an arranged trade of material and vitality that tries to lessen the utilization of vitality and crude materials. The objective is to manufacture supportable networks of monetary, ecological and social significance. In spite of the fact that the two methodologies are the equivalent, the distinction in the two methodologies in the second methodology's solid spotlight on material and vitality streams, while the main methodology concentrates more on the authoritative and social procedures in and around the network.

The division of the eco-modern parks into the two methodologies pursues normally from the different issues looked by industrial parks. In this way, the solid spotlight on material and vitality streams will be founded on the "work of art" modern complex, which depends on an interrelated overwhelming industry. The industrial buildings normally situate in closeness to one another, and in the meantime likewise near great foundation or metal offices. The methodology, where there is a solid spotlight on the authoritative and social procedures in and around the network, depends on the issues identified with industrial parks comprising of little and medium-sized ventures, ie a blended modern condition. In contrast to the exemplary industrial complex, the test for the blended modern park comprises in planning numerous little streams of material and vitality.

Generally, the modern complex has been looked with an interest for creating instruments that would lessen asset utilization and too high a dimension of discharges. The individual organizations have either collaborated inside, or among a few organizations, to trade vitality, water or material. The coordinated effort more often than not grows immediately, and normally has extraordinary monetary hugeness for the organizations included. The mechanical advantageous interaction that happens in Kalundborg is a case of the advancement of such participation.

The blossoming of the blended modern parks must be found in before requests for a cleaner urban condition. There was a division of the city, which implied that the dirtying business was put in modern parks where the contamination could be contained, and the business' longing for extension could be suited. These industrial parks are the trailblazer of the present blended modern parks, which are described by being worked around numerous little or medium-sized organizations. The organizations have a neighborhood or territorial establishment, yet they appreciate a constrained favorable position of one another's nearness. Moreover, it is conceivable to discover extraordinary excess between the organizations, for instance it will be conceivable to discover additionally printing organizations inside a recreation center and not only a solitary one.

The contrast between the two industrial park types can be appeared Table 1. From this it gives the idea that the industrial edifices, because of a more prominent potential for procedure mix, have leeway over the blended industry park by building up a supportable methodology. Furthermore, the nearby coupling of material and vitality systems has leverage over the blended industrial park's inexactly coupled system, as this is impressively less demanding to sort out. Notwithstanding, the blended modern park, with its numerous little and medium-sized organizations, likewise has its focal points over the industrial complex. The very actuality that there are numerous little various organizations is a quality in light of the fact that the potential for creating thoughts is expanding. The improvement of such thoughts, in any case, requires a productive systems administration organization, giving time for aggregate learning and advancement.

The significance of the blended modern stops in the writing is brought in connection down to the industrial edifices. This has basically happened on the grounds that there has been a too clear spotlight on the Kalundborg precedent as the model for the eco-industrial parks. Be that as it may, the significance of the blended eco-industrial parks is significantly more essential, particularly due to their specialization in waste accumulation, taking care of and reusing, yet additionally in view of their high recurrence. Similarly, the blended modern parks have figured out how to shape industrial bunch collaboration, which has given various upper hands.

As appeared Table 1, for blended industrial parks, they likewise need a planning body to facilitate advantageous interaction in the meantime. In the accompanying area, an audit of the planning body's noteworthiness for the foundation and task of the industrial advantageous interaction will in this way be inspected.

Table 1. Differences between traditional industrial complexes and mixed industrial parks

	Industrial complex	Mixed industrial park
Material or energy network	Close connected	Loosely connected

Process integration	Widespread. Internally focused with great potential	Limited. Externally focused with marginal potential
Organization	Decentralization (Outsourcing)	Cluster cooperation and coordinating bodies

Source: Den industriële symbioses coördinerende organ by Martin Freiberg and project period is August 24, 2007 - March 25, 2008

Purposes of Eco-Industrial Parks

Deciphering the idea of EIP into national approaches creates open doors just as challenges. Eco-industrial parks include commitments from different spaces and partners, speaking to an expansive range of interests. The issues of interconnected eco-modern parks (eg improved asset effectiveness, industrial cooperative energies, armada wide administrations and framework, productive armada the executives structures) are frequently not outstanding. open division chiefs. Mindfulness, information and abilities on these subjects are fundamental to improve the examination, change and execution of EIP approaches at all dimensions. Governments will assume a urgent job in making proper economic situations, strategy and administrative systems and specialized rules, and in starting learning and investment forms.

EIP approaches can profit the economy by empowering industrial parks and their organizations to wind up more asset proficient and imaginative, by creating and giving access to new advances and empowering the production of new innovations. enterprises and new markets for instance sustainable power source, industry 4.0 (Industrial 4.0 generation advances are accessible for existing mechanization and information trade patterns. Digital physical frameworks, things incorporate the Internet, distributed computing, and visual estimation. Industrial 4.0 is boundless as the fourth modern transformation), squander reusing, green science, bioproducts and the round economy. These financial advantages can thusly bring social advantages, for example, nearby occupation creation, professional stability and better working conditions.

Objectives of Eco-Industrial Parks

The fundamental goals of the EIP strategies can be condensed as pursues:

- Create compelling approach and administrative procedures to help the arranging, improvement and usage of EIPs and related practices for instance, RECP (Africa– EU Renewable Energy Cooperation Program) , park the board, spatial arranging and zoning, administrations and framework to stop scale).
- Facilitate the rise of empowering parameters and auxiliary changes to catch open doors for practical and comprehensive modern improvement through industrial parks rising up out of quickly evolving specialized, financial, natural and social conditions.
- Integrate ecological and social issues into monetary and industrial improvement approaches.

Components of Success

The accomplishment of a modern approach lies in the procedures that underlie it. From chose sources, an outline of the achievement factors and general exhortation to tolerate at the top of the priority list when building up a practical modern arrangement (counting eco-industrial parks) for a nation is given underneath.

- Make an abnormal state, long haul duty: Political help is required for any fruitful approach execution. Most nations take a few years to draft new strategies, and somewhere around a year to modify old ones. Speed ought not outweigh quality when composing strategy intercessions.

- Prioritize arrangement intercessions: Priorities ought to be built up between approach mediations, ideally based on foundational impacts (ie considering criticism impacts), rather than managing a not insignificant rundown of complaints. Where conceivable, it is critical to attempt to create "speedy successes" to empower proceeded with help for the approach procedure.

- Apply multi-partner approaches: Adequate correspondence and preparing of all partners builds the odds of effective usage. EIP's strategies are cross-cutting, so their definition, usage and checking require a high level of between organization participation inside a legislature, yet in addition with the business network and common society gatherings.

- Working with specialists of progress: A change operator is somebody who encourages constructive and powerful procedures of change inside associations through polished skill, individual duty and communication with others. It is basic to work with change specialists in local services and establishments of impact to propel the advancement, mix, and execution of EIP approaches (or any political intercession) to have an effect.

- Integrating approach intercessions: It is desirable over incorporate EIP-related strategy mediations into existing national projects/extends instead of detailing them as a self-sufficient arrangement zone. The advancement and usage of EIP arrangements fuse the possibility that industrial exercises can not be seen independently from other strategy zones (eg vitality, water, money, work and improvement). aptitudes, sectoral activities).

- Recognize advantages, expenses and dangers: To guarantee the accomplishment of supportable modern arrangements, it is essential to comprehend and consistently deal with the dangers, expenses and advantages related with them.

- Managing difficulties in actualizing approaches and their usage: The test of viable administration, arrangement execution and authorization stays in many creating and progress nations . It is along these lines critical to likewise deal with the immediate exercises of speculation, proficiency and strategy usage. Intentional instruments and results (eg green honors, guides, eco-marking) can not work without a practical administrative system. This must be considered in any political methodology, especially with respect to EIPs. This is best, instead of growing new reports and approach guides fundamentally by one office.

- Put set up checking and execution pointers: Constant observing and assessment of approach advancement and usage is expected to guarantee the viability of the measures. Pointers speak to chosen data since they center around territories of key significance for strategy making. They can be utilized both inside by government offices and for correspondence with natives, businesses and different partners. For more subtleties on checking and execution pointers, see segment f of this manual. There can be used many examples for expressing mechanism of EIP's. Izmir Ataturk prepared industrial zone is one of the major and most contemporary organized industrial zones in Turkey and good sample

for explicating performance and results of EIP's. Park Management and Shared Services: Izmir Atatürk OIZ possesses its very own petroleum gas consolidated cycle control plant with 120 MW limit. The OIZ is additionally in charge of the dissemination of residential water. The district has a 75 km long water seepage framework. Monetary Performance: Izmir Ataturk OIZ utilizes 37,500 individuals. About 75% of the organizations trade their items to the European Union. The all out yearly turnover of the organizations is 7.8 billion and the yearly estimation of the organizations is 2.5 billion. The all out yearly import esteem is \$ 1 billion. In IAOIZ, at the organization level, vitality and water productivity upgrades and lower costs will be accomplished. The accompanying 7 vitality investment funds parts are accessible:

- 2.200 MWh/year power sparing by recharging electric engines.
- 16.100 m³ water and 644.000 kWh power sparing and 1 year compensation period with turn around stream washing subsequent to coloring and printing forms in material.
- 5 MWh yearly vitality effectiveness investment funds, 0.2 years recompense period with the foundation of programmed estimation and checking framework for power, petroleum derivative and warm vitality utilization.
- 5000 MWh power reserve funds every year, enhancement of cooling water frameworks in 5 fundamental divisions, evaluated 1.4 years return time.

Ecological Performance: Atatürk OIZ has TS EN ISO 9001 and TS EN ISO 14001 endorsements just as natural and vitality the board units inside its hierarchical structure. The limit of the two areas in the wastewater treatment plant possessed and worked by IAOIZ the executives is 12.000 m³/day and 9.000m³/day. The wastewater treatment plant works past national release measures. The slime is put away in the slop region and exchanged to the ooze drying unit where the water isolated from the muck is come back to the plant. The dried muck is conveyed to the household squander water plant. All organizations must be associated with the waste water treatment plant. There is a 45 km long wastewater line in the district. IAOIZ has a sun oriented photovoltaic plant with an intensity of 500 kW, just as a 120 MW

flammable gas control plant. IAOIZ additionally works an extraordinary organization that performs plastic reusing.

Social Performance: Izmir Atatürk OIZ has 285 understudies and has an extraordinary specialized school with grants. IAOIZ likewise has a professional instructional hub, sports focus, sports focus and nursery. What's more, exercises, for

In arranging and component of EIP's there can be rundown of difficulties related of administrative and the executives of Eco or Green Industrial Parks. They are referenced at beneath:

Administrative related

- Integrated framework configuration forms that are not incorporated into the administrative and affirmation process

- Innovations in the GRP for the most part require a long haul endorsement process by the nearby experts

- Lack of specialized skill in neighborhood governments to assess the activities of IFIs

Arranging and plan

- The absence of specialized aptitude in the examination, actualizes nonstop arranging standards

- The meaning of 'sway zones' or 'catch territories' regarding defilement sources, workforce and accessibility of water is comprehended on a bigger scale, yet most of GIP

Task arranging is constrained to site level

- Interdisciplinary arranging approaches are tedious, common procedure
- Highly propelled capital expenses ought to be created joint framework and normal open doors contrasted with customary improvement

- Costs and reserve funds in EMPs are normally determined from average modern parks

Determination of units that can be utilized because of dangerous industrial waste administration and side-side-effect sharing is troublesome

The executives related

- Networking among GIP organizations regularly takes much time

- Financial boundaries to high-chance ventures made by banks and credit associations for new models
- There is no unmistakable, general vision among inhabitants and park executives
- Lack of mindfulness about economical practices • Lack of GIP the executives experience
- The loss of independence and solace amid the change, formation of individual industrial units

3.3. Role of eco-industrial parks in waste production and its formation and energy efficiency

There are numerous advantages and favorable circumstances of having eco-modern or green parks for society and condition. The fundamental monetary advantages are the formation of immediate and roundabout employments; cost decrease by diminishing the measure of disposed of waste, and the utilization of assets and vitality; and more prominent intensity. Some eco-industrial parks report higher remote direct interest in their parks. Roundabout advantages are increasingly hard to measure however are critical for the long haul financial feasibility of the recreation center and organizations. These can incorporate circuitous employment creation through expertise redesigning and preparing, innovation exchange, positive picture, gradually expanding influence through the use of best practices, and local improvement.

The ecological advantages of eco-modern parks shift incredibly and incorporate diminished dimensions of contamination, increasingly effective utilization of assets (for example, crude materials, water, vitality), conservation and insurance of biodiversity and nature and the decrease, reuse and reusing of waste. What's more, better administration of compound and unsafe substances in an eco-modern park can bring critical natural advantages.

The most essential field of utilization of industrial nature which creates as an interdisciplinary ecological and financial methodology dependent on the collaboration among modern and biological condition is one eco-modern parks (EIP).

EIPs are the utilization of mechanical biology idea in modern zones and are the industrial regions with high vitality proficiency and vitality effectiveness by limiting waste creation and natural effects.

EIPs target financial, ecological and social advantages. In the vision, there are natural, monetary and social additions identified with material and vitality stream.

The point is to improve the financial execution of organizations while lessening ecological effects and giving social advancement.

Advantages for industry:

- Material, vitality effectiveness, squander recuperation, cost sharing (shared waste administration, preparing, crisis groups, natural data frameworks, other help administrations)

- Reduced generation costs
- Reduction in water and vitality use,
- Reduction of crude material use,
- Decrease underway info costs,
- Reduced waste and discharge costs,
- Increased efficiency,
- Opportunity to create focused items,
- New item and market advancement.

Just as, advantage for condition is water the board, asset usage, ecological administration strategies and innovations diminish natural weight.

EIP has numerous advantages for society as well. They are:

- It is a ground-breaking monetary improvement apparatus for the network,
- More appealing condition,
- Creation of new employments in clean modern offices.

There are frequently circumstances when misfortunes and surpluses of assets, considered as waste for one member of the eco-modern park, can be utilized as a wellspring of significant material or vitality assets for another. Be that as it may, so as to associate these members with one another and help with building a fitting innovative chain, this procedure includes generation and administration exercises went for decreasing misfortunes so as to create sustainable power sources and recuperate materials.

The upsides of utilizing the administration way to deal with structure the vitality supply of the eco-modern park is that "vitality as a circle of human monetary movement went for changing, circulating and utilizing vitality assets of numerous types, for some nations of the world, including Russia, is key industry in financial, social and political terms. " Currently, the undertaking of expanding the utilization of the offer of inexhaustible assets in the vitality division is going to the fore, and eco-industrial parks open up wide prospects toward this path.

A case of the fruitful arrangement of administrations for the association of waste into monetary dissemination as a wellspring of sustainable power source assets was shown by the gathering of ecological organizations Evolution of Biogas Systems. The primary movement of the gathering of organizations is "coordinated arrangement of natural waste transfer issues. As an extra preparing item, biomethane is created, which is utilized by different enterprises to help innovative procedures, warming and power age".

In the event that the members of the eco-industrial park are endeavors of the agro-modern complex spend significant time in creature cultivation, poultry cultivating or plant developing, just as chilly storerooms, meat and dairy, oil and fat, liquor, bottling works and other comparable ventures, the masters of the gathering of natural organizations "Advancement of Biogas Systems" give association administrations handling of natural waste produced in industrial procedures to deliver biogas with the end goal of its consequent use is as a wellspring of vitality assets for the members of the eco-modern park. The regional nearness of the members in the system of the eco-industry park enables us to make this procedure as productive as could be allowed.

In the meantime, a wide range of foundation assume an essential job: building, utilities, transport and coordinations, data and correspondence, and managerial and money related. In specific cases, the impact can be acquired by utilizing just a single kind of foundation, while in others it is important to utilize every one of its components.

The designing and shared framework incorporates a lot of items and frameworks for the supply of vitality and different sorts of utility assets to members in the eco-industrial park, for building support, and for waste reusing.

Transport and coordinations framework is a lot of articles and frameworks went for arranging the transportation and capacity of crude materials, materials, completed items.

The framework of data and correspondence advances is occupied with adjusting the system and PCs, creating the internet, and guarantees the activity of the media.

The authoritative and monetary foundation gives procedures to overseeing offices in the eco-modern park, including the arrangement and improvement of their material and work force base, just as drawing in outer budgetary assets to grow their exercises.

Among the investigations of reasonable advancement at the dimension of financial elements, territorial and national economies, eco-modern parks are a promising bearing to enhance the utilization of assets while improving the ecological, vitality, monetary and social markers of the domain, which prompts enormous upper hands of these structures.

The procedure of creation and working of eco-modern parks is winding up increasingly more concentrated by mainstream researchers, yet regardless it centers around the general issues of getting the impact of the sharing of an area and framework, while obviously deficient consideration is paid to the nature of the foundation itself.

Expanding the impact is conceivable using the expert capability of associations that give benefits in the system of the advancement of designing and utilities, transport and coordinations, data and correspondence, managerial and monetary framework of eco-industrial parks.

There are three kinds of impacts:

1) ecological and monetary, communicated in diminishing the negative effect on the earth by lessening the measure of waste, releases, emanations, supplanting essential assets with optional assets underway procedures;

2) vitality monetary, showed in the expansion in the volume of sustainable power source assets associated with financial turnover and in expanding the vitality effectiveness of generation forms;

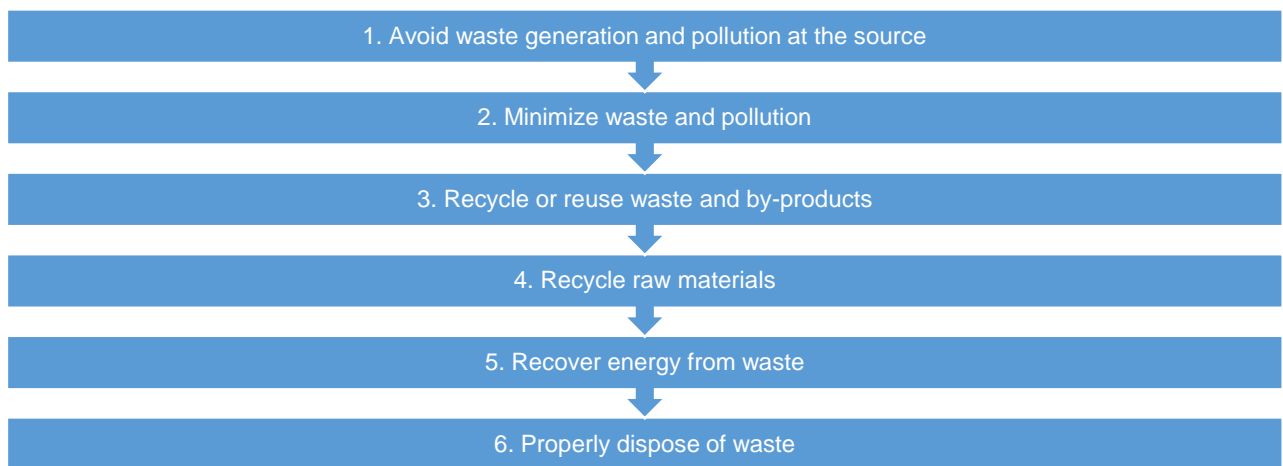
3) financial, communicated in decreasing the negative effect of generation forms on human wellbeing, making all the more cutting edge occupations.

The change from the customary idea of isolated endeavors to an administration way to deal with the improvement of eco-modern parks prompts the way that the majority of the above sorts of impacts are expanding, and there is a collaboration that can't be accomplished in different cases.

The idea of eco-industrial systems, made up of organizations that participate to enhance the utilization of assets, showed up in the mid 1990s, their waste getting to be crude materials for their neighbors. The expression "squander" is then supplanted by that, more in accordance with the monetary reality, of "co-item". The zone of activity of these systems can reach out to an agglomeration, a locale, a pool of exercises, a modern area or a mechanical segment. Eco-modern parks are a specific utilization of this eco-arrange rationale to a particular land territory.

The primary methodology is to improve asset effectiveness in every venture, for instance through the join UNIDO-UNEP (Resource Efficient and Cleaner Production) Renewable Energy Cooperation Program (RECP) program. This program is a preventive and aggregate methodology, the point of which is to improve the proficiency of any modern procedure (UNIDO and UNEP, 2010). Numerous ecological, social and financial advantages have originated from RECPnet, the stage of this program (UNIDO, 2017). This methodology of RECP applies specifically the pecking order of waste administration in Figure 4:

Figure 4. Hierarchy of waste management



Source: www.unido.org

The second methodology is to expand productivity at the industrial park level, where streams of crude materials, vitality and water can be overseen in an aggregate way, through ideas of modern advantageous interaction and modern cooperative energies. Four distinct sorts of modern collaborations can exist inside a industrial park (created from (*Van Beers et al.*, 2007):

- Synergies in sourcing and co-area of providers and clients: Co-area and solidification of organizations in supply and esteem chains (for example makers and providers of crude materials, makers, makers, clients).
- Equipment cooperative energies: Shared utilization of framework, fundamentally for water and vitality (for instance, water collecting and vitality cogeneration).
- Synergies of administrations: Sharing of administrations and exercises between organizations (for instance, joint preparing of staff and sharing of upkeep suppliers).
- Synergies of side-effects and waste trades (cooperative energy industry): Use of waste from an office recently disposed of (in strong, fluid or vaporous structure) by another office to give a valuable side-effect.

As indicated by this definition, industrial beneficial interaction is a particular kind of collaboration, in which "typically separate enterprises embrace an aggregate way to deal with upper hand including the physical trade of crude materials, vitality, water or results" (*Chertow, 2000*).

For understanding the stream of materials, vitality and waste we should make reference to a few things. Specialists should initially comprehend the stream of materials, vitality and waste created inside the parks. They ought to organize focused on materials dependent on quantitative and subjective attributes of materials, vitality and waste created and treated inside modern parks. They likewise need to consolidate important worldwide and national writing on mechanical industry, just as side-side-effect, vitality and waste streams that think about operational documentation. This action is scale, sectoral ruinous, framework administrations, etc. It grasps industrial advantageous interaction systems and applications in a similar industry stops far and wide. Material/squander/vitality sharing chances and praiseworthy investigates detailed in the writing and different sources are exhibited as instances of best practices to urge firms to enter the business' advantageous interaction arrange. Alongside material/squander/vitality trade, different components of industry advantageous interaction methodologies ought to likewise be evaluated.

Specialists need to meeting and complete meetings with some industry partners and chose partners in the district. They should utilize the data that will be gathered at this stage. Modern park administrator accomplices may ask for information accumulation structures to be filled and returned preceding site visit by appropriating the majority of their occupant organizations. Meeting or information gathering procedure can, if essential, be finished with privacy understandings.

4. Perspectives of the formation and development of eco-industrial parks in Azerbaijan

4.1. The main directions of formation and activity of modern industrial zones in Azerbaijan

As far as raising aggressiveness and improving the structure of the economy, business advancement is one of the primary needs of the nation's financial approach. Industrialization

is essential from the financial perspective, yet additionally from various social, logical and social viewpoints, for example, business, pay levels, urbanization, talented workforce, research and research.

Without precedent for the world, oil generation in Baku in 1848 is viewed as the start of industrialization in Azerbaijan. The critical increment in the oil generation in the second 50% of the nineteenth century provoked the industrialization procedure, which thusly brought about the production of oil-related foundation and industrial circles in the nation. From the mid-twentieth century, the industrialization procedure has entered the districts and the establishment of new modern urban communities.

The broad industrialization in Azerbaijan during the 1980s of the only remaining century is associated with the name of national pioneer Heydar Aliyev. Amid this period, countless modern undertakings were built up in the improvement of the business, new industrial fields were made that were not customary for the nation, broadening of industry quickened. In the meantime, the act of sending understudies to the main colleges of the Soviet Union has been generally used to reinforce the business' HR.

Because of the breakdown of the Soviet Union in the primary long stretches of freedom, just as in all segments of the economy, business declined, from one viewpoint the progress from the arranged economy to the market economy and, because of control of the domain of the Republic of Azerbaijan by Armenia, the volume and scope of modern generation forcefully diminished.

With the foundation of political and monetary solidness in the nation, modern creation has been expanding since 1997. Amid the long periods of autonomy, outside interests in the oil and gas division have assumed an essential job in the improvement of the business, the advancement of which has straightforwardly and by implication invigorated the renewal of different ventures. In the meantime, privatization of industrial undertakings was done and the establishment of market economy organizations was built up.

Since 2004, the industrialization rates have expanded in Azerbaijan, the advancement of the provincial business has been distinguished as one of the key needs, deliberate measures

have been taken to address issues of indispensable significance for modern generation, changed from the flammable gas and power shipper to the exporter, the arrangement has been generously improved. Previously, alongside framework ventures, open speculation has been centered around various generation situated activities, a good business venture atmosphere has been made in the nation, state-financed extends under the private segment have been financed by the private area and investment of the state in these tasks has been guaranteed.

Because of the work done, the industry has entered another phase of improvement, as the start of this stage in the Republic of Azerbaijan, 2014 was proclaimed the "Time of Industry". Considering the patterns recognized in the "Azerbaijan 2020: Looking to the Future" Development Concept so as to make Azerbaijan a solid mechanical focus in the area, the State Program for Industrial Development 2015-2020.

The industrialization procedure has quickened because of the fruitful monetary arrangement actualized in Azerbaijan as of late. Execution of the well-thoroughly considered oil and gas technique has added to the development of maintainable budgetary assets of the nation and, thusly, the proficient utilization of its current industrial potential. Therefore, for instance, modern creation expanded by 2.7 occasions in the time of 2004-2014, including generation of development materials by 2.5 occasions, electrical gear creation by 2.1 occasions, metallurgy industry by 2.2 occasions, dress creation by 2.5 occasions.

Alongside the accomplishments in oil, gas, gold and other extractive ventures, industrial enhancement has been extended lately, new generation abilities have been presented, and focused undertakings dependent on current advancements have been made.

Foundation of Sumgayit Technology Park, Aluminum Production Complex and Azerbaijan Steel Production Complex, dispatch of Shipbuilding Plant in Baku, development of gold and copper refineries in Gadabay and Dashkasan, modernization of petrochemical industry in Sumgayit and development of Karbamide Plant, increment of generation limit of Cement Plant in Garadagh and the development of another plant, charging and authorizing of new bond plants in Gazakh, Nakhchivan will make broad open doors for the more profound expansion of non-oil industry at the following stage.

In the past period, new aggressive endeavors were made in the fields of machine-building, gear generation, instrumentation and development materials, which structure the key rings of the non-oil industry in the nation, including tractors and horticultural apparatus in Ganja, vehicles in Nakhchivan, electronic hardware in Mingachevir, sunlight based boards in Sumgait, metal structures in Garadagh, Ceramic tiles creation offices were built up in Hajigabul. In the meantime, critical ventures have been actualized as of late to assemble a solid protection industry, and around 50 new generation regions have been set up here inside a brief timeframe. Notwithstanding military items, resistance industry endeavors have additionally orchestrated generation of non military personnel items, which have been multiplied as of late.

In the advanced period, the foundation of pertinent establishments and the development of their exercises assume an imperative job in quickening the procedure of industrialization in the nation. A precedent is Sumgayit Chemical Industry Park, Balakhani Industrial Park and High-Tech Park alongside Sumgait Technologies Park.

There are on the whole fundamental conditions for the future advancement of industry in Azerbaijan. The reason for these conditions is positive business venture atmosphere, qualified work force potential, institutional potential, sustainable power source and transport foundation, accessibility of crude assets, access to worldwide markets and broad budgetary chances.

The structure of the non-oil division has a particular load in industry. Industry improvement is critical for the advancement of the economy in general. At present 7 industrial parks and 4 industrial block are created in Azerbaijan. These are industrial parks of Sumgayit Chemical Industry, Balakhani, Garadagh, Mingachevir Pirallahi and Neftchala Industrial District. There is a potential to create industrial neighborhoods in many regions of Azerbaijan. Industrial endeavors are as of now accessible in numerous urban areas. While making neighborhoods, it is chosen by dissecting modern creation, foundation and market openings. Making of these areas will likewise add to the improvement of their own economies. It is likewise a state strategy. Framework and concession-bolster plans made in modern parks and

neighborhoods are altogether in accordance with world practice. What's more, the laws and choices embraced at the activity of the President of the nation have made extra motivators for financial specialists to go to the industrial zones. For instance, the Sumgait Chemical Technology Park, the action of remote speculators in the recreation center and the ventures pulled in here. These outcomes likewise bolstered the quick advancement of Sumgait city all in all. Azerbaijan's logical potential, characteristic assets, and transport abilities give quick improvement of the business in the nation. It additionally implies countless employments, significant yields and esteem included chances.

In the most recent years, there was made numerous eco-industrial stops in Azerbaijan. Additionally there are many green undertakings which were made by President of Azerbaijan Republic for improvement of natural and furthermore new kind of zones, stops in Azerbaijan. Just as, in Azerbaijan is intended to make Free Economic Zones. As per World Free and Special Economic Zones Federation (FEMOZA's) leader Juan Torrents, says the production of Free Economic Zones (FEZ) can help pull in remote financial specialists, make new employments, and increment the intensity of the workforce, the nation as well as the locale's economy.

We can partition industrial zones into two gatherings: modern parks and modern squares. Sumgait Chemical Industrial Park LLC, Mingachevir Industrial Park, Garadagh Industrial Park, Pirallahi Industrial Park are the most well known precedents for Azerbaijan Industrial Parks.

The need of monetary approach in the nation is the advancement of the non-oil division. To this end, in accordance with the "Azerbaijan 2020: Looking to the Future" Development Concept, measures are being taken to create imaginative enterprise in the nation, just as make great condition for advancing new sorts of exercises and items, just as exchange and reception of trend setting innovations. Innovation parks and advancement zones are being made for the improvement and utilization of science-concentrated items and advances in Azerbaijan.

Sumgayit Chemical Industrial Park LLC, overseeing association of Sumgayit Chemical Industry Park, subjected to the Ministry of Economy of the Republic of Azerbaijan, knows

about the state's consideration. Industrial parks, which are the biggest in the realm of inventive modern development, offer the most positive business condition for financial specialists. Sumgayit Chemical Industry Park, situated in Sumgayit, 32.5 km from capital Baku and has a gigantic framework, is 505.64 hectares. Under the General Plan of Sumgayit Chemical Industrial Park, the Park Industrial Zone will incorporate agrochemicals, family unit science, building synthetic science, hardware and car industry science, polymers and modern gear creation.

Planned in an advanced style, it will be 21 hectares. In the Social Zone, extraordinary open doors will be made for inhabitants of the Park. There will be a 16-story regulatory building, Exhibition-Conference Complex, Vocational Training Center, Laboratory Building, Workshops, Child Care Center, Indoor and Outdoor Sports Centers, Health Center, Dormitory Complex, and different offices for inhabitants and staff.

The petrochemical business is a necessary piece of the nation's monetary improvement. This division gives specialized arrangements and item connects in designing, development, machine building, car, sustenance and different businesses. Nations that are wealthy in oil and gas assets have lower crude material assets and utilize this favorable position to make suitable industry offices, including technoparks and modern parks.

The fundamental objectives of the SCIP in the South Caucasus' first synthetic industry park:

- Become a concoction and modern focus in the Caucasus and the Middle East;
- To expand the intensity of residential generation;
- Innovative and cutting edge creation in the nation and extension of business in this field;
- Stimulate the advancement of the non-oil segment;
- To be a space for a wide scope of financial specialists;
- Become the center of inventive and innovative creation in the compound business;
- Become the principle provider of substance items in the area;
- The association of innovative work is the making of business hatcheries.

Mingachevir Industrial Park was built up by Decree No. 1077 dated 26 February 2015 by President of the Republic of Azerbaijan Ilham Aliyev.

Motivation behind making of Mingachevir Industrial Park:

- Guarantee manageable advancement of the non-oil division in the nation;
- Associate business in this district;
- Establish aggressively arranged industrial assembling dependent on cutting edge advances;
- Rise the work of individuals underway.

The Mingachevir Industrial Park is a zone that has the fundamental foundation and administration structures for innovative movement to be utilized to produce aggressive items and administrations using present day advances, which causes business people to adequately work and create. The territory of Mingachevir Industrial Park, situated in Mingachevir, is 14.8 hectares. Leader of the Republic of Azerbaijan Mr. Ilham Aliyev visited Mingachevir Industrial Park twice. The establishment of Mingachevir Industrial Park was laid on September 21, 2016 with the support of the President of the Republic of Azerbaijan Mr. Ilham Aliyev. On February 27, 2018 President of the Republic of Azerbaijan Ilham Aliyev and First Lady Mehriban Aliyeva went to the opening service of two ventures on yarn creation at Mingachevir Textile LLC in Mingachevir Industrial Park.

Garadagh Industrial Park was set up by the Decree of President of the Republic of Azerbaijan Mr. Ilham Aliyev dated June 3, 2015, No 1255.

Reason for making Garadagh Industrial Park:

- Confirm feasible improvement of the non-oil division in the nation;
- Supporting business enterprise in this range;
- Establishment of aggressive mechanical generation dependent on new advancements;
- Upturn of the work of people in production.

Garadagh Industrial Park is a milestone region for innovative action and improvement, which is utilized for the association and arrangement of administrations for the aggressiveness of shipbuilding and different enterprises, with the essential foundation and the

board structures for the usage of pioneering action. Garadagh Industrial Park, situated on the 25th kilometer of the Baku-Astara expressway, is situated in the Garadagh locale of Baku, with 72 hectares of land.

Pirallahi Industrial Park was built up by Decree No. 2336 of the President of the Republic of Azerbaijan, dated September 14, 2016, by Ilham Aliyev.

Reason for making Pirallahi Industrial Park:

- To affirm the feasible advancement of non-oil ventures in the country;
- Provision of business enterprise in the industrial segment;
- Organize the production of aggressive and inventive enterprises dependent on trend setting innovations;
- Growth and consolation of the pharmaceutical business;
- Diminish reliance on import of pharmaceutical items;
- Advancement of local generation in addressing the requirements of the populace for the meds;
- Upsurge the work of individuals underway.

Pirallahi Industrial Park is a range that has the vital foundation and administration structures for pioneering exercises to be utilized to advance and work business enterprises, which are utilized for the creation and administration of focused ventures and administrations in the business, including pharmaceuticals by presenting current advances. Pirallahi Industrial Park, situated in Baku, Pirallahi, Samad Vurgun Street, covers 30 hectares of land.

4.2. Future role of Eco-industrial parks in the Azerbaijani economy

"Tamiz Shahar" (Clean City) Project is being implemented in Azerbaijan with the financial support of the World Bank. One of the main goals of the project is to clean up areas in the Absheron area, to meet the requirements of the modern world and to create environmentally friendly new waste recycling facilities.

Within the framework of the Clean City Project, implemented in Azerbaijan on 1 February 2011, concluded with "HPP & PASEKO SA" (Greece-Germany), "INTEGRIS" LLC and Balakhani settlement, Surakhani and Garadagh districts of Baku a topographic desertification survey of solid domestic waste landfills with a total area of 165 hectares and a project for the preparation of 1: 500 scale topographical plans for those territories has been successfully completed.

"Hyundai" will hand over "Tamiz Shahar" Open Joint-Stock Company to direct the use of paper and paper in the offices in 2014. The Azerbaijani representative of the Korean car brand together with Tamiz Shahar LLC has launched an action called "Green Office".

The purpose of the campaign is to reduce paper usage in the company, to encourage employees to use the sheets and make them available for reuse.

"Hyundai" Reduces the use of paper by employees with the "Green Office" campaign and encourages them to be environmentally friendly. The company urges its employees to minimize paper usage and use both sides of the sheets. The unused leaflets will be deposited in the special boxes placed in the office and will be transferred to "Tamiz Shahar" OJSC every month. In turn, "Tamiz Shahar" OJSC allocates the sheets collected in its own factory, prepares and processes it for recycling

"Auto Azerbaijan" marketing manager, Rauf Jahangirov, representative of Hyundai in Azerbaijan, said that the customers will also be informed about the action: "Our customers will be directly involved in this action as we will observe the Green Office rules during the car sales process."

Hyundai considers environmental protection as one of the brand's top priorities. Hyundai is the world's first hydrogen-engine manufacturer in the world to reduce carbon emissions in all its models in recent years.

It should be noted that joining the Clean City project is part of Hyundai's "Handle For Our Future" social responsibility project. The "Future of our Future", which is regularly held annually in Azerbaijan since 2009, is focused on various actual problems. This year, as part of the project, a project called "You are in!" Has been launched to support boarding school

graduates and six interns graduated from the Hyundai official distributor in Azerbaijan, Auto Azerbaijan.

Tamiz Shahar has six different projects nowadays. They are: Waste to Energy Plant, Balakhany Sorting Facility, Rehabilitation Project of Absheron Lakes, Balakhany Industry Park, Washing and Disinfection Stations at Balakhany Landfill, "Tamiz Qala" Waste Sorting Project.

It was decided to build a Waste to Energy Plant under the Comprehensive Action Plan for 2006-2010 on the Development of the Ecological Position in the Republic of Azerbaijan, accepted by the Decree of the President of the Republic of Azerbaijan dated September 28, 2006. As a outcome of discussions with the French corporation Constructions Industrielles de la Méditerranée SA ("CNIM" SA), the tender was seized by the Ministry of Economic Development on the collection of the supplier companionship and was held on December 15, 2008 in the town of Solid domestic waste incineration plant in Baku dealt for the design, construction, hiring and maintenance of the pipeline was contracted. The project was constructed on the foundation of "Design-Build-Operate" based on a turn-key category contract. Therefore, the design, construction and process of the plant was completely carried out via CNIM SA.

The total amount of project and creation works of the plant was 346 million euros. 20-year-old plant, constructed on 20 hectares of terrestrial in Balakhani settlement, with a size of 500,000 tons per year, is predictable to be appointed by CNIM SA 20 years. The Balakhany Waste-to-Energy Plant contains of 2 lines through a capacity of 250,000 tons as well as turbine generating electricity. As a effect of waste burning procedure, it has the power to produce 231.5 million KWh of electricity a year. During the year, the plant as able to reserve electricity to the town with a population of 300,000 community.

President of the Republic of Azerbaijan Mr. Ilham Aliyev laid the basics for the Waste-to-Energy Plant on November 3, 2009 and invested the plant on 19 December 2012. According to the creation capacity, this plant is the major plant in Eastern Europe and CIS. Recognized with the presentation of the Fourth Generation (4G) technology, this modern

factory fully meets the most stringent environmental standards of the European Union. Smoke powder combines with unusual filters and does not make poison to the environment. The weightier and safe dripstone is able to be used in building materials projected for road construction. Additionally, the source of water used for cooling during the boiling of the waste is focused on only to the wastewater after clear-out. Monitoring of plant waste bounds is carried out on a day-to-day basis and is supervised. Previously the creation of the plant, the Environmental Impact Assessment was organized and presented to various public considerations. French "CNIM" S.A. The corporation is one of the important and leading companies in the world. CNIM S.A, with over 50 years of knowledge, has constructed more than 120 such varieties of factories in many countries, specially in Europe. He has great practice as a designer and core contractor of this kind of plant.

High level of political stability, economic development and international image of Azerbaijan reflected in the first European Games in Baku. One of the biggest events that took place in 2015 was the race. The main arenas of several sports, the opening and closing ceremonies of the games - the residents and guests of the Olympic Stadium were amazed at the beauty of the surrounding areas besides the stadium itself. Beautiful lakes, boulevards, parks, green areas, outdoor sports grounds, children's playgrounds, etc. This territory was considered to be an ecological catastrophe just 1 year ago.

The State Program on the Socio-Economic Development of the City of Baku and its Departments for 2014-2016, approved by President Ilham Aliyev's Order on January 17, 2014, and Additional Measures to Improve, Protect and Use the Ecological Situation of Lake Boyukshor Everything has changed in the area with the work done in accordance with the Decree of 26 December 2013. The Tamiz Shahar JSC transferred the first phase of the project in May 2015 with the coordination of the Ministry of Economy and Industry. The opening ceremony of the boulevard and park here also made Mr. President and his spouse. (Rehabilitation Project of Absheron Lakes)

In the short time, Boyukshor Lake and its coast have become a recreational zone in the ecological zone. The result is half of the plan. The Bigshor Lake complex reconstruction

project consists of two parts. The Boyukshor lake has been divided into two sections with a length of 1,570 meters in the project area for the implementation of the initial stage and isolation of the project area. This item will be the basis of the 8-line highway that will connect Ziya Bunyadov Avenue and Balakhani Highway in the future. At the next stage of the project, the other side of the lake will be cleaned.

On October 19, 2016, President Ilham Aliyev attended the opening of enterprises and greenhouse complexes completed at the KARVAN-L EKO industrial park in Agstafa.

"KARVAN-L EKO" is a member of KARVAN-L group of companies and has a total area of 50 hectares in Agstafa, a large industrial park where production and processing facilities are established and united.

The activity of "KARVAN-L EKO" is entirely in line with the goals and objectives of the "State Program on the Socio-Economic Development of the Regions of the Republic of Azerbaijan" approved by President Ilham Aliyev. In 2016, President Ilham Aliyev attended the solemn opening ceremony of the KARVAN-L EKO industrial park. Partly, there are manufacturing and processing, agricultural enterprises, which are partly created by the scientific divisions of the company and partly imported modern technologies and equipment from abroad.

Currently, the KARVAN-L ECO industrial park includes factories and businesses operating in different directions:

- Polyethylene sheet production plant
- Plastic pipe manufacturing plant
- Special metal manufacturing institute
- Emergency emergency automotive championship
- Empty of polyethylene tubes
- Production of barbares and accessories of these
- Plant and plastic construction factory
- Decorative and museum distribution companies of local population
- Restaurant complex of bioorganic agricultural products

- Ceramic rice and cerebles production

4.3. Pererspective role of eco-industrial parks in the formation of ecological and non-waste industrial processing in Azerbaijan

Today, role of eco-industrial parks is very huge for building of green industry in Azerbaijan. As, green industry is the conclusion of using of more eco-friendly equipments and passing off to non-waste industrial processing in country. With increasing of the number of eco-industrial parks, Azerbaijan is likely to rise its industrial reputation and protect environment. The accumulation and utilization of industrial and domestic waste for many years has led to a tense ecological situation.

These works have been started in Azerbaijan for several years. Establishment of the industrial park in the country was first defined by the Decree of the National Leader Heydar Aliyev dated 10 September 2002 "On Additional Measures in the Field of State Protection of Entrepreneurship in the Republic of Azerbaijan". Establishment of an industrial park was also implemented in the State Program on Reliable Provision of Foodstuffs in the Republic of Azerbaijan in 2008-2015, approved by the Presidential Decree of August 25, 2008, and the Decree of the President of the Republic of Azerbaijan dated 15 September 2008 The State Program on Poverty Reduction and Sustainable Development in the Republic of Azerbaijan for 2008-2015 "approved by the Decree. By the Decree of the President of the Republic of Azerbaijan dated April 24, 2013, measures have been taken to establish a variety of industrial parks in the country with the approval of the "Model Regulations on Industrial Parks". At present, Sumgait Chemical Industrial Park, Balakhani Industrial Park, Pirallahi High-Tech Park have been established, while the creation of next industrial parks in Ganja and Mingchevir is underway.

Taking into account the significant features of industrial parks, industrial parks have been established in Nakhchivan Autonomous Republic as a way of supporting entrepreneurship. It should be noted that the relevant legislative base has already been created

in this area. The "Industrial Parks Regulations", approved by the Chairman of the Supreme Assembly of the Nakhchivan Autonomous Republic on June 6, 2013, is a very important state document regulating issues related to the creation, management and implementation of entrepreneurial activity in industrial parks.

Entrepreneurs and private companies may also engage in an industrial park with a contract with the park's operator, according to the regulations envisaging stimulating measures for entrepreneurs. For this, they need to apply to the managing company for their investment project and other documents they intend to carry out in the park.

In this important document a number of measures have been taken to implement the tasks assigned to the Ministry of Economy and Industry of Nakhchivan Autonomous Republic.

Works on preparation of proposals for state, private, as well as municipal land ownership, were completed and the following projects were elaborated: draft statutory plan of industrial park, drafts of industrial park operator selection rules, draft statutory data acquisition and monitoring of their activities, half-year reports on the activities carried out in the Industrial Park, as well as drafting and submission of an external auditor's report on their activities, drafting a sample form of the operator's agreement with legal entities and individuals, application form for passage and for him drafts of the list of documents to be submitted, drafts of rules for evaluating the conformity of the submitted investment project to the defined criteria, the draft of the registration form of the registry of the industrial park and the draft registration form of the state-owned land plots in the territory of the industrial park, drafts management guidelines.

So, the mercury substance accumulated in the Surface Active Substances Plant located in Sumgayit turned that area into an ecological disaster zone. Gradually leakage of this substance to the soil, and evaporation to the air, is a source of great danger for the health of the population.

Special concern is the transportation and placement of domestic wastes in large settlements, especially in industrial centers.

Numerous illegal landfills have appeared on the outskirts of Baku, Sumgayit, and Ganja, which have contaminated the environment and have become sources of illness that can endanger human health.

Without wastewater treatment, those areas should be investigated from radiation safety point of view, and when there is radioactive contamination, ordinary cleaning should be performed after specific projects have been eliminated.

Many countries have already found ways to solve this problem. So, household wastes are burned, with the construction of waste treatment plants in areas with high population density. Due to the energy generated by the burning of garbage, the surrounding settlements are supplied with heat and electricity. From the remains of burning waste, the compost is used extensively to increase soil fertility as fertilizer. As it is seen, the construction of such a complex complex is also very important for Azerbaijan.

In accordance with the principles of environmentally sustainable development, the following measures are required for waste management:

- Establishment of new landfills for hazardous industrial waste disposal;
- use of progressive experience for the purpose of sorting, utilization and recycling of domestic wastes;
- application of appropriate methods for the removal of biogas from waste;
- purchase of energy, as well as construction of a waste mill for the purpose of obtaining compost.

In order to solve these and other environmental problems that have been accumulating for many years, a great deal of financial resources and modern equipment are required. To achieve these, Azerbaijan, which has a transition period, must comply with the requirements of the relevant international commitments by enforcing international environmental and financial institutions, donor states, and interstate agreements in the field of environmental protection, meeting the modern requirements.

In recent years, economic indicators have been rising in Azerbaijan, many production areas are upgraded and reconstructed. With the achievement of achievements, the socio-

economic indicators have been recognized as a key priority by the state, and therefore the welfare of the people. The use of sustainable development principles is crucial for this process.

Sources of pollution of air, water and soil in the Republic of Azerbaijan, especially fuel and energy and petrochemical complexes located in Sumgayit and Baku. The outdated technology is often the main cause of the use of low quality raw materials, which often stops due to an accident, lack of equipment to reduce contamination, and produces large quantities of pollutants. Given that the environmental situation has improved dramatically due to the decline in the volume of industrial production, the main objects of pollution are old enterprises.

Given the collection and use of natural and artificial radioactive sources in many industries, the focus should be on radiation safety. Regular inventory of radiation sources should be reorganized within the framework of the concept of sustainable development, control over the radiation background, transferring waste to specifically allocated sites.

In order to prevent environmental pollution by industrial enterprises, the development of environmental management, the application of various programs and projects, including the "clean production" program, is essential.

Thus, if environmental protection measures are not undertaken in industrial enterprises, the environmental pollution process will increase in proportion to the industry restoration process beginning in 1996.

The experience of foreign countries shows that creation of industrial parks has special importance in the implementation of priority tasks such as the export of the country's economy, the production of import substituting products, increasing the competitiveness of products, employment, attracting investments and modern technologies. Therefore, countries interested in developing different industries, countries interested in balanced development of the country's economy prefer to create industrial parks in their economic policies.

An eco-industrial park (EIP) is a network of organizations, situated in a solitary locale, that trade and utilize each other's results or vitality. Presently, EIPs are being advanced as a

method for empowering manageable improvement. Defenders contend that such a cooperative network of organizations delivers more ecological advantages than each organization can understand alone. Various EIPs have been arranged in North and South America, Southeast Asia, Europe and Southern Africa (*Ayres 1996; Indigo Development 1998; Gertler 1995; Lowe 1997*).

Promoters of EIPs consider the Danish beach front city of Kalundborg a model. There, the principle enterprises and the neighborhood government transform results into crude materials by exchanging and utilizing their waste streams and vitality assets. While the Kalundborg people group and other comparable cases² grew altogether through market powers (*Garner and Keoleian 1995; Gertler 1995; Lowe, Moran, and Holmes 1996; Schwartz and Steininger 1997*), numerous strategy experts contend that open organizers can duplicate and even enhance Kalundborg.

While a few people consider all loss as a risk to wellbeing and the condition that must be demolished or averted, numerous others think about waste as a monetary asset (Sinha 1993). Numerous who see squander as an asset name themselves "mechanical environmentalists," drawing on a similarity with the regular world in which living beings expend each other's squanders. The reason of mechanical environment is that cutting edge modern economies should impersonate the cycling of materials in biological systems all through the procedures of crude material extraction, fabricating, item use, and waste transfer. Mechanical environmentalists see enterprises as networks of makers, purchasers, and scroungers, and they energize cooperative connections among organizations and businesses. A definitive objective of mechanical nature is to reuse, fix, recoup, remanufacture, or reuse items and side-effects on an exceptionally substantial scale (*Allenby and Richards 1994; Ayres and Ayres 1996; Frosch and Gallopoulos 1989; Garner and Keoleian 1995; Graedel and Allenby 1995*).

Some mechanical environmentalists and open organizers imagine eco-modern stops as systems of organizations and different associations that trade and utilize results. By coordinating standards of modern environment with standards of contamination avoidance

and supportable plan, such territorially confined firms should, in the perspective on mechanical environmentalists, give at least one of the accompanying advantages over conventional, nonlinked tasks:

- decrease in the utilization of natural materials;
- decrease in contamination;
- growth of energy efficiency;
- decrease in the volume of waste items requiring transfer;
- increment in the sum and kinds of procedure yields that have showcase esteem

(*Gertler, 1995*).

In the experience of Kalundborg most industrial environmentalists trust that Kalundborg, a little city on the island of Seeland, 75 miles west of Copenhagen, is the primary reusing system ever (*Garner and Keoleian 1995; Gertler 1995; Lowe, Moran, and Holmes 1996; Schwarz and Steininger 1997*). In this city of 20,000, the four principle enterprises - a coal-terminated power plant (Asnæs), a refinery (Statoil), a pharmaceuticals and catalysts creator (Novo Nordisk), a plasterboard maker (Gyproc), just as the city government and a couple of littler organizations - feed on every others' squanders, in the process transforming them into valuable sources of info.

This neighborhood collaboration started to shape during the 1970s and now goes to some degree like this: The Asnæs control organization supplies lingering steam to Statoil refinery and, in return, gets refinery gas that used to be flared as waste. The power plant consumes the refinery gas to produce power and steam. It sends abundance steam to a fish ranch that it works, to a region warming framework serving 3,500 homes, and to the Novo Nordisk plant.³ Sludge from the fish homestead and pharmaceutical procedures progresses toward becoming compost for adjacent ranches. The power plant sends fly slag to a concrete organization, while gypsum delivered by the power plant's desulfurization procedure goes to an organization that produces gypsum wallboard. At long last, the Statoil refinery expels sulfur from its gaseous petrol and pitches it to Kemira, a sulfuric corrosive producer.

We can see from efficient results of Danish experience that eco-industrial parks have main and huge role in the development of country's environment. In Azerbaijan, government could use Danish experience for creating and improving the role of eco-industrial parks in country. Since, this method is proved by experiments and works.

5. CONCLUSIONS AND RECOMMENDATIONS

Firstly, I examined the industrial zones and their place in modern society and then I showed that how they work and what are their mechanisms in the world. The useful models of cooperation and forms and role of eco-industrial parks in green industry and environment are very essential points in this work. In this study, we are likely to learn new perspectives that eco-industrial parks create in different countries.

Mainly, learning of their place and effectiveness in life is very important for different societies. Because, modernizing of industrial parks into eco-industrial parks and using more energy efficient methods, as well as waste production are new phenomena and trends that numerous developed countries are intend to use and build them. They can create more effective usages of natural resources and spurs economic growth in the world.

Eco-industrial parks (EIP) offer the business points of interest of conventional mechanical parks while likewise utilizing assets all the more effectively, improving profitability, supporting the accomplishment of firms' social obligation objectives, and bringing presentation down to environmental change dangers. Industrial parks group mechanical organizations in a committed area to accomplish efficiencies and exploit community-oriented chances. Be that as it may, gathering financial movement in one region risks additionally focusing on negative ecological and social effects, for example, contamination, ozone depleting substance emanations, and poor work guidelines.

As natural externalities become a greater factor in business tasks and basic leadership, we will keep on observing an expansion in patterns for eco-industrial park (EIPs). Worldwide elements will help goad EIP development to a more elevated amount. The variables will incorporate such things as a typical cost on carbon and national duties to relief and adjustment—and all the more critically their usage. To supplement these market drivers, the worldwide network and mechanical park financial specialists need to step up to the plate and build up a typical comprehension of EIPs and their specialized prerequisites. This should be

supplemented by national systems that are strong and focused on actualizing great mechanical practices and ecological guidelines to frame a gauge for EIP development.

These zones of center ought to be joined by the improvement of markers that mechanical park administrators and designers can use so as to gauge and advance their achievements. In the exploration writing there are not many examinations that expect to set specific markers for EIPs, and the vast majority of them are impacted by territorial mechanical stops as a beginning stage. So as to empower correlation of EIPs and structure a worldwide system, a comprehensive and effectively quantifiable methodology ought to be created. It ought to be adaptable to take into consideration various kinds of approach objectives to be coordinated (carbon outflows, social and natural wellbeing and security, etc), take into consideration simplicity of information accumulation, and guarantee that it is dynamic as far as enabling the mechanical park to build its capacity to meet biological objectives.

I suggest that we should analyze of international knowledge and suit these experiences to national industrial system. As, international knowledge ought to appropriate to Azerbaijan's politics and system. For example, as a result of questionnaire we can conclude that state uses best practices of Europe, China, Turkey, Arab countries and CIS countries, the creation of industrial parks in the Republic of Azerbaijan, it is decided to create industrial parks taking into account the social and economic characteristics of the country. And also many developed countries' knowledge, such as Danish experience is very useful and important in creating better eco-industrial schemes.

Also, nowadays creating of eco-industrial parks is the main direction of extending and modernizing the industrial politics in country. Today, government is intent to increase real capital and make better the politics for supporting industrial activities and mainly creating eco-industrial parks and zones. As well as, state can choose policy for development of different sectors of industry in country for building sectorial eco-industrial parks. And finally, we should find capacity of regions for creating the best eco-industrial parks, because state invests so big amount of money for creating them and if this land or region is not suitable for these kind of parks and zones then it can affect negatively to countries' policy.

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