GEIPP

GLOBAL ECO-INDUSTRIAL PARKS PROGRAMME

ASSESSING THE CONTRIBUTION OF ECO-INDUSTRIAL PARKS TO THE SDGs

DECEMBER 2021

LESSONS LEARNT SERIES

Issue 3

2021

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs,
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ASSESSING THE CONTRIBUTION OF ECO-INDUSTRIAL PARKS TO THE SDGS

METHODOLOGY

GEIPP

2021

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SUMMARY

The Eco-Industrial Park (EIP) concept, as defined in the EIP International Framework[1], has emerged as an effective alternative to conventional industrial parks with the ambition of achieving higher environmental, social and economic sustainability performance in industrial manufacturing.

This report analyses the existing linkages between the EIP concept and the Sustainable Development Goals (SDGs) set up in 2015 by the United Nations General Assembly and intended to be achieved by the year 2030. The analysis is done at the level of the indicators, establishing a link between the 64 EIP indicators (plus 6 complementary performance indicators) and the 232 SDG indicators. The report also presents a methodology for the allocation of EIP project resources (project budget and/or mobilized investments) to EIP targets and to SDGs.

The methodology is then applied to specific case studies, such as to the first year of implementation of one GEIPP country project and to the overall GEIPP budget. These partial results suggest that financial support provided to the EIP transformation through ODA, such as through the Global Eco-Industrial Park Programme, contributes, in the order, to the following SDGs:

- SDG 8 “Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all”
- SDG 3 “Ensure healthy lives and promote well-being for all at all ages”
- SDG 6 “Ensure availability and sustainable management of water and sanitation for all”,
- SDG 12 “Ensure sustainable consumption and production patterns”,
- SDG 7 “Ensure access to affordable, reliable, sustainable and modern energy for all”,
- SDG 9 “Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation”,
- and, to a lesser extent, to SDGs 1, 5, 11, 10 and 13.

A clearer understanding of the contribution of the EIP concept to SDGs will be possible by applying the methodology at the end of the GEIPP implementation period, when it will be clearer if the original budget was used according to the plan, which activities were actually supported under each output, and which additional investments the programme managed to mobilize.

The results will be particularly valuable to donors and other development agents seeking to understand how and to which SDGs their assistance is contributing. The application of this methodology increases donor internal accounting and allows them to adjust ODA to the desired development objective. It is also useful as a monitoring tool for project implementers to adjust and refocus their activities based on their development goals.

[1] Available at https://openknowledge.worldbank.org/handle/10986/35110

INTRODUCTION 1

1. INTRODUCTION

1.1 THIS REPORT

This report is the third publication of the GEIPP's "Lessons Learnt" series aimed at collecting and disseminating results from the Global Eco-Industrial Parks Programme.

The target audience for this report is international organizations and donors fostering and promoting the EIP concept as an effective means towards sustainable development.

This report devises a methodology to, on the one hand, account for resources spent on EIP development projects, and on the other hand, account for the resources mobilized by EIP development projects to further EIP development objectives and, ultimately, the SDGs. This methodology can be applied to the GEIPP, including its 7 country projects, to get insights on which EIP development objectives and which SDGs are receiving support from development projects and investments linked to them.

Chapter 1 provides an overview of the GEIPP, the EIP International Framework and the linkages between EIP development objectives and SDGs. Chapter 2 presents the methodology to allocate resources to EIP indictors and SDGs respectively. Chapter 3 presents an option to apply the methodology by using information readily available at any implementing agency, thus minimizing additional burdens on project management (albeit making the analysis coarser). Chapter 4 presents an application of the methodology to the GEIPP, including its country projects, based on the allocated project budgets and the first year of implementation of one country project (Vietnam). Finally, Chapter 5 presents and discusses the results from the application of the methodology.

1.2 THE UNIDO GLOBAL EIP PROGRAMME

The objective of the UNIDO Global Eco-Industrial Parks Programme (GEIPP) is to demonstrate the viability and benefits of greening industrial parks by improving resource productivity and economic, environmental and social performances of businesses, thereby contributing to inclusive and sustainable industrial development in the participating developing and transition economies.

An overview of the components and outcomes of the GEIPP is described in figure 1.

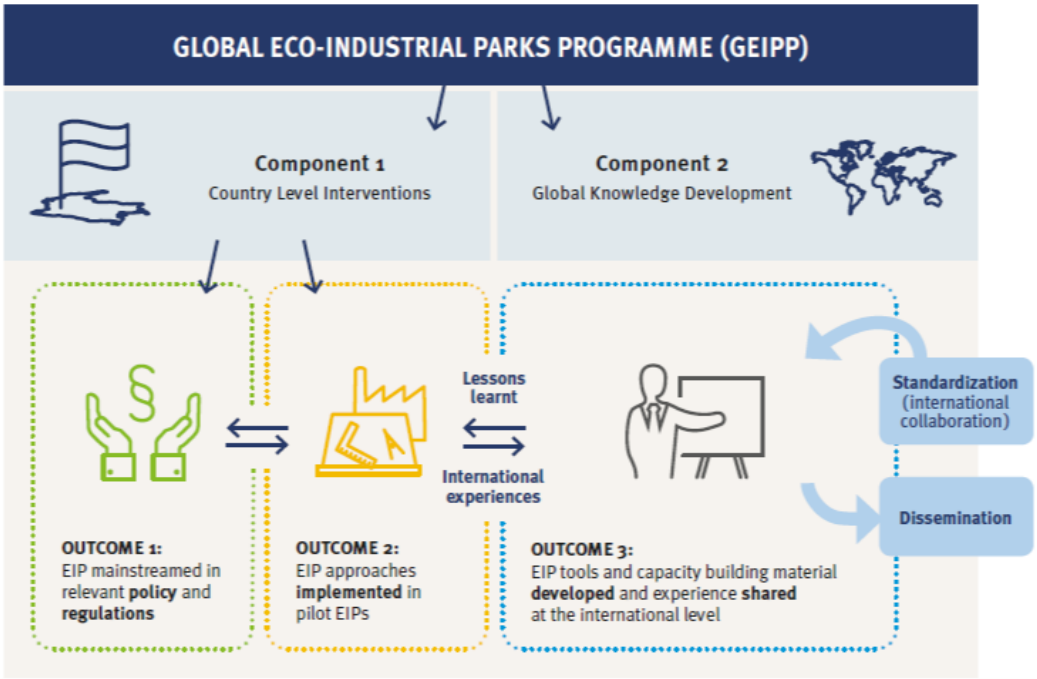

Figure 1. Approach of the Global EIP Programme (GEIPP)

Component 1 (Country-level interventions) implement tailor-made initiatives in seven countries: Colombia, Egypt, Indonesia, Peru, South Africa, Ukraine and Viet Nam. Two outcomes are targeted by this component in each country:

- *Outcome 1:* EIP incentivized and mainstreamed in relevant policy and regulations leading to an increased role of EIP in environmental, industry and other relevant policies at the national level in the participating countries. Activities such as stakeholder mapping, policy review and capacity building of key institutions, stakeholders and service providers will strengthen relevant national institutions.

- *Outcome 2:* EIP opportunities identified and implementation started, with environmental (e.g. resource productivity) economic and social benefits achieved by enterprises confirmed. The implementation of EIP opportunities will be supported by service providers leading to reduction of the environmental footprint of businesses, increase in their resource productivity and economic performances. Benchmarking of industrial parks, capacity building and technical support to the implementation of Resource Efficient and Cleaner Production (RECP) options and industrial synergies are examples of activities that will be undertaken.

Component 2 (Global Knowledge Development) focuses on the development of specific EIP tools and the dissemination of lessons learnt from international experiences. This component will strongly build upon activities undertaken during the previous Global RECP Programme and will further advance collaborations between UNIDO and other leading international organizations working on EIPs (e.g. World Bank and GIZ).

The Global Eco-Industrial Parks Programme (2019-2023) is made possible by funding provided by the Swiss Government through the State Secretariat for Economic Affairs of Switzerland (SECO).

THE CONCEPT OF ECO-INDUSTRIAL PARKS

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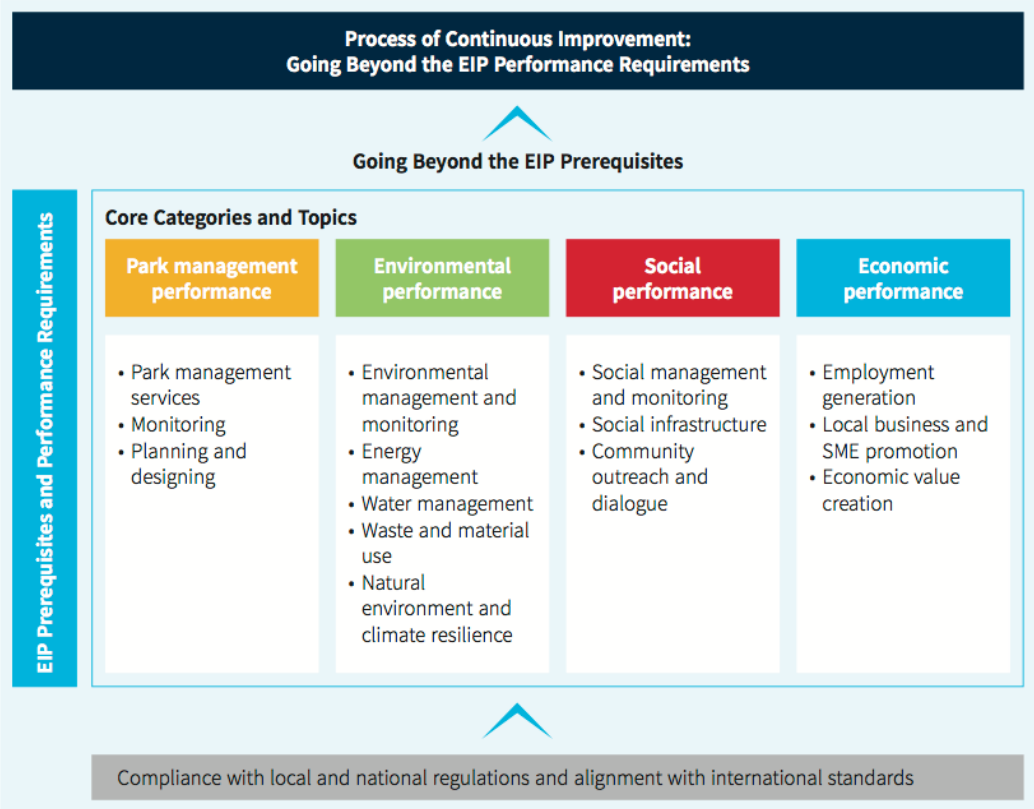
2. THE ECO-INDUSTRIAL PARK CONCEPT

2.1 The International Framework for Eco-Industrial Parks

Eco-Industrial Parks (EIPs) can be defined as managed industrial areas that promote cross-industry and community collaboration for common benefits related to economic, social and environmental performance. The EIP concept has evolved to address additional, interrelated aspects, including, for example: resource-efficient and cleaner production, industrial symbiosis, climate change, pollution, social standards, shared infrastructure, improved management of risks and shared resources, including land and ecosystem services. An interdisciplinary approach is required to optimally realise the EIP concept (World Bank et al., 2021).

In 2017, UNIDO, the World Bank and GIZ developed the EIP International Framework, which was subsequently revised in 2021[2], and which outlines the minimum requirements and performance indicators which apply to an Eco-Industrial Park. In this way, the EIP International Framework provides a global reference on the characteristics an EIP should have, and the important aspects that conventional industrial parks should improve to move towards the EIP concept.

These minimum requirements (or prerequisites) and performance indicators can be grouped in 4 main categories: Park management performance; Environmental performance; Social performance; and Economic performance. (Figure 2):



[2] The EIP International Framework V2 is available at: https://openknowledge.worldbank.org/handle/10986/35110 (UNIDO, World Bank, GIZ, 2021. An International Framework for Eco-Industrial Parks, Version 2.0)

Figure 2. Overall Framework for Describing Eco-Industrial Parks' prerequisites and performance requirements

In particular, the EIP requirements are organized around 14 topics, as follows:

Park Management Performance	Environmental Performance	Social Performance	Economic Performance
Park management services	Management and monitoring;	Social management systems	Park entity's financial viability
Monitoring and risk management	Energy	Social infrastructure	Employment generation
Planning and park design	Water supply and wastewater	Local community outreach	Local business and SME promotion
	Waste and material use		Economic value creation
	Climate change and the natural environment		

The detailed list of EIP prerequisites and performance criteria and indicators are available in **Annex I**.

2.1 Linkages between EIP requirements and Sustainable Development Goals

The Sustainable Development Goals are 17 interlinked global goals designed to be a "blueprint to achieve a better and more sustainable future for all". The SDGs were set up in 2015 by the United Nations General Assembly and are intended to be achieved by the year 2030.

The 17 SDGs are depicted in Figure 3.

Figure 3. Sustainable Development Goals

Specific targets have been defined for each Sustainable Development Goal, along with indicators that are being used to measure progress towards each target. Each goal has 8–12 targets, and each target has between 1 and 4 indicators. The targets are either "outcome" targets (circumstances to be attained) or "means of implementation" targets. Altogether, the 17 Sustainable Development Goals have associated 169 targets and 232 indicators.

It is possible to find a linkage between the SDG targets and the EIP topics. More specifically, linkages can be established between the SDG indicators and the EIP indicators. The “EIP indicators” being assessed against the SDG indicators include the 64 indicators from the EIP International Framework Version 2, plus 6 indicators measuring the rate of adoption of EIP practices used in the Results-Based Management (RBM) framework of the GEIPP which are also linked with UNIDO’s IRPF[3]. The 6 IRPF indicators have been added to this set, as they address important aspects which were not covered by the EIP International Framework indicators. They are:

- Number of SME-staff, IP management staff and service providers trained;
- Number of involved staff from relevant governmental agencies;
- Number of EIPs activities by enterprises (meaning: EIP opportunities which are developed / implemented, without further support through GEIPP. This includes all EIP opportunities, including park management services, RECP, Industrial synergies and shared infrastructure/utilities, the natural environment, community engagement, planning and zoning);
- Number of initiatives of providers of business services (meaning: number of RECP/EIP opportunities which are developed/implemented with the support of national service providers);
- Actual investments in RECP/EIP identified options;

[3] The UNIDO Integrated Results Performance Framework (IRPF) includes a set of performance indicators against which UNIDO’s projects are assessed.

» Conducive policies and regulations implemented and enforced and EIP promoted by strong custodian at the national level.

The linkage of an SDG target and its indicators, to one or more EIP indicators is based on expert opinion. The list of SDG goals, targets and indicators relevant for EIPs is presented in Table 1.

Table 1. List of sustainable development goals, targets and indicators relevant for EIPs

SDG	SDG Target	SDG Indicator	Rationale
SDG 1: End poverty in all its forms everywhere	SDG target 1.1: By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day	SDG indicator 1.1.1: Proportion of the population living below the international poverty line by sex, age, employment status and geographic location (urban/rural)	By contributing to industrial development and better jobs, the EIP concept has a positive impact on poverty reduction.
	SDG target 1.2: By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	SDG indicator 1.2.1: Proportion of population living below the national poverty line, by sex and age	By contributing to industrial development and better jobs, the EIP concept has a positive impact on poverty reduction.
		SDG indicator 1.2.2: Proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	By contributing to industrial development and better jobs, the EIP concept has a positive impact on poverty reduction.
SDG 3: Ensure healthy lives and promote well-being for all at all ages	SDG target 3.9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	SDG indicator 3.9.1: Mortality rate attributed to household and ambient air pollution	Application of RECP to reduce air pollution of tenant companies
		SDG indicator 3.9.2: Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services)	Application of RECP to reduce water pollution of tenant companies Support and optimise the development and implementation of (shared) industrial wastewater treatment facilities in industrial parks, where possible, integrated with water recycling and domestic wastewater treatment
SDG 5: Achieve gender equality and empower all women and girls	SDG target 5.5: Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life	SDG indicator 5.5.2: Proportion of women in managerial positions	Encourage female managerial positions in park management entities and tenant companies
SDG 6: Ensure availability and sustainable management of water and sanitation for all	SDG target 6.3: By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	SDG indicator 6.3.1: Proportion of domestic and industrial wastewater flows safely treated	Support and optimise the development and implementation of (shared) industrial wastewater treatment facilities in industrial parks, where possible, integrated with water recycling and domestic wastewater treatment

	SDG target 6.4: By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	SDG indicator 6.4.1: Change in water-use efficiency over time	Application of RECP to increase water efficiencies of tenant companies, and industrial park utilities Development and implementation of water utility synergies in industrial parks, where possible, interlinked with water utilities / infrastructures outside park
		SDG indicator 6.4.2: Level of water stress: freshwater withdrawal as a proportion of available freshwater resources	Application of RECP to increase water efficiencies of tenant companies, and industrial park utilities Development and implementation of water utility synergies in industrial park, where possible, interlinked with water utilities / infrastructures outside park
	SDG target 6.5: By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate	SDG indicator 6.5.1: Degree of integrated water resources management	Development and implementation of water utility synergies in industrial parks, where possible, interlinked with water utilities / infrastructures outside park
SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all	SDG target 7.1: By 2030, ensure universal access to affordable, reliable and modern energy services	SDG indicator 7.1.2: Proportion of population with primary reliance on clean fuels and technology	Application of RECP to increase use of clean fuels and apply green technologies at tenant companies, and industrial park utilities (biomass fired boilers) Development and implementation of energy utility synergies in industrial parks using clean fuels and green technologies (e.g. cogeneration), where possible, interlinked with energy utilities / infrastructures outside park
	SDG target 7.2: By 2030, increase substantially the share of renewable energy in the global energy mix	SDG indicator 7.2.1: Renewable energy share in the total final energy consumption	Application of RECP to increase use of renewable energy at tenant companies, and industrial park utilities (biomass fired boilers) Development and implementation of energy utility synergies in industrial parks utilising renewable energy (e.g. rooftop solar PV or solar hot water systems), where possible, interlinked with energy utilities / infrastructures outside park

	SDG target 7.3: By 2030, double the global rate of improvement in energy efficiency	SDG indicator 7.3.1: Energy intensity measured in terms of primary energy and GDP	"Application of RECP to increase energy efficiencies at tenant companies, and industrial park utilities Development and implementation of energy utility synergies in industrial parks, where possible, interlinked with energy utilities / infrastructures outside park
	SDG target 7.a: By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	SDG indicator 7.a.1: International financial flows to developing countries in support of clean energy research and development and renewable energy production, including in hybrid systems	Using industrial parks in developing and transition countries as testing ground for internationally funded clean and renewable energy projects
	SDG target 7.b: By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programmes of support	SDG indicator 7.b.1: Installed renewable energy-generating capacity in developing countries (in watts per capita)	Application of RECP to increase use of renewable energy at tenant companies, and industrial park utilities (biomass fired boilers) Development and implementation of energy utility synergies in industrial parks utilising renewable energy (e.g. rooftop solar PV or solar hot water systems), where possible, interlinked with energy utilities / infrastructures outside park
SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	SDG target 8.1: Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries	SDG indicator 8.1.1: Annual growth rate of real GDP per capita	Application of EIP approaches to create more resource-efficient and cost-effective industrial parks which are more competitive, attractive for investment and risk resilient
	SDG target 8.2: Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	SDG indicator 8.2.1: Annual growth rate of real GDP per employed person	Application of EIP approaches to create more resource-efficient and cost-effective industrial parks which are more competitive, attractive for investment and risk resilient

	SDG target 8.3: Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	SDG indicator 8.3.1: Proportion of informal employment in total employment, by sector and sex	Create local employment opportunities through new businesses focusing on eco-innovations, waste recycling and circular economy
	SDG target 8.4: Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead	SDG indicator 8.4.1: Material footprint, material footprint per capita, and material footprint per GDP	Application of RECP to increase material efficiencies at tenant companies, and industrial park utilities Development and implementation of supply chain, by-product and urban industrial synergies in industrial parks, where possible, interlinked with companies and government agencies outside park
		SDG indicator 8.4.2: Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP	Application of RECP to increase material efficiencies at tenant companies and industrial park utilities Development and implementation of supply chain, by-product and urban industrial synergies in industrial parks, where possible, interlinked with companies and government agencies outside park
	SDG target 8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	SDG indicator 8.5.1: Average hourly earnings of employees, by sex, age, occupation and persons with disabilities	Application of fair work and contract arrangements for employees of park management entities and tenant companies
		SDG indicator 8.5.2: Unemployment rate, by sex, age and persons with disabilities	Application of EIP approaches to create more resource-efficient and cost-effective industrial parks which are more competitive, attractive for investment and risk resilient Create local employment opportunities through new businesses focusing on eco-innovations, waste recycling and circular economy
	SDG target 8.8: Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women	SDG indicator 8.8.1: Fatal and non-fatal occupational injuries per 100,000 workers, by sex and migrant status	Application of RECP and safer production approaches to increase OH&S at tenant companies and park management entities
		SDG indicator 8.8.2: Level of national compliance with labour rights (freedom of	None identified at this stage

	migrants, and those in precarious employment	association and collective bargaining) based on International Labour Organization (ILO) textual sources and national legislation, by sex and migrant status	
SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	SDG target 9.2: Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	SDG indicator 9.2.1: Manufacturing value added as a proportion of GDP and per capita	Application of EIP approaches to create more resource-efficient and cost-effective industrial parks which are more competitive, attractive for investment and risk resilient
		SDG indicator 9.2.2: Manufacturing employment as a proportion of total employment	Application of EIP approaches to create more resource-efficient and cost-effective industrial parks which are more competitive, attractive for investment and risk resilient
	SDG target 9.4: By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	SDG indicator 9.4.1: CO2 emission per unit of value added	Application of RECP to increase use of energy efficiency and renewable energy at tenant companies, and industrial park utilities (biomass fired boilers) Development and implementation of energy utility synergies in industrial parks utilising green technologies, renewable energy (e.g. rooftop solar PV or solar hot water systems), where possible, interlinked with energy utilities / infrastructures outside park
	SDG target 9.b: Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities	SDG indicator 9.b.1: Proportion of medium and high-tech industry value added in total value added	Apply EIP approaches (e.g. industry clustering, industrial synergies, added value management services) to make industrial parks attractive for medium/high tech companies
SDG 10: Reduce inequality within and among countries	SDG target 10.4: Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality	SDG indicator 10.4.1: Labour share of GDP	Application of EIP approaches to create more resource-efficient and cost-effective industrial parks which are more competitive, attractive for investment and risk resilient, and thereby increase jobs Create local employment opportunities through new businesses focusing on eco-innovations, waste recycling and circular economy
SDG 11: Make cities and human settlements	SDG target 11.6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying	SDG indicator 11.6.1: Proportion of municipal solid waste collected and managed in controlled facilities out of total municipal waste generated, by cities	Development and implementation of urban-industrial synergies to process municipal solid waste from nearby communities in industrial parks

inclusive, safe, resilient and sustainable	special attention to air quality and municipal and other waste management	SDG indicator 11.6.2: Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)	Application of RECP to reduce air pollution of tenant companies
SDG 12: Ensure sustainable consumption and production patterns	SDG target 12.2: By 2030, achieve the sustainable management and efficient use of natural resources	SDG indicator 12.2.1: Material footprint, material footprint per capita, and material footprint per GDP	Application of RECP to increase material efficiencies at tenant companies, and industrial park utilities Development and implementation of supply chain, by-product and urban industrial synergies in industrial parks, where possible, interlinked with companies and government agencies outside the park
		SDG indicator 12.2.2: Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP	Application of RECP to increase material efficiencies at tenant companies and industrial park utilities Development and implementation of supply chain, by-product and urban industrial synergies in industrial parks, where possible, interlinked with companies and government agencies outside the park
	SDG target 12.4: By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	SDG indicator 12.4.2: (a) Hazardous waste generated per capita; and (b) proportion of hazardous waste treated, by type of treatment	Application of RECP to reduce hazardous waste generation and improve hazardous waste management at tenant companies, and industrial park utilities Development and implementation of urban-industrial synergies to process hazardous wastes from nearby communities in industrial parks
	SDG target 12.5: By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	SDG indicator 12.5.1: National recycling rate, tons of material recycled	Application of RECP to increase material reuses and recycling at tenant companies and industrial park utilities Development and implementation of by-product and urban industrial synergies in industrial parks to reuse and recycle different types of waste materials, where possible, interlinked with companies and government agencies outside the park
	SDG target 12.6: Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	SDG indicator 12.6.1: Number of companies publishing sustainability reports	Support park management entities and tenant companies to monitor, manage and report on their economic, environmental and social sustainability performance on a regular basis

	SDG target 12.7: Promote public procurement practices that are sustainable, in accordance with national policies and priorities	SDG indicator 12.7.1: Degree of sustainable public procurement policies and action plan implementation	Support park management entities and tenant companies to identify, prioritise and develop sustainable procurement opportunities
	SDG target 12.a: Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production	SDG indicator 12.a.1: Installed renewable energy-generating capacity in developing countries (in watts per capita)	Application of RECP to increase use of renewable energy at tenant companies, and industrial park utilities (biomass fired boilers) Development and implementation of energy utility synergies in industrial parks utilising renewable energy (e.g. rooftop solar PV or solar hot water systems), where possible, interlinked with energy utilities / infrastructures outside the park
SDG 13: Take urgent action to combat climate change and its impacts	SDG target 13.2: Integrate climate change measures into national policies, strategies and planning	SDG indicator 13.2.2: Total greenhouse gas emissions per year	Application of RECP to increase energy efficiencies and reduce greenhouse gas emissions at tenant companies, and industrial park utilities (biomass fired boilers) Development and implementation of energy utility synergies in industrial parks using clean fuels and green technologies (e.g. cogeneration), where possible, interlinked with energy utilities / infrastructures outside the park

As a next step, the relevant EIP indicators (64 from the EIP International Framework v2 and the 6 additional from GEIPP RBM) have been linked to the relevant SDG indicators.

Two types of linkages could be identified:

- Hard linkage: when the EIP indicator has clear synergy with the relevant SDG indicator;
- Soft linkage: when the EIP indicator exhibits some potential synergy with the relevant SDG indicator, but the link is not direct.

Table 2 highlights the linkages between SDG indicators and the relevant EIP indicators.

Table 2. Soft and hard linkages between SDG and EIP indicators

SDG indicator	EIP indicators with Soft linkage	EIP indicators with Hard linkage

SDG indicator 1.1.1: Proportion of the population living below the international poverty line by sex, age, employment status and geographic location (urban/rural)	• A distinct park management entity (or alternative agency, where applicable) exists to handle park planning, operations and management, and monitoring.
	• Dedicated personnel exists (as part of the park management entity) to plan and manage social quality standards.
	• Park management entity allows and promotes the establishment of SMEs that provide services and add value to park residents.
	• At least 30% of total firm workers in industrial park employed through direct employment (that is, not employed on a fee-for-output basis or provided through a labor supply firm) and permanent contracts.
		• Park management entity to manage and maintain the industrial park property, common infrastructure, and services as prescribed in the tenant contract. This should include at least the following:
		  ○ Property management, including plot allotments, re-allotments, development, land use monitoring.
		  ○ Utilities, roads, security (including IT security) and emergency response services/facilities and wastewater treatment plants and operations, including waste heat/energy recovery and distribution networks
		  ○ Environmental monitoring and advisory activities
		  ○ Common landscaping, buffer zones, street lighting, security surveillance and street cleaning.
		  ○ Provide facilitating services to and between tenant firms (for example, networking, collaboration and training opportunities).
		  ○ Engagement with the park's stakeholders and business representatives.
		  ○ PR and community participation center/platform/activities.
		• 100% of the park management and tenant firms have a metering system in place.

SDG indicator 1.2.1: Proportion of	• Dedicated personnel exist (as part of the park management entity) to plan and manage social quality standards.	-

population living below the national poverty line, by sex and age	• Park management entity allows and promotes the establishment of SMEs that provide services and add value to park residents. • At least 30% of total firm workers in industrial park employed through direct employment (that is, not employed on a fee-for-output basis or provided through a labor supply firm) and permanent contracts.	
SDG indicator 1.2.2: Proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	• Dedicated personnel exists (as part of the park management entity) to plan and manage social quality standards. • Park management entity allows and promotes the establishment of SMEs that provide services and add value to park residents. • At least 30% of total firm workers in industrial park employed through direct employment (that is, not employed on a fee-for-output basis or provided through a labor supply firm) and permanent contracts.	-
SDG indicator 3.9.1: Mortality rate attributed to household and ambient air pollution	• Park management entity maintains an EIP framework monitoring system in place, tracking and reporting: • Progress on environmental, social and economic performance at the park level annually. • Critical risk factors and related responses, at least for: o Risk points for the accidental release of hazardous solid, liquid and gaseous effluents, including during transportation and disposal when fire hazards are possible; and o Applicable natural disaster risks (for example, earthquakes); o Environmental performance; o Social performance; o Economic performance; and o Critical risk management at the level of the park. • Acts as monitoring and pre-clearing institution for environmental issues on behalf of the regulatory bodies, as delegated. • May operate a central environment control unit with an emergency alert system for environmental and other hazards. • Park management entity has a system to collect, register and comply with local/national regulations and international standards applicable to the industrial park. Park management enforces	• A monitoring system is in place that controls and registers origin, type, mode and route of transport, and final destination of waste/secondary raw material leaving the park. • The park management entity has a plan in place to assess operational environmental impacts, and aims to limit these impacts on prioritized local ecosystem services. • 100% of firms in park appropriately handle, store, transport and dispose of toxic and hazardous materials. • 100% of waste generated by firms in the industrial park is safely disposed of. Open burning of waste generated in an EIP is prohibited. • At least 50% of firms in park have pollution prevention and emission reduction strategies to reduce the intensity and mass flow of

	compliance by resident firms and requests and collects compliance information that firms share with the park management entity. • 100% of firms in the industrial park have signed a residency contract/park charter/code of conduct (depending on what is legally binding on park firms according to the existing legislation in the country) and additional legally binding arrangements that empower the park management entity to perform its responsibilities and tasks, and charge fees (sometimes absorbed in rental fees) for common services. This may include transparent fees for services pertaining to the achievement of EIP performance targets. • Obeying the principles of good practices for the management of hazardous materials and waste as part of legally binding agreements. • A central park facility or other mechanism is in place to treat waste that cannot be processed by individual firms. • The park management implements measures to protect biodiversity, and protects or creates natural/recreational areas in and surrounding the park. • At least 25% of non-hazardous, solid industrial waste generated by firms is reused-recycled by other firms, neighbouring communities, or municipalities. • 100% of grievances received by the park management entity are responded to with statements of reasons within 14 days. • At least 60% of grievances received by the park management entity are brought to conclusion. • At least 75% of grievances received by the park management entity are concluded within 60 days. • Number of EIPs activities by enterprises (meaning: EIP opportunities which are developed / implemented, without further support from GEIPP. This includes all EIP opportunities, including park management services, RECP, Industrial synergies and shared infrastructure/utilities. natural environment, community engagement, planning and zoning)	pollution/emission releases which exceed national regulations. • At least 30% of firms in industrial park have a risk management framework in place that: (a) identifies activities which have an impact on the environment, and; (b) assigns a level of significance to each activity, and; (c) has appropriate mitigation measures in place. • At least 75% of firms with more than 250 employees have an OH&S management system in place.

	• Number of initiatives of provider of business services (meaning: number of RECP/EIP opportunities which are developed / implemented with support of national service providers) • Actual investments in RECP/EIP identified options • Conducive policies and regulations implemented and enforced and EIP promoted by strong custodian at the national level	
SDG indicator 3.9.2: Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services)	• Park management entity to manage and maintain the industrial park property, common infrastructure, and services as prescribed in the tenant contract. This should include at least the following: • Property management, including plot allotments, re-allotments, development, land use monitoring. • Utilities, roads, security (including IT security) and emergency response services/facilities and wastewater treatment plants and operations, including waste heat/energy recovery and distribution networks • Environmental monitoring and advisory activities • Common landscaping, buffer zones, street lighting, security surveillance and street cleaning. • Provide facilitating services to and between tenant firms (for example, networking, collaboration and training opportunities). • Engagement with the park's stakeholders and business representatives. • PR and community participation center/platform/activities. • Park management entity maintains an EIP framework monitoring system in place, tracking and reporting: • Progress on environmental, social and economic performance at the park level annually. • Critical risk factors and related responses, at least for: o Risk points for the accidental release of hazardous solid, liquid and gaseous effluents, including during transportation and disposal when fire hazards are possible; and o Applicable natural disaster risks (for example, earthquakes); o Environmental performance; o Social performance; o Economic performance; and o Critical risk management at the level of the park.	• Obeying the principles of good practices for the management of hazardous materials and waste as part of legally binding agreements. • A central park facility or other mechanism is in place to treat waste that cannot be processed by individual firms. • A monitoring system is in place that controls and registers origin, type, mode and route of transport, and final destination of waste/secondary raw material leaving the park. • The park management entity has a plan in place to assess operational environmental impacts, and aims to limit these impacts on prioritized local ecosystem services. • The park management implements measures to protect biodiversity, and protects or creates natural/recreational areas in and surrounding the park. • 100% of total water demand from firms in industrial park does not negatively impact local water sources or communities. • 100% of industrial wastewater generated by industrial park and resident firms is treated in accordance with appropriate environmental standards.

	• Acts as monitoring and pre-clearing institution for environmental issues on behalf of the regulatory bodies, as delegated. • May operate a central environment control unit with an emergency alert system for environmental and other hazards. • Park management entity has a system to collect, register and comply with local/national regulations and international standards applicable to the industrial park. Park management enforces compliance by resident firms and requests and collects compliance information that firms share with the park management entity. • 100% of firms in the industrial park to have signed a residency contract/park charter/code of conduct (depending on what is legally binding on park firms according to the existing legislation in the country) and additional legally binding arrangements that empower the park management entity to perform its responsibilities and tasks, and charge fees (sometimes absorbed in rental fees) for common services. This may include transparent fees for services pertaining to the achievement of EIP performance targets. • Obeying the principles of circular economy is part of the Park's Code of Conduct, and any legally binding agreement between tenant firms and the park authority. • At least 25% of total industrial wastewater from firms is reused responsibly within or outside the industrial park. • At least 25% of non-hazardous, solid industrial waste generated by firms is reused-recycled by other firms, neighbouring communities, or municipalities. • 100% of grievances received by the park management entity are responded to with statements of reasons within 14 days. • At least 60% of grievances received by the park management entity are brought to conclusion. • At least 75% of grievances received by the park management entity are concluded within 60 days. • 100% of reported security and safety issues are adequately addressed within 30 days.	• 100% of firms in park appropriately handle, store, transport and dispose of toxic and hazardous materials. • 100% of waste generated by firms in the industrial park is safely disposed of. Open burning of waste generated in an EIP is prohibited. • At least 75% of firms with more than 250 employees have an OH&S management system in place. • Conducive policies and regulations implemented and enforced and EIP promoted by strong custodian at the national level

	• Number of EIPs activities by enterprises • Number of initiatives of provider of business services • Actual investments in RECP/EIP identified options	
SDG indicator 5.5.2: Proportion of women in managerial positions	• Dedicated personnel exist (as part of the park management entity) to plan and manage social quality standards. • At least 60% of grievances received by the park management entity are brought to conclusion. • At least 80 percent of women and 80 percent of men of the surveyed workers agree that each of these decent work criteria are met. • At least 80% of the surveyed employees report satisfaction with social infrastructure. • 100% of reported security and safety issues are adequately addressed within 30 days. • 75% of firms in the industrial park with more than 250 employees have a program for skills/vocational training and development.	• Essential primary social infrastructure has been adequately provided in the site master plan and is fully operational in the park. Gender perspectives are incorporated in the formulation, management and monitoring of plans and programs. A particular entity (e.g. planning unit or facilitated group of interested firm representatives) exists, which investigates and plans for future developments/challenges to the social environment due to the introduction of new technologies such as “Industry 4.0” and AI-controlled production processes. • At least 75% of firms with more than 250 employees have a harassment prevention and response system in place. • At least 50% of underrepresented genders in workforce in the park management and firms benefit from skills development programs. • Number of SME-staff, IP management staff and service providers trained • Number of involved staff from relevant governmental agencies
SDG indicator 6.3.1: Proportion of domestic and industrial wastewater flows safely treated	• Park management entity operates an environmental/energy management system in line with internationally certified standards, monitoring park performance and supporting resident firms in the maintenance of their own firm-level management systems. For this purpose, it records all relevant data, preferably managed by a dedicated environmental monitoring and recording unit/group.	• Park management entity keeps updated records on energy, water, waste products, and materials inefficiencies and needs at tenant firms to provide a basis for industrial synergies development. • 100% of total water demand from firms in industrial park does not negatively impact local water sources or communities.

	• Park management entity has operational plans to increase water reuse in next five years. This would be achieved by either reuse of industrial effluents, or by rainwater/storm water collection. • Park management entity provides the physical network for water reuse/cascading of water. • At least 25% of total industrial wastewater from firms is reused responsibly within or outside the industrial park. • Number of involved staff from relevant governmental agencies • Conducive policies and regulations implemented and enforced and EIP promoted by strong custodian at the national level	• 100% of industrial wastewater generated by industrial park and resident firms is treated in accordance with appropriate environmental standards. • Number of SME-staff, IP management staff and service providers trained • Number of EIPs activities by enterprises • Number of initiatives of provider of business services • Actual investments in RECP/EIP identified options
SDG indicator 6.4.1: Change in water-use efficiency over time	• Park management entity operates an environmental/energy management system in line with internationally certified standards, monitoring park performance and supporting resident firms in the maintenance of their own firm-level management systems. For this purpose it records all relevant data, preferably managed by a dedicated environmental monitoring and recording unit/group. • Park management entity keeps updated records on energy, water, waste products, and materials inefficiencies and needs at tenant firms to provide a basis for industrial synergies development. • Park management entity provides the physical network for water reuse/cascading of water. • 100% of total water demand from firms in industrial park does not negatively impact local water sources or communities. • At least 20% of manufacturing firms adopt circular economy practices, including engagement in Industrial Symbiosis Networks in the park; or actively exchange secondary raw materials, or waste, or other circular economy practices. • Number of involved staff from relevant governmental agencies • Conducive policies and regulations implemented and enforced and EIP promoted by strong custodian at the national level	• Park management entity has operational plans to increase water reuse in next five years. This would be achieved by either reuse of industrial effluents, or by rainwater/storm water collection. • At least 25% of total industrial wastewater from firms is reused responsibly within or outside the industrial park. • Number of SME-staff, IP management staff and service providers trained • Number of EIPs activities by enterprises • Number of initiatives of provider of business services • Actual investments in RECP/EIP identified options

SDG indicator 6.4.2: Level of water stress: freshwater withdrawal as a proportion of available freshwater resources	• Park management entity operates an environmental/energy management system in line with internationally certified standards, monitoring park performance and supporting resident firms in the maintenance of their own firm-level management systems. For this purpose it records all relevant data, preferably managed by a dedicated environmental monitoring and recording unit/group. • Park management entity keeps updated records on energy, water, waste products, and materials inefficiencies and needs at tenant firms to provide a basis for industrial synergies development. • Park management entity has operational plans to increase water reuse in next five years. This would be achieved by either reuse of industrial effluents, or by rainwater/storm water collection. • Park management entity provides the physical network for water reuse/cascading of water. • Conducive policies and regulations implemented and enforced and EIP promoted by strong custodian at the national level	• The park management entity has a plan in place to assess operational environmental impacts, and aims to limit these impacts on prioritized local ecosystem services. • The park management implements measures to protect biodiversity, and protects or creates natural/recreational areas in and surrounding the park. • 100% of total water demand from firms in industrial park does not negatively impact local water sources or communities. • At least 25% of total industrial wastewater from firms is reused responsibly within or outside the industrial park. • At least 30% of firms in industrial park have a risk management framework in place that: (a) identifies activities which have an impact on the environment, and; (b) assigns a level of significance to each activity, and; (c) has appropriate mitigation measures in place. • Number of SME-staff, IP management staff and service providers trained • Number of involved staff from relevant governmental agencies • Number of EIPs activities by enterprises • Number of initiatives of provider of business services • Actual investments in RECP/EIP identified options
SDG indicator 6.5.1: Degree of integrated water	• 100% of industrial wastewater generated by industrial park and resident firms is treated in accordance with appropriate environmental standards.	• Park management entity operates an environmental/energy management system in line with internationally certified standards, monitoring park performance and supporting resident firms in the maintenance of their own firm-level

resources management	• At least 25% of total industrial wastewater from firms is reused responsibly within or outside the industrial park. • Number of involved staff from relevant governmental agencies • Conducive policies and regulations implemented and enforced and EIP promoted by strong custodian at the national level	management systems. For this purpose it records all relevant data, preferably managed by a dedicated environmental monitoring and recording unit/group. • Park management entity keeps updated records on energy, water, waste products, and materials inefficiencies and needs at tenant firms to provide a basis for industrial synergies development. • The park management entity has a plan in place to assess operational environmental impacts, and aims to limit these impacts on prioritized local ecosystem services. • The park management implements measures to protect biodiversity, and protects or creates natural/recreational areas in and surrounding the park. • 100% of total water demand from firms in industrial park does not negatively impact local water sources or communities. • Number of SME-staff, IP management staff and service providers trained • Number of EIPs activities by enterprises • Number of initiatives of provider of business services • Actual investments in RECP/EIP identified options
SDG indicator 7.1.2: Proportion of population with primary reliance on clean fuels and technology	• Park management entity operates an environmental/energy management system in line with internationally certified standards, monitoring park performance and supporting resident firms in the maintenance of their own firm-level management systems. For this purpose it records all relevant data, preferably managed by a dedicated environmental monitoring and recording unit/group.	• Park management provides the physical network for waste heat/energy exchange at park level, and assists firms to connect to the network. A commonly accepted rewards system for waste heat/energy provision/use is in place. • A program is established with clear evidence of steps taken to monitor, mitigate and/or minimize

	• Park management entity keeps updated records on energy, water, waste products, and materials inefficiencies and needs at tenant firms to provide a basis for industrial synergies development. • Supporting programs (e.g., energy efficiency networks) are in place to improve the energy efficiency of major energy-consuming businesses in the park. • The park management entity has a plan in place to assess operational environmental impacts, and aims to limit these impacts on prioritized local ecosystem services. • Number of involved staff from relevant governmental agencies	GHG emissions such as carbon dioxide (CO2), methane (CH4), and nitrogen oxides (NOx). • Reducing CO2-emissions is an integral part of the park's code of conduct, which urges firms to reduce their carbon footprint. The park acknowledges actions in this regard through an awards and incentive system. • Total renewable energy use for electricity and heat production in the industrial park is equal to or greater than the renewable energy share in the annual national electricity mix in the grid. • The equivalent of at least 10% of the total CO2 emissions (Scope 1 and 2) at park level is covered by the percentage of firms that have a qualified energy efficiency certification (LEED , Industry EDGE, DGNB or ISO 50001 or their national equivalent). • At least 50% of firms in park have pollution prevention and emission reduction strategies to reduce the intensity and mass flow of pollution/emission releases which exceed national regulations. • Number of SME-staff, IP management staff and service providers trained • Number of EIPs activities by enterprises • Number of initiatives of provider of business services • Actual investments in RECP/EIP identified options
SDG indicator 7.2.1: Renewable energy share in the total final	• Park management entity operates an environmental/energy management system in line with internationally certified standards, monitoring park performance and supporting resident firms in the maintenance of their own firm-level management systems. For this	• Park management entity keeps updated records on energy, water, waste products, and materials inefficiencies and needs at tenant firms to provide a basis for industrial synergies development.

energy consumption	purpose it records all relevant data, preferably managed by a dedicated environmental monitoring and recording unit/group. • An industrial heat recovery strategy is in place to investigate opportunities for heat and energy recovery for the major thermal energy-consuming firms in the park. (Typically, these are firms that individually use at least 10–20 percent of total firm level energy consumption). • Park management provides the physical network for waste heat/energy exchange at park level, and assists firms to connect to the network. A commonly accepted rewards system for waste heat/energy provision/use is in place. • The park management entity has a plan in place to assess operational environmental impacts, and aims to limit these impacts on prioritized local ecosystem services. • 100% of the park management and tenant firms have a metering system in place. • 20% of firm-level energy consumption is monitored. • Number of involved staff from relevant governmental agencies	• Supporting programs (e.g., energy efficiency networks) are in place to improve the energy efficiency of major energy-consuming businesses in the park. • A program is established with clear evidence of steps taken to monitor, mitigate and/or minimize GHG emissions such as carbon dioxide (CO2), methane (CH4), and nitrogen oxides (NOx). • Reducing CO2-emissions is an integral part of the park's code of conduct, which urges firms to reduce their carbon footprint. The park acknowledges actions in this regard through an awards and incentive system. • Total renewable energy use for electricity and heat production in the industrial park is equal to or greater than the renewable energy share in the annual national electricity mix in the grid. • The equivalent of at least 10% of the total CO2 emissions (Scope 1 and 2) at park level is covered by the percentage of firms that have a qualified energy efficiency certification (LEED , Industry EDGE, DGNB or ISO 50001 or their national equivalent). • Number of SME-staff, IP management staff and service providers trained • Number of EIPs activities by enterprises • Number of initiatives of provider of business services • Actual investments in RECP/EIP identified options
SDG indicator 7.3.1: Energy intensity measured in	• Park management entity operates an environmental/energy management system in line with internationally certified standards, monitoring park performance and supporting resident firms in the maintenance of their own firm-level management systems. For this	• Park management entity keeps updated records on energy, water, waste products, and materials inefficiencies and needs at tenant firms to provide a basis for industrial synergies development.

terms of primary energy and GDP	purpose it records all relevant data, preferably managed by a dedicated environmental monitoring and recording unit/group. • Park management provides the physical network for waste heat/energy exchange at park level, and assists firms to connect to the network. A commonly accepted rewards system for waste heat/energy provision/use is in place. • The park management entity has a plan in place to assess operational environmental impacts, and aims to limit these impacts on prioritized local ecosystem services. • Number of involved staff from relevant governmental agencies	• Supporting programs (e.g., energy efficiency networks) are in place to improve the energy efficiency of major energy-consuming businesses in the park. • An industrial heat recovery strategy is in place to investigate opportunities for heat and energy recovery for the major thermal energy-consuming firms in the park. (Typically, these are firms that individually use at least 10–20 percent of total firm level energy consumption). • A program is established with clear evidence of steps taken to monitor, mitigate and/or minimize GHG emissions such as carbon dioxide (CO2), methane (CH4), and nitrogen oxides (NOx). • Reducing CO2-emissions is an integral part of the park's code of conduct, which urges firms to reduce their carbon footprint. The park acknowledges actions in this regard through an awards and incentive system. • At least 10% of a firm's energy consumption is covered by an energy management system. • 100% of the park management and tenant firms have a metering system in place. • 20% of firm-level energy consumption is monitored. • Total renewable energy use for electricity and heat production in the industrial park is equal to or greater than the renewable energy share in the annual national electricity mix in the grid. • The equivalent of at least 10% of the total CO2 emissions (Scope 1 and 2) at park level is covered by the percentage of firms that have a qualified energy efficiency certification (LEED , Industry

		EDGE, DGNB or ISO 50001 or their national equivalent). • Number of SME-staff, IP management staff and service providers trained • Number of EIPs activities by enterprises • Number of initiatives of provider of business services • Actual investments in RECP/EIP identified options
SDG indicator 7.a.1: International financial flows to developing countries in support of clean energy research and development and renewable energy production, including in hybrid systems	• Number of involved staff from relevant governmental agencies	• Number of EIPs activities by enterprises • Number of initiatives of provider of business services • Actual investments in RECP/EIP identified options
SDG indicator 7.b.1: Installed renewable energy-generating capacity in developing countries (in watts per capita)	• A program is established with clear evidence of steps taken to monitor, mitigate and/or minimize GHG emissions such as carbon dioxide (CO2), methane (CH4), and nitrogen oxides (NOx). • Reducing CO2-emissions is an integral part of the park's code of conduct, which urges firms to reduce their carbon footprint. The park acknowledges actions in this regard through an awards and incentive system. • At least 10% of a firm's energy consumption is covered by an energy management system.	• Total renewable energy use for electricity and heat production in the industrial park is equal to or greater than the renewable energy share in the annual national electricity mix in the grid.

	• 100% of the park management and tenant firms have a metering system in place. • 20% of firm-level energy consumption is monitored. • The equivalent of at least 10% of the total CO2 emissions (Scope 1 and 2) at park level is covered by the percentage of firms that have a qualified energy efficiency certification (LEED, Industry EDGE, DGNB or ISO 50001 or their national equivalent).	
SDG indicator 8.1.1: Annual growth rate of real GDP per capita	• Park management entity allows and promotes the establishment of SMEs that provide services and add value to park residents. • Park management entity has a strategy in place to maximize local benefits. • A market demand and feasibility study, supported by a business plan for specific "green" infrastructure and services has been undertaken to justify planning and implementation in the industrial park. • Park management is financially solvent to operate/provide park infrastructure and services. • The park management should be economically viable in terms of contributing to jobs, technology, and acting as a catalyst to development of local industry. • Park management entity is responsible for marketing the park and park concepts (EIP concept) to potential national and international investors. • The park management should render its services at realistic costs to cover operational expenditures. • At least 25% of resident firms use local suppliers or service providers for at least 25 percent of their total procurement value. • At least 90% of total procurement budget of park management entity is paid to local service providers within 100 km radius by the park management entity.	• Number of EIPs activities by enterprises • Number of initiatives of provider of business services • Actual investments in RECP/EIP identified options

	• At least 50% of space is rented or used by resident firms compared to the total amount of available space earmarked for firms within the park.	
SDG indicator 8.2.1: Annual growth rate of real GDP per employed person	• Park management entity allows and promotes the establishment of SMEs that provide services and add value to park residents. • Park management entity has a strategy in place to maximize local benefits. • A market demand and feasibility study, supported by a business plan for specific "green" infrastructure and services has been undertaken to justify planning and implementation in the industrial park. • Park management is financially solvent to operate/provide park infrastructure and services. • The park management should render its services at realistic costs to cover operational expenditures. • At least 25% of resident firms use local suppliers or service providers for at least 25 percent of their total procurement value. • At least 50% of space is rented or used by resident firms compared to the total amount of available space earmarked for firms within the park.	• The park management should be economically viable in terms of contributing to jobs, technology, and acting as a catalyst to development of local industry. • Park management entity is responsible for marketing the park and park concepts (EIP concept) to potential national and international investors. • At least 30% of total firm workers in industrial park employed through direct employment (that is, not employed on a fee-for-output basis or provided through a labor supply firm) and permanent contracts. • Number of EIPs activities by enterprises • Number of initiatives of provider of business services • Actual investments in RECP/EIP identified options
SDG indicator 8.3.1: Proportion of informal employment in total employment, by sector and sex	• Number of SME-staff, IP management staff and service providers trained • Conducive policies and regulations implemented and enforced and EIP promoted by strong custodian at the national level	• At least 30% of total firm workers in industrial park employed through direct employment (that is, not employed on a fee-for-output basis or provided through a labor supply firm) and permanent contracts.
• SDG indicator 8.4.1: Material footprint,	• A distinct park management entity (or alternative agency, where applicable) exists to handle park planning, operations and management, and monitoring.	• Park management entity operates an environmental/energy management system in line with internationally certified standards, monitoring park performance and supporting resident firms in the maintenance of their own firm-level

material footprint per capita, and material footprint per GDP	• Park management entity to manage and maintain the industrial park property, common infrastructure, and services as prescribed in the tenant contract. This should include at least the following: • Property management, including plot allotments, re-allotments, development, land use monitoring. • Utilities, roads, security (including IT security) and emergency response services/facilities and wastewater treatment plants and operations, including waste heat/energy recovery and distribution networks • Environmental monitoring and advisory activities • Common landscaping, buffer zones, street lighting, security surveillance and street cleaning. • Provide facilitating services to and between tenant firms (for example, networking, collaboration and training opportunities). • Engagement with the park's stakeholders and business representatives. • PR and community participation center/platform/activities. • Park management entity maintains an EIP framework monitoring system in place, tracking and reporting: • Progress on environmental, social and economic performance at the park level annually. • Critical risk factors and related responses, at least for: o Risk points for the accidental release of hazardous solid, liquid and gaseous effluents, including during transportation and disposal when fire hazards are possible; and o Applicable natural disaster risks (for example, earthquakes); o Environmental performance; o Social performance; o Economic performance; and o Critical risk management at the level of the park. • Acts as monitoring and pre-clearing institution for environmental issues on behalf of the regulatory bodies, as delegated. • May operate a central environment control unit with an emergency alert system for environmental and other hazards. • Park management entity has a system to collect, register and comply with local/national regulations and international standards applicable to the industrial park. Park management enforces	management systems. For this purpose it records all relevant data, preferably managed by a dedicated environmental monitoring and recording unit/group. • Park management entity keeps updated records on energy, water, waste products, and materials inefficiencies and needs at tenant firms to provide a basis for industrial synergies development. • Park management provides the physical network for waste heat/energy exchange at park level, and assists firms to connect to the network. A commonly accepted rewards system for waste heat/energy provision/use is in place. • Park management entity has operational plans to increase water reuse in next five years. This would be achieved by either reuse of industrial effluents, or by rainwater/storm water collection. • Obeying the principles of circular economy is part of the Park's Code of Conduct, and any legally binding agreement between tenant firms and the park authority. • A central park facility or other mechanism is in place to treat waste that cannot be processed by individual firms. • A program is established with clear evidence of steps taken to monitor, mitigate and/or minimize GHG emissions such as carbon dioxide (CO2), methane (CH4), and nitrogen oxides (NOx). • The park management entity has a plan in place to assess operational environmental impacts, and aims to limit these impacts on prioritized local ecosystem services. • At least 25% of non-hazardous, solid industrial waste generated by firms is reused-recycled by

	compliance by resident firms and requests and collects compliance information that firms share with the park management entity. • Reducing CO2-emissions is an integral part of the park's code of conduct, which urges firms to reduce their carbon footprint. The park acknowledges actions in this regard through an awards and incentive system. • The park management implements measures to protect biodiversity, and protects or creates natural/recreational areas in and surrounding the park. • The equivalent of at least 10% of the total CO2 emissions (Scope 1 and 2) at park level is covered by the percentage of firms that have a qualified energy efficiency certification (LEED , Industry EDGE, DGNB or ISO 50001 or their national equivalent). • At least 30% of firms in industrial park have a risk management framework in place that: (a) identifies activities which have an impact on the environment, and; (b) assigns a level of significance to each activity, and; (c) has appropriate mitigation measures in place. • Number of SME-staff, IP management staff and service providers trained • Number of EIPs activities by enterprises • Number of initiatives of provider of business services • Actual investments in RECP/EIP identified options	other firms, neighbouring communities, or municipalities. • At least 20% of manufacturing firms adopt circular economy practices, including engagement in Industrial Symbiosis Networks in the park; or actively exchange secondary raw materials, or waste, or other circular economy practices. • 100% of waste generated by firms in the industrial park is safely disposed of. Open burning of waste generated in an EIP is prohibited. • At least 50% of firms in park have pollution prevention and emission reduction strategies to reduce the intensity and mass flow of pollution/emission releases which exceed national regulations.
SDG indicator 8.4.2: Domestic material consumption, domestic material consumption per capita, and domestic material	-	• Obeying the principles of circular economy is part of the Park's Code of Conduct, and any legally binding agreement between tenant firms and the park authority. • At least 20% of manufacturing firms adopt circular economy practices, including engagement in Industrial Symbiosis Networks in the park; or actively exchange secondary raw materials, or waste, or other circular economy practices.

consumption per GDP		
SDG indicator 8.5.1: Average hourly earnings of employees, by sex, age, occupation and persons with disabilities	• Dedicated personnel exist (as part of the park management entity) to plan and manage social quality standards. • At least 80 percent of women and 80 percent of men of the surveyed workers agree that each of these decent work criteria are met. • A market demand and feasibility study, supported by a business plan for specific "green" infrastructure and services has been undertaken to justify planning and implementation in the industrial park. • Park management entity is responsible for marketing the park and park concepts (EIP concept) to potential national and international investors. • Actual investments in RECP/EIP identified options	• 75% of firms in the industrial park with more than 250 employees have a program for skills/vocational training and development. • At least 50% of underrepresented genders in workforce in the park management and firms benefit from skills development programs. • At least 30% of total firm workers in industrial park employed through direct employment (that is, not employed on a fee-for-output basis or provided through a labor supply firm) and permanent contracts.
SDG indicator 8.5.2: Unemployment rate, by sex, age and persons with disabilities	• Dedicated personnel exist (as part of the park management entity) to plan and manage social quality standards. • Essential primary social infrastructure has been adequately provided in the site master plan and is fully operational in the park. Gender perspectives are incorporated in the formulation, management and monitoring of plans and programs. A particular entity (e.g. planning unit or facilitated group of interested firm representatives) exists, which investigates and plans for future developments/challenges to the social environment due to the introduction of new technologies such as "Industry 4.0" and AI controlled production processes. • At least 80 percent of women and 80 percent of men of the surveyed workers agree that each of these decent work criteria are met. • At least 80% of the surveyed employees report satisfaction with social infrastructure. • The park management should be economically viable in terms of contributing to jobs, technology, and acting as a catalyst to development of local industry.	• 75% of firms in the industrial park with more than 250 employees have a program for skills/vocational training and development. • At least 50% of underrepresented genders in workforce in the park management and firms benefit from skills development programs. • At least 30% of total firm workers in industrial park employed through direct employment (that is, not employed on a fee-for-output basis or provided through a labor supply firm) and permanent contracts.

	• Park management entity is responsible for marketing the park and park concepts (EIP concept) to potential national and international investors. • At least 50% of space is rented or used by resident firms compared to the total amount of available space earmarked for firms within the park.	
SDG indicator 8.8.1: Fatal and non-fatal occupational injuries per 100,000 workers, by sex and migrant status	• Dedicated personnel exist (as part of the park management entity) to plan and manage social quality standards. • At least 60% of grievances received by the park management entity are brought to conclusion. • At least 80 percent of women and 80 percent of men of the surveyed workers agree that each of these decent work criteria are met.	• At least 75% of firms with more than 250 employees have an OH&S management system in place. • 100% of reported security and safety issues are adequately addressed within 30 days.
SDG indicator 8.8.2: Level of national compliance with labour rights (freedom of association and collective bargaining) based on International Labour Organization (ILO) textual sources and national legislation, by sex and migrant status	• Essential primary social infrastructure has been adequately provided in the site master plan and is fully operational in the park. Gender perspectives are incorporated in the formulation, management and monitoring of plans and programs. A particular entity (e.g. planning unit or facilitated group of interested firm representatives) exists, which investigates and plans for future developments/challenges to the social environment due to the introduction of new technologies such as “Industry 4.0” and AI controlled production processes. • At least 75% of firms with more than 250 employees have an OH&S management system in place. • 100% of grievances received by the park management entity are responded to with statements of reasons within 14 days. • At least 60% of grievances received by the park management entity are brought to conclusion. • At least 75% of grievances received by the park management entity are concluded within 60 days. • At least 80 percent of women and 80 percent of men of the surveyed workers agree that each of these decent work criteria are met.	• Dedicated personnel exist (as part of the park management entity) to plan and manage social quality standards. • At least 75% of firms with more than 250 employees have a harassment prevention and response system in place.

	• 100% of reported security and safety issues are adequately addressed within 30 days.	
SDG indicator 9.2.1: Manufacturing value added as a proportion of GDP and per capita	• Park management entity has a strategy in place to maximize local benefits. • Park management is financially solvent to operate/provide park infrastructure and services. • The park management should be economically viable in terms of contributing to jobs, technology, and acting as a catalyst to development of local industry. • Park management entity is responsible for marketing the park and park concepts (EIP concept) to potential national and international investors. • The park management should render its services at realistic costs to cover operational expenditures. • At least 30% of total firm workers in industrial park employed through direct employment (that is, not employed on a fee-for-output basis or provided through a labor supply firm) and permanent contracts. • At least 25% of resident firms use local suppliers or service providers for at least 25 percent of their total procurement value. • At least 90% of total procurement budget of park management entity is paid to local service providers within 100 km radius by the park management entity. • Number of SME-staff, IP management staff and service providers trained • Number of involved staff from relevant governmental agencies • Actual investments in RECP/EIP identified options	• Park management entity allows and promotes the establishment of SMEs that provide services and add value to park residents. • A market demand and feasibility study, supported by a business plan for specific “green” infrastructure and services has been undertaken to justify planning and implementation in the industrial park. • At least 50% of space is rented or used by resident firms compared to the total amount of available space earmarked for firms within the park.
SDG indicator 9.2.2: Manufacturing employment as a proportion of	• Dedicated personnel exist (as part of the park management entity) to plan and manage social quality standards. • Essential primary social infrastructure has been adequately provided in the site master plan and is fully operational in the park. Gender perspectives are incorporated in the formulation, management and	• 75% of firms in the industrial park with more than 250 employees have a program for skills/vocational training and development.

total employment	monitoring of plans and programs. A particular entity (e.g. planning unit or facilitated group of interested firm representatives) exists, which investigates and plans for future developments/challenges to the social environment due to the introduction of new technologies such as “Industry 4.0” and AI controlled production processes. • At least 75% of firms with more than 250 employees have an OH&S management system in place. • At least 80 percent of women and 80 percent of men of the surveyed workers agree that each of these decent work criteria are met. • At least 80% of the surveyed employees report satisfaction with social infrastructure. • At least 80% of surveyed community members are satisfied with the park’s efforts to communicate. • At least two outreach activities are implemented by the park management entity annually are regarded as positive by over 80 percent of the surveyed community members. • Park management entity allows and promotes the establishment of SMEs that provide services and add value to park residents. • Park management entity has a strategy in place to maximize local benefits. • A market demand and feasibility study, supported by a business plan for specific “green” infrastructure and services has been undertaken to justify planning and implementation in the industrial park. • At least 50% of space is rented or used by resident firms compared to the total amount of available space earmarked for firms within the park. • Actual investments in RECP/EIP identified options	• At least 50% of underrepresented genders in workforce in the park management and firms benefit from skills development programs. • At least 30% of total firm workers in industrial park employed through direct employment (that is, not employed on a fee-for-output basis or provided through a labor supply firm) and permanent contracts.
SDG indicator 9.4.1: CO2 emission per unit of value added	• Park management entity operates an environmental/energy management system in line with internationally certified standards, monitoring park performance and supporting resident firms in the maintenance of their own firm-level management systems. For this	• Supporting programs (e.g., energy efficiency networks) are in place to improve the energy efficiency of major energy-consuming businesses in the park.

	purpose it records all relevant data, preferably managed by a dedicated environmental monitoring and recording unit/group. • Park management entity keeps updated records on energy, water, waste products, and materials inefficiencies and needs at tenant firms to provide a basis for industrial synergies development. • Park management provides the physical network for waste heat/energy exchange at park level, and assists firms to connect to the network. A commonly accepted rewards system for waste heat/energy provision/use is in place. • Obeying the principles of circular economy is part of the Park's Code of Conduct, and any legally binding agreement between tenant firms and the park authority. • At least 10% of a firm's energy consumption is covered by an energy management system. • 100% of waste generated by firms in the industrial park is safely disposed of. Open burning of waste generated in an EIP is prohibited. • A market demand and feasibility study, supported by a business plan for specific "green" infrastructure and services has been undertaken to justify planning and implementation in the industrial park. • Number of SME-staff, IP management staff and service providers trained • Number of involved staff from relevant governmental agencies • Number of EIPs activities by enterprises • Number of initiatives of provider of business services • Actual investments in RECP/EIP identified options	• An industrial heat recovery strategy is in place to investigate opportunities for heat and energy recovery for the major thermal energy-consuming firms in the park. (Typically, these are firms that individually use at least 10–20 percent of total firm level energy consumption). • A program is established with clear evidence of steps taken to monitor, mitigate and/or minimize GHG emissions such as carbon dioxide (CO2), methane (CH4), and nitrogen oxides (NOx). • Reducing CO2-emissions is an integral part of the park's code of conduct, which urges firms to reduce their carbon footprint. The park acknowledges actions in this regard through an awards and incentive system. • 100% of the park management and tenant firms have a metering system in place. • 20% of firm-level energy consumption is monitored. • Total renewable energy use for electricity and heat production in the industrial park is equal to or greater than the renewable energy share in the annual national electricity mix in the grid. • The equivalent of at least 10% of the total CO2 emissions (Scope 1 and 2) at park level is covered by the percentage of firms that have a qualified energy efficiency certification (LEED , Industry EDGE, DGNB or ISO 50001 or their national equivalent). • At least 50% of firms in park have pollution prevention and emission reduction strategies to reduce the intensity and mass flow of pollution/emission releases which exceed national regulations.

SDG indicator 9.b.1: Proportion of medium and high-tech industry value added in total value added	• Park management entity is responsible for marketing the park and park concepts (EIP concept) to potential national and international investors.	• A market demand and feasibility study, supported by a business plan for specific "green" infrastructure and services has been undertaken to justify planning and implementation in the industrial park.
SDG indicator 10.4.1: Labour share of GDP	• At least 50% of underrepresented genders in workforce in the park management and firms benefit from skills development programs. • At least 30% of total firm workers in industrial park employed through direct employment (that is, not employed on a fee-for-output basis or provided through a labor supply firm) and permanent contracts. • At least 25% of resident firms use local suppliers or service providers for at least 25 percent of their total procurement value. • At least 90% of total procurement budget of park management entity is paid to local service providers within 100 km radius by the park management entity.	• 75% of firms in the industrial park with more than 250 employees have a program for skills/vocational training and development.
SDG indicator 11.6.1: Proportion of municipal solid waste collected and managed in controlled facilities out of total municipal waste generated, by cities	• At least 20% of manufacturing firms adopt circular economy practices, including engagement in Industrial Symbiosis Networks in the park; or actively exchange secondary raw materials, or waste, or other circular economy practices.	• At least 25% of non-hazardous, solid industrial waste generated by firms is reused-recycled by other firms, neighbouring communities, or municipalities. • 100% of firms in park appropriately handle, store, transport and dispose of toxic and hazardous materials. • 100% of waste generated by firms in the industrial park is safely disposed of. Open burning of waste generated in an EIP is prohibited.
SDG indicator 11.6.2: Annual mean levels of fine particulate	• Park management entity maintains an EIP framework monitoring system in place, tracking and reporting: • Progress on environmental, social and economic performance at the park level annually.	• The park management entity has a plan in place to assess operational environmental impacts, and

matter (e.g. PM2.5 and PM10) in cities (population weighted)	• Critical risk factors and related responses, at least for: o Risk points for the accidental release of hazardous solid, liquid and gaseous effluents, including during transportation and disposal when fire hazards are possible; and o Applicable natural disaster risks (for example, earthquakes); o Environmental performance; o Social performance; o Economic performance; and o Critical risk management at the level of the park. • Acts as monitoring and pre-clearing institution for environmental issues on behalf of the regulatory bodies, as delegated. • May operate a central environment control unit with an emergency alert system for environmental and other hazards. • Park management entity has a system to collect, register and comply with local/national regulations and international standards applicable to the industrial park. Park management enforces compliance by resident firms and requests and collects compliance information that firms share with the park management entity. • Park management entity operates an environmental/energy management system in line with internationally certified standards, monitoring park performance and supporting resident firms in the maintenance of their own firm-level management systems. For this purpose it records all relevant data, preferably managed by a dedicated environmental monitoring and recording unit/group.	aims to limit these impacts on prioritized local ecosystem services. • At least 50% of firms in park have pollution prevention and emission reduction strategies to reduce the intensity and mass flow of pollution/emission releases which exceed national regulations. • At least 30% of firms in industrial park have a risk management framework in place that: (a) identifies activities which have an impact on the environment, and; (b) assigns a level of significance to each activity, and; (c) has appropriate mitigation measures in place.
SDG indicator 12.2.1: Material footprint, material footprint per capita, and material footprint per GDP	• Park management entity maintains an EIP framework monitoring system in place, tracking and reporting: • Progress on environmental, social and economic performance at the park level annually. • Critical risk factors and related responses, at least for: o Risk points for the accidental release of hazardous solid, liquid and gaseous effluents, including during transportation and disposal when fire hazards are possible; and o Applicable natural disaster risks (for example, earthquakes); o Environmental performance; o Social performance; o Economic performance; and	• Obeying the principles of circular economy is part of the Park's Code of Conduct, and any legally binding agreement between tenant firms and the park authority. • At least 20% of manufacturing firms adopt circular economy practices, including engagement in Industrial Symbiosis Networks in the park; or actively exchange secondary raw materials, or waste, or other circular economy practices.

	○ Critical risk management at the level of the park. • Acts as monitoring and pre-clearing institution for environmental issues on behalf of the regulatory bodies, as delegated. • May operate a central environment control unit with an emergency alert system for environmental and other hazards. • Park management entity operates an environmental/energy management system in line with internationally certified standards, monitoring park performance and supporting resident firms in the maintenance of their own firm-level management systems. For this purpose it records all relevant data, preferably managed by a dedicated environmental monitoring and recording unit/group. • Park management entity keeps updated records on energy, water, waste products, and materials inefficiencies and needs at tenant firms to provide a basis for industrial synergies development. • A central park facility or other mechanism is in place to treat waste that cannot be processed by individual firms. • A monitoring system is in place that controls and registers origin, type, mode and route of transport, and final destination of waste/secondary raw material leaving the park. • 100% of waste generated by firms in the industrial park is safely disposed of. Open burning of waste generated in an EIP is prohibited.	
SDG indicator 12.2.2: Domestic material consumption, domestic material consumption per capita, and domestic material	• At least 25% of non-hazardous, solid industrial waste generated by firms is reused-recycled by other firms, neighbouring communities, or municipalities. • Number of SME-staff, IP management staff and service providers trained • Actual investments in RECP/EIP identified options • Conducive policies and regulations implemented and enforced and EIP promoted by strong custodian at the national level	• Obeying the principles of circular economy is part of the Park's Code of Conduct, and any legally binding agreement between tenant firms and the park authority. • At least 20% of manufacturing firms adopt circular economy practices, including engagement in Industrial Symbiosis Networks in the park; or actively exchange secondary raw materials, or waste, or other circular economy practices.

consumption per GDP		
SDG indicator 12.4.2: (a) Hazardous waste generated per capita; and (b) proportion of hazardous waste treated, by type of treatment	• Park management entity operates an environmental/energy management system in line with internationally certified standards, monitoring park performance and supporting resident firms in the maintenance of their own firm-level management systems. For this purpose it records all relevant data, preferably managed by a dedicated environmental monitoring and recording unit/group. • Park management entity keeps updated records on energy, water, waste products, and materials inefficiencies and needs at tenant firms to provide a basis for industrial synergies development. • A central park facility or other mechanism is in place to treat waste that cannot be processed by individual firms. • At least 20% of manufacturing firms adopt circular economy practices, including engagement in Industrial Symbiosis Networks in the park; or actively exchange secondary raw materials, or waste, or other circular economy practices.	• Obeying the principles of good practices for the management of hazardous materials and waste as part of legally binding agreements. • At least 25% of non-hazardous, solid industrial waste generated by firms is reused-recycled by other firms, neighbouring communities, or municipalities. • 100% of firms in park appropriately handle, store, transport and dispose of toxic and hazardous materials. • 100% of waste generated by firms in the industrial park is safely disposed of. Open burning of waste generated in an EIP is prohibited.
SDG indicator 12.5.1: National recycling rate, tons of material recycled	• Park management entity has operational plans to increase water reuse in next five years. This would be achieved by either reuse of industrial effluents, or by rainwater/storm water collection. • Park management entity provides the physical network for water reuse/cascading of water. • A central park facility or other mechanism is in place to treat waste that cannot be processed by individual firms. • A monitoring system is in place that controls and registers origin, type, mode and route of transport, and final destination of waste/secondary raw material leaving the park. • 100% of industrial wastewater generated by industrial park and resident firms is treated in accordance with appropriate environmental standards. • At least 25% of total industrial wastewater from firms is reused responsibly within or outside the industrial park.	• Obeying the principles of good practices for the management of hazardous materials and waste as part of legally binding agreements. • Obeying the principles of circular economy is part of the Park's Code of Conduct, and any legally binding agreement between tenant firms and the park authority. • At least 25% of non-hazardous, solid industrial waste generated by firms is reused-recycled by other firms, neighbouring communities, or municipalities. • At least 20% of manufacturing firms adopt circular economy practices, including engagement in Industrial Symbiosis Networks in the park; or actively exchange secondary raw materials, or waste, or other circular economy practices.

	• 100% of firms in park appropriately handle, store, transport and dispose of toxic and hazardous materials. • Number of SME-staff, IP management staff and service providers trained • Number of EIPs activities by enterprises • Number of initiatives of provider of business services • Actual investments in RECP/EIP identified options • Conducive policies and regulations implemented and enforced and EIP promoted by strong custodian at the national level	
SDG indicator 12.6.1: Number of companies publishing sustainability reports	• Park management entity operates an environmental/energy management system in line with internationally certified standards, monitoring park performance and supporting resident firms in the maintenance of their own firm-level management systems. For this purpose it records all relevant data, preferably managed by a dedicated environmental monitoring and recording unit/group. • Park management entity keeps updated records on energy, water, waste products, and materials inefficiencies and needs at tenant firms to provide a basis for industrial synergies development. • Park management entity is responsible for marketing the park and park concepts (EIP concept) to potential national and international investors.	• At least 80% of surveyed community members are satisfied with the park's efforts to communicate. • At least two outreach activities are implemented by the park management entity annually are regarded as positive by over 80 percent of the surveyed community members.
SDG indicator 12.7.1: Degree of sustainable public procurement policies and action plan implementation	• -	• At least 25% of resident firms use local suppliers or service providers for at least 25 percent of their total procurement value. • At least 90% of total procurement budget of park management entity is paid to local service providers within 100 km radius by the park management entity.
SDG indicator 12.a.1: Installed renewable	• Park management provides the physical network for waste heat/energy exchange at park level, and assists firms to connect to	• Total renewable energy use for electricity and heat production in the industrial park is equal to or

energy-generating capacity in developing countries (in watts per capita)	the network. A commonly accepted rewards system for waste heat/energy provision/use is in place. • A program is established with clear evidence of steps taken to monitor, mitigate and/or minimize GHG emissions such as carbon dioxide (CO2), methane (CH4), and nitrogen oxides (NOx). • Reducing CO2-emissions is an integral part of the park's code of conduct, which urges firms to reduce their carbon footprint. The park acknowledges actions in this regard through an awards and incentive system. • 100% of the park management and tenant firms have a metering system in place. • 20% of firm-level energy consumption is monitored. • Number of SME-staff, IP management staff and service providers trained • Number of EIPs activities by enterprises • Number of initiatives of provider of business services • Actual investments in RECP/EIP identified options	greater than the renewable energy share in the annual national electricity mix in the grid.
SDG indicator 13.2.2: Total greenhouse gas emissions per year	• Park management provides the physical network for waste heat/energy exchange at park level, and assists firms to connect to the network. A commonly accepted rewards system for waste heat/energy provision/use is in place. • Number of SME-staff, IP management staff and service providers trained • Number of EIPs activities by enterprises • Number of initiatives of provider of business services • Actual investments in RECP/EIP identified options	• Supporting programs (e.g., energy efficiency networks) are in place to improve the energy efficiency of major energy-consuming businesses in the park. • An industrial heat recovery strategy is in place to investigate opportunities for heat and energy recovery for the major thermal energy-consuming firms in the park. • A program is established with clear evidence of steps taken to monitor, mitigate and/or minimize GHG emissions such as carbon dioxide (CO2), methane (CH4), and nitrogen oxides (NOx). • Reducing CO2-emissions is an integral part of the park's code of conduct, which urges firms to reduce their carbon footprint. The park acknowledges

		actions in this regard through an awards and incentive system. • Total renewable energy use for electricity and heat production in the industrial park is equal to or greater than the renewable energy share in the annual national electricity mix in the grid. • The equivalent of at least 10% of the total CO2 emissions (Scope 1 and 2) at park level is covered by the percentage of firms that have a qualified energy efficiency certification (LEED , Industry EDGE, DGNB or ISO 50001 or their national equivalent). • At least 50% of firms in park have pollution prevention and emission reduction strategies to reduce the intensity and mass flow of pollution/emission releases which exceed national regulations.

ASSESSING THE CONTRIBUTION OF EIP PROJECTS TO SDGS

3

3. ASSESSING THE CONTRIBUTION OF EIP PROJECTS TO SDGS

3.1 METHODOLOGY TO ALLOCATE RESOURCES TO EIP INDICATORS

3.1.1 Allocation of financial project resources to EIP indicators

The previous chapter identified soft and hard linkages between SDG and EIP indicators[4]. To create the link to the GEIPP projects, the next step is to establish to which extent and proportion a GEIPP country-level intervention is contributing to the EIP indicators, and by extension through the established linkage, to the SDG indicators. This step consists of allocating the financial resources to the specific EIP indicators. This is done for both direct project resources as well as additional funds mobilized by the project, e.g., financing mobilized for EIP interventions.

To this end, the specific project activities or project outputs are linked to the relevant EIP indicator with two different modalities:

- Direct: the activity directly contributes to the improvement of an EIP indicator (or achievement of an EIP target);
- Preparatory: the activity does not contribute directly to the improvement of an EIP indicator but can be seen as preparatory towards it.

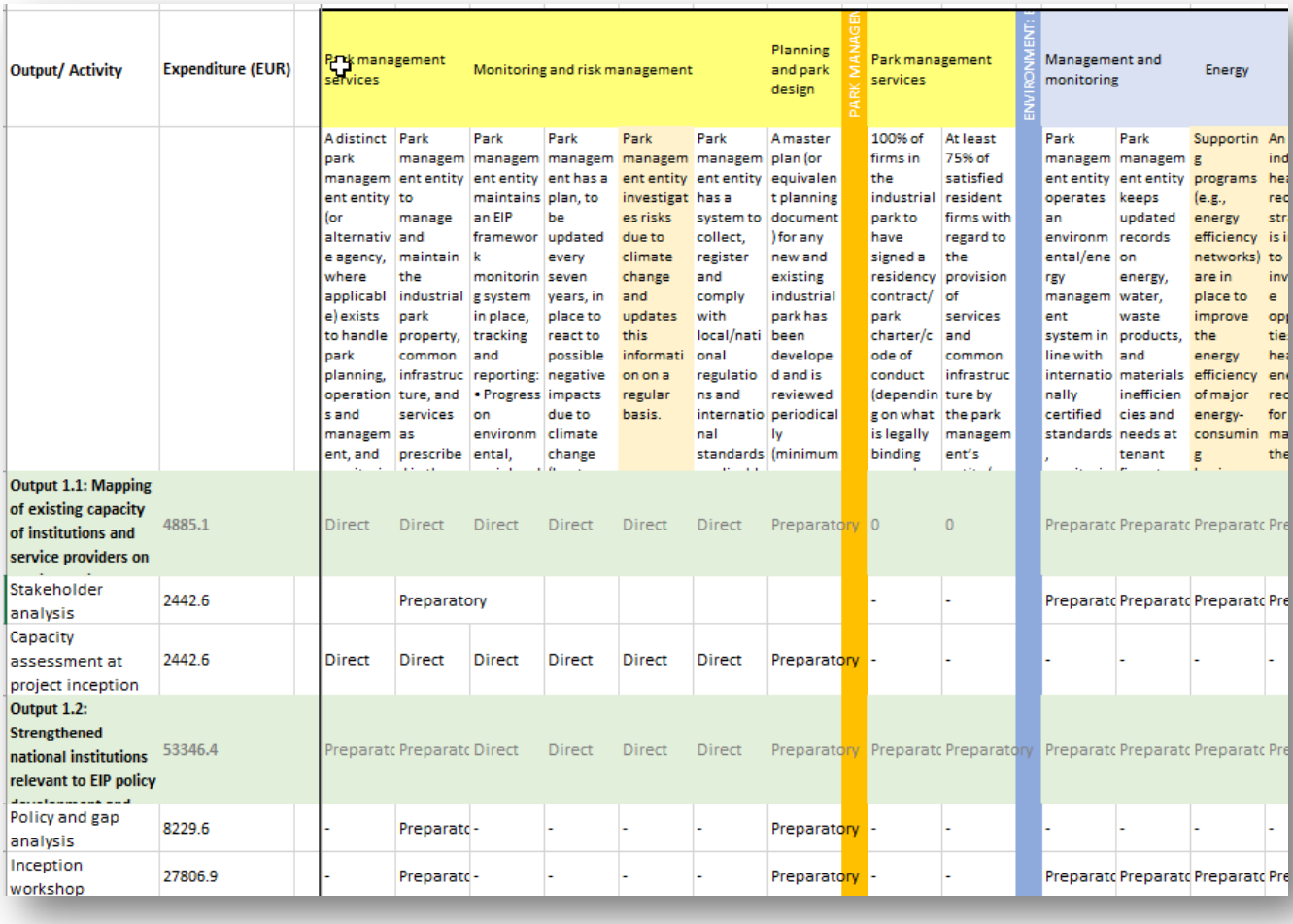
For illustrating this, the project expenses of the GEIPP-Vietnam project were used to allocate activity-related expenses to EIP indicators.

For example, the activity “preparation of an EIP policy and gap analysis report” was considered to be preparatory the following EIP indicators; i) the park management entity to manage and maintain the industrial park, ii) the development and regular update of a master plan for the new and existing industrial park, etc. (Table 3).

Based on the contributions of specific activities of GEIPP-Vietnam to EIP indicators, it is possible to determine the contribution of the overarching Output to the EIP indictors.

Subsequently, the expenditures associated with each activity or each output are distributed across all relevant EIP indicators. The distribution across relevant EIP indicators takes into consideration that ‘direct’ contributions carry more weight (double) than ‘preparatory’ contributions.

[4] The “EIP indicators” include the 64 indicators from the EIP International Framework V2 (https://openknowledge.worldbank.org/handle/10986/35110) and 6 indicators based on the UNIDO IRPF (see section 1.4).



Output/ Activity	Expenditure (EUR)	Park management services	Park management	Park management	Park management	Park management	Park management	Planning and park design	PARK MANAGEMENT	Park management services		ENVIRONMENT	Management and monitoring		Energy	
		A distinct park management entity (or alternative agency, where applicable) exists to handle park planning, operations and management, and	Park management entity to manage and maintain the industrial park property, common infrastructure, and services as prescribe	Park management entity maintains an EIP framework monitoring system in place, tracking and reporting: • Progress on environmental,	Park management has a plan, to be updated every seven years, in place to react to possible negative impacts due to climate change	Park management entity investigates risks due to climate change and updates this information on a regular basis.	Park management entity has a system to collect, register and comply with local/national regulations and international standards	A master plan (or equivalent planning document) for any new and existing industrial park has been developed and is reviewed periodically (minimum		100% of firms in the industrial park to have signed a residency contract/ park charter/code of conduct (depending on what is legally binding	At least 75% of satisfied resident firms with regard to the provision of services and common infrastructure by the park management's		Park management entity operates an environmental/energy management system in line with internationally certified standards,	Park management entity keeps updated records on energy, water, waste products, and materials inefficiencies and needs at tenant	Supporting programs (e.g., energy efficiency networks) are in place to improve the energy efficiency of major energy-consuming	An ind hea rec str is i to inv e opp tie hea en rec for ma the
Output 1.1: Mapping of existing capacity of institutions and service providers on	4885.1	Direct	Direct	Direct	Direct	Direct	Direct	Preparatory		0	0		Preparatc	Preparatc	Preparatc	Pre
Stakeholder analysis	2442.6		Preparatory							-	-		Preparatc	Preparatc	Preparatc	Pre
Capacity assessment at project inception	2442.6	Direct	Direct	Direct	Direct	Direct	Direct	Preparatory		-	-		-	-	-	-
Output 1.2: Strengthened national institutions relevant to EIP policy	53346.4	Preparatc	Preparatc	Direct	Direct	Direct	Direct	Preparatory		Preparatc	Preparatory		Preparatc	Preparatc	Preparatc	Pre
Policy and gap analysis	8229.6	-	Preparatc	-	-	-	-	Preparatory		-	-		-	-	-	-
Inception workshop	27806.9	-	Preparatc	-	-	-	-	Preparatory		-	-		Preparatc	Preparatc	Preparatc	Pre

Table 3. Contribution of specific activities and overarching outputs to EIP indicators

In this way, it is possible to highlight to which EIP indicators (or EIP topics[5]) project expenditures/resources contributed (Figure 4). In the GEIPP-Vietnam example, project resources in the first year of activities contributed the most to the EIP topic 'Waste and material use', followed by 'Energy', 'Climate change and the natural environment' and 'Social management systems'.

[5] A topic includes one or more EIP indicators

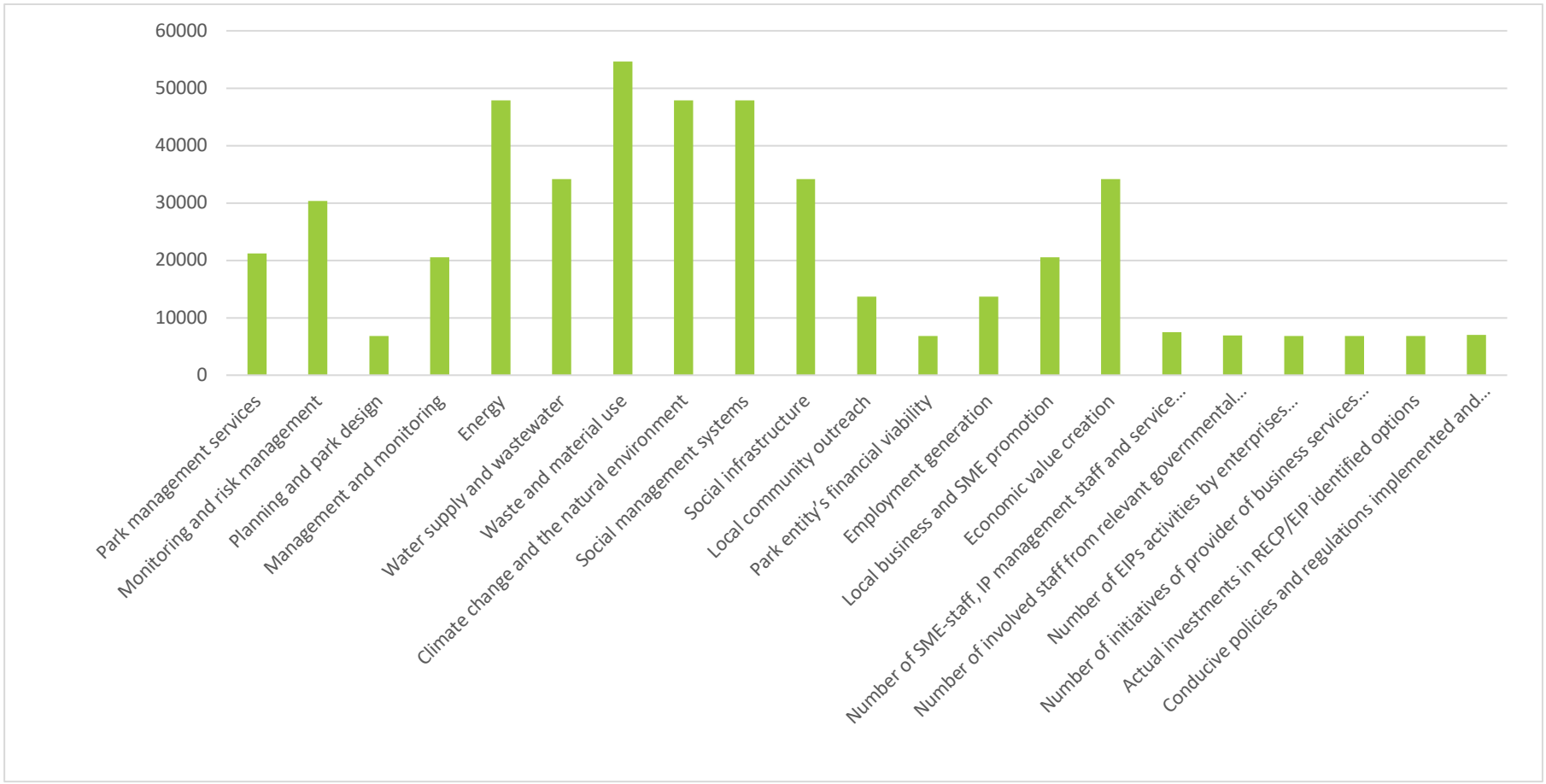


Figure 4. Contribution of project resources to EIP topics during the first year of implementation of GEIPP-Vietnam (EUR)

3.1.2 Allocation of mobilized resources to EIP indicators

Following the same methodology as for the allocation of financial project resources (or expenditures) to EIP indicators and topics, it is possible to allocate mobilized financial project resources to the same. A GEIPP project can mobilize resources in the form of private investments by the IP developer or by the resident companies, public investments for infrastructure, or co-financing in general.

In the example, thanks to the project, two investments were mobilized: a PV plant at an IP (155,000 euro) and the refurbishment of a wastewater treatment plant (95,000 euro).

As a result, the allocation of total project resources, including investment mobilized, to EIP topics is shown in Figure 5.

The EIP topics ‘Energy’ and ‘Water supply and wastewater’ now stand out as those which received most support by the project with 12 percent and 11 percent respectively of total project resources spent. The investment mobilized also contributed to increasing the number of EIP activities by enterprises and service providers, and are also captured as additional investments in RECP/EIP (Figure 5).

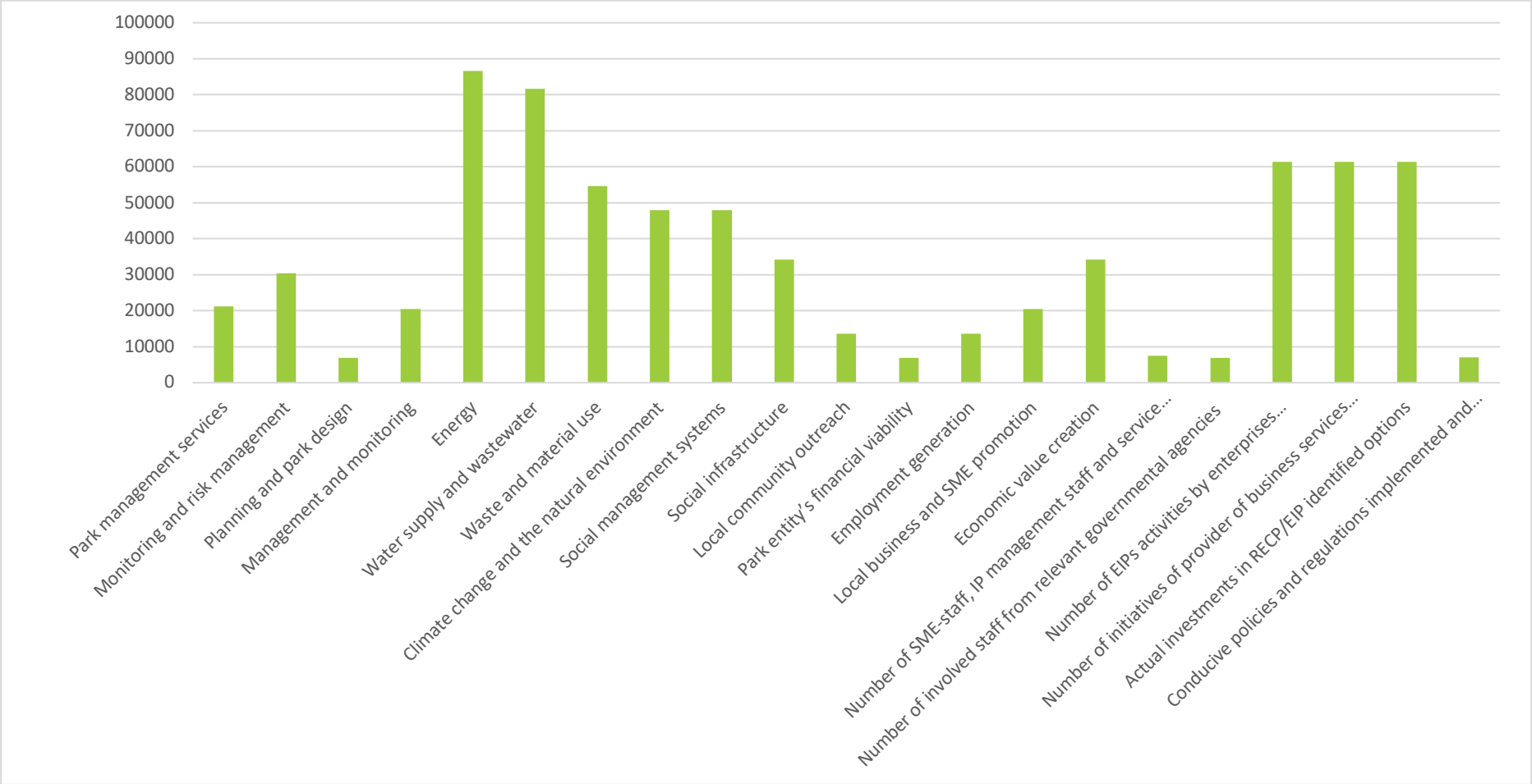


Figure 5. Example of contribution of project resources to EIP topics, including mobilized investments (EUR)

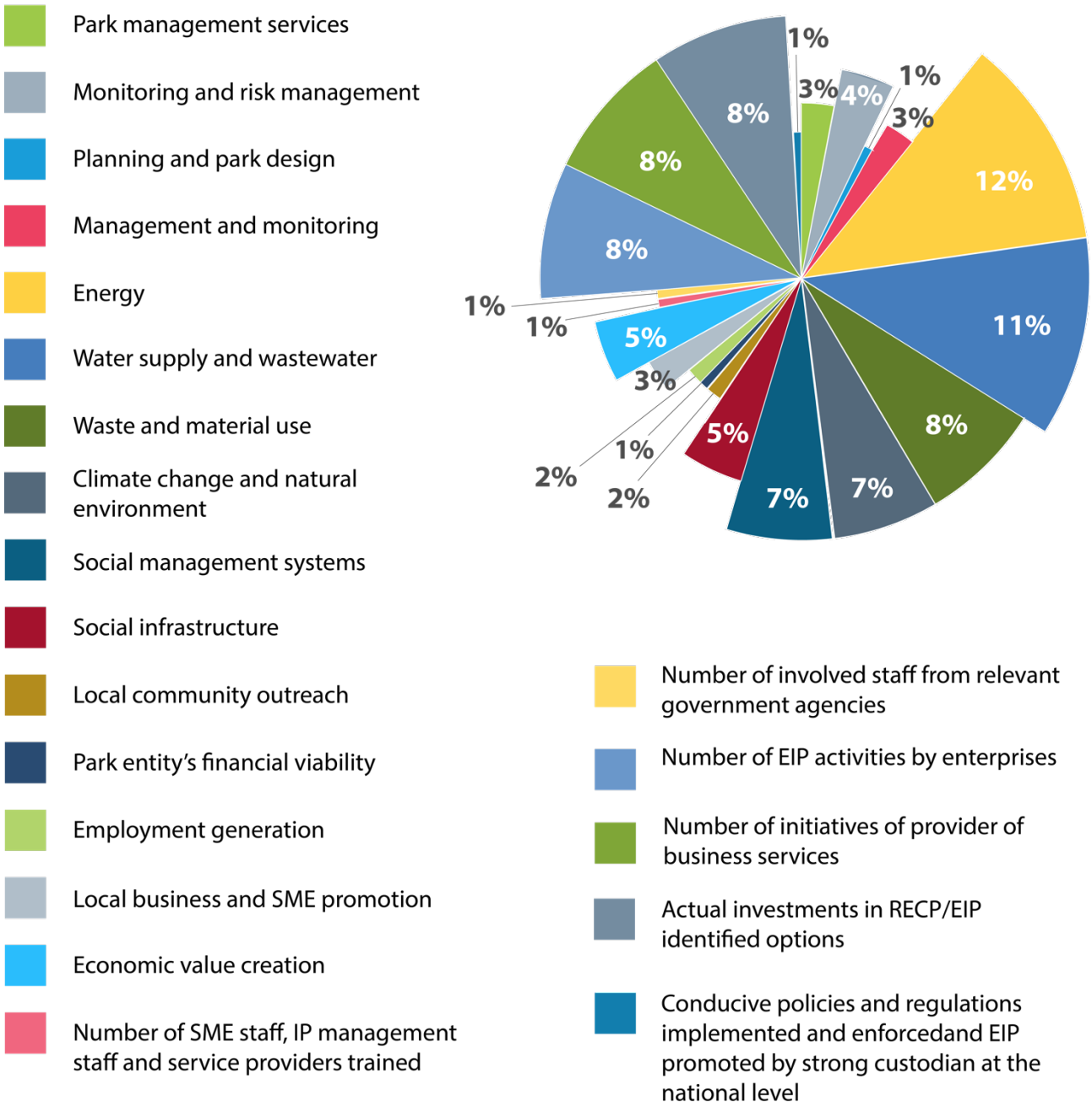


Figure 6. Percentage contribution of project resources to EIP topics, including mobilized investments

3.2 METHODOLOGY TO ALLOCATE RESOURCES TO SDGS

This step will clarify how to estimate the project contribution to SDGs.

Based on the soft or hard linkages identified between EIP indicators and SDG indicators and the allocation of 'Direct' and 'Preparatory' contributions of expenditures to EIP indicators, it is possible to allocate GEIPP project resources (project expenditures and/or resources mobilized) to the specific SDG indicators[6].

It should be noted that, although the linkages (hence the relevance) of EIP to SDG indicators are established as expert opinion, once defined, they can be used consistently throughout the assessment.

Based on the previous example, the resources associated with each SDG indicator are presented in Figure 6.

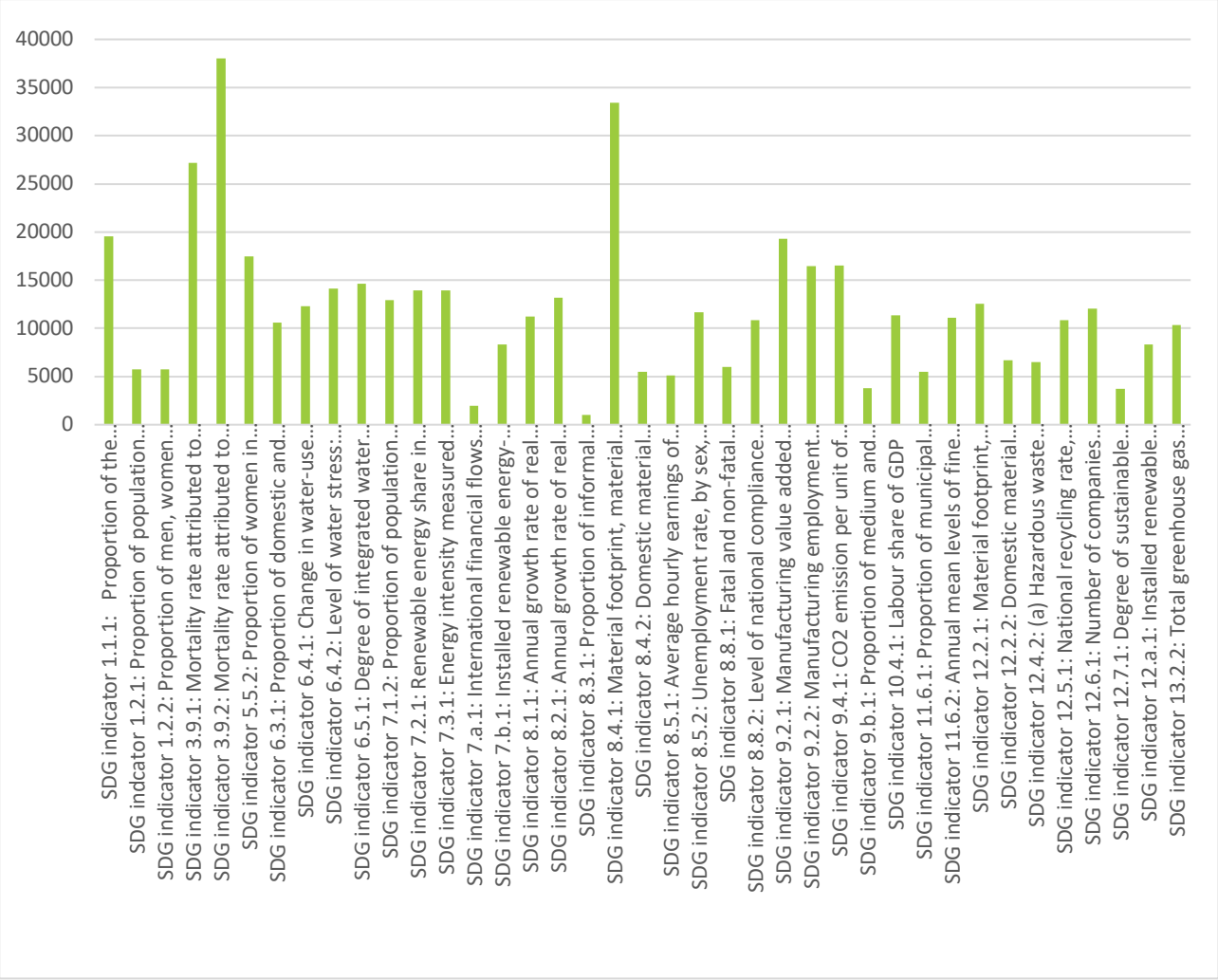


Figure 7. Example of allocation of project resources to SDG indicators (EUR)

[6] A weight of 1 is assigned to each 'hard linkage' and a weight of 0.5 is assigned to each 'soft linkage'. Subsequently, the resources allocated to one EIP indicator, are distributed across all hard and soft linkages, taking into consideration that a hard linkage has double the weight of a soft linkage.

By grouping the indicators of the same SDG, it is possible to assess the entire contribution to the specific SDGs. According to the linkages between EIP and SDG indicators proposed in Chapter 1, and the expenditures of the GEIPP-Vietnam example (Figure 7), it is possible to conclude that an important share of project resources contributed towards the achievement of SDG8 (Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all), SDG 3 (Ensure healthy lives and promote well-being for all at all ages), SDG 12 (Ensure sustainable consumption and production patterns), and SDG 9 (Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation), while a minor share contributed to SDG 10 (Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality), SDG 11 (Make cities and human settlements inclusive, safe, resilient and sustainable), and SDG 5 (Achieve gender equality and empower all women and girls).

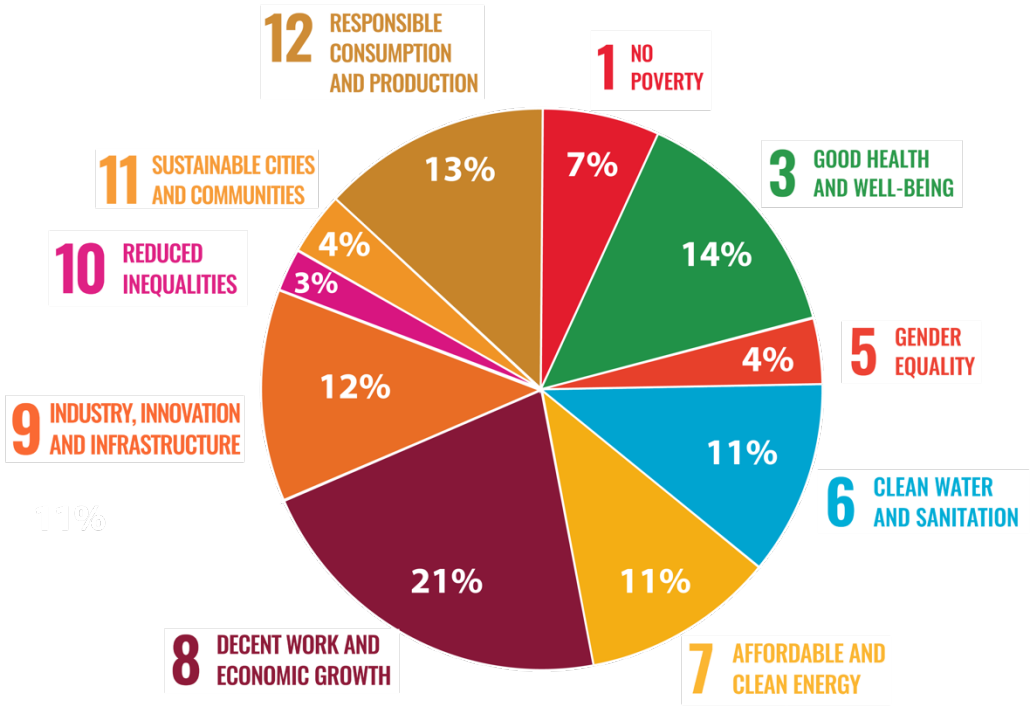


Figure 8. Example of contribution shares of project resources to SDGs

ESTABLISHING THE SDG CONTRIBUTION OF THE GEIPP

4

4. ESTABLISHING THE SDG CONTRIBUTION OF THE GEIPP

4.1 FROM ACCOUNTING OF EXPENDITURES BY ACTIVITIES TO ACCOUNTING BY OUTPUT

The methodology illustrated in chapter 2, presumes that the expenditure associated with each project activity is known and well identifiable. In practice, this information is often not readily available in implementing agencies (like UN organizations) and would imply some extra work of the project manager to keep a separate record of expenses. However, project resources and expenditures by output are always available, since donor reporting is usually based on outputs and outcomes.

Therefore, in an effort to simplify and automate the assessment of the contribution of GEIPP projects to SDGs, an expenditure assessment by output could be used as an alternative to the activity level expenditure assessment.

In the case of GEIPP projects, this is particularly suitable, since all country projects have a similar logical framework, and only the GEIPP global component has a different one (Table 4).

GEIPP country projects /component	GEIPP Global component
Outcome 1. EIP incentivized and mainstreamed in relevant policy and regulations	
Output 1.1. Mapping of existing capacity of institutions and service providers on eco-industrial parks development	
Output 1.2. Strengthened national institutions relevant to EIP policy development and implementation	***Outcome 3***. Knowledge building (of EIP services providers), capturing and sharing (amongst all key stakeholders) enhanced
Outcome 2. EIP opportunities identified and implementation started, with environmental, economic and social benefits achieved by enterprises confirmed	*Output 3.1:* Specific EIP tools developed
Output 2.1: Benchmarking and in-depth analysis of potential candidate industrial parks for EIP intervention	*Output 3.2:* EIP services delivery capacity strengthened
Output 2.2: Enhanced capacity of industrial parks and tenant companies to meet international and national standards and requirements for EIP	*Output 3.3:* Lessons learnt from EIP activities properly captured and effectively exchanged
Output 2.3: EIP requirements implemented by park management and tenant companies	*Output 3.4:* Activities to raise EIP awareness developed

Table 4. Outline of the logical framework of GEIPP components

On the basis of the contribution of *activities* to EIP indicators according to the first year of implementation of the Vietnam project, it was possible to identify the contribution of *outputs* to EIP indicators, and if this contribution could be considered 'direct' or merely 'preparatory' (see Table 3) according to the following convention:

- if any of the activities under the same output had at least one 'preparatory' link and no 'direct' link, then the output resulted in a 'preparatory' EIP link;
- if any of the activities under the same output, had at least one 'direct' link, then the output resulted in a 'direct' EIP link;
- no linkage between output and the EIP indicator in the other cases.

The resources allocated to an output are then distributed across the EIP indicators following the same approach as illustrated in section 2.1.1.

The same approach can be applied both to direct project financial resources and additional resources mobilized by the project.

4.2 ADVANTAGES AND DISADVANTAGES OF ACCOUNTING BY OUTPUT

An allocation of resources (project resources and mobilized resources) by project output has the big advantage that the information on financial resources is readily available and requires no effort to assess the contribution to EIP and SDGs, once the linkage between outputs and EIP indicators has been established.

Based on the first year of implementation of the GEIPP-Vietnam project, hard and soft linkages between project resources (project expenditures and investments mobilized) and project outputs are established, and these can be used as guidance. Since all GEIPP country projects have a similar project Logical Frameworks (similar outputs), the linkages found in one country project can be applied across all country projects with a good level of confidence.

As more activities are implemented under the GEIPP-Vietnam project in the future, the more it will be possible to refine the hard and soft linkages with the EIP indicators. Any additional effort may be limited to adjusting the linkages between outputs and EIP indicators based on the project manager's understanding.

As a drawback, this approach is 'coarser', since the actual activities implemented under each output may vary depending on the GEIPP country, thus having a slightly different contribution to their respective outputs.

In summary, although this approach is less complex and requires no additional effort relative to existing project monitoring, it is somewhat less precise than an assessment done by project activity. It has been developed to allow a quick assessment based on information readily available at each implementing agency.

By applying an assessment by output, it is possible to do cross-country comparisons based on current expenditures but also total project budgets. These comparisons will be discussed in the next chapter.

4.3 ACTUAL VS BUDGETED ALLOCATION TO EIP INDICATORS

By determining the project budget allocation against the EIP indicators (by output), it is also possible to compare it to the actual project contribution to EIP indicators.

This is useful to monitor project contributions against the different EIP indicators (and consequently the SDGs, by applying the methodology illustrated in Chapter 2), and to take corrective measures when needed.

For example, Figure 8 reports the contribution of a project[7] during the first year of operations, including expenditures and mobilized resources[8] (green bars) vis-à-vis the total project budget[9] (grey bars).

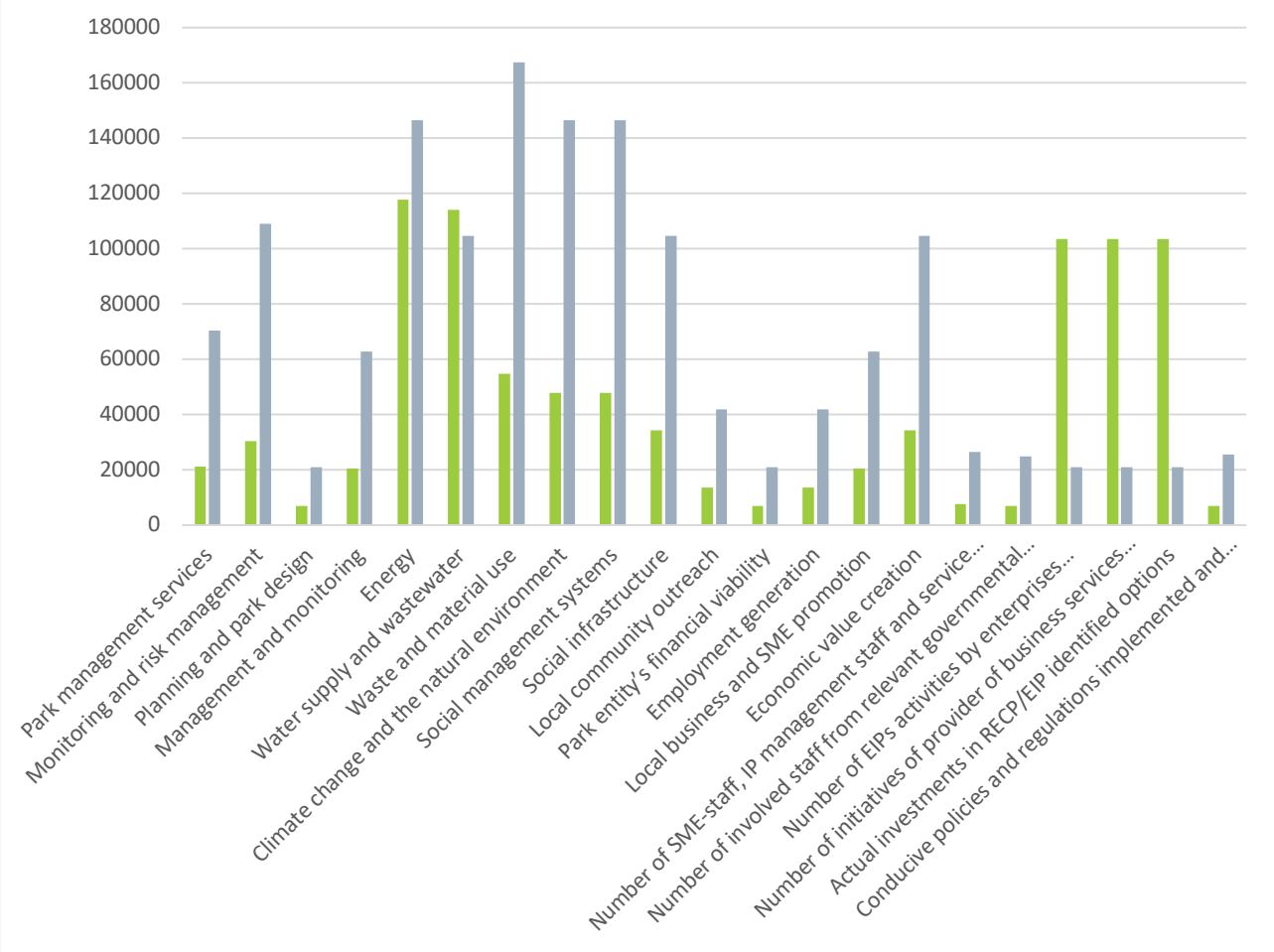


Figure 9. Example of Actual vs Budgeted contribution to EIP indicators, after 1 year of implementation, including a mobilized investment in a wastewater treatment plant and a photovoltaic plant.

[7] The example is based on GEIPP-Vietnam expenditures.

[8] Mobilized resources correspond to an investment of 180,000 euro in a wastewater treatment plant and of 280,000 euro in a photovoltaic plant in an industrial park.

[9] The total project budget refers to a 3-year project.

From the assessment of this example, it is clear that, although the project has only been implemented for one third (1 year out of 3 years) of the total project duration, the project resources allocated to the EIP topic “Water supply and wastewater” have already exceeded the total budgeted project expenditure for the same EIP topic. The mobilized investments also contributed to increasing the “number of EIP activities by enterprise”, the “number of initiatives by provider of business services” and the “actual investments in RECP/EIP identified options”.

At the end of the 3 years of implementation, all *actual* resources allocated to each EIP topic (the green bars) are expected to equal or surpass the contributions that were forecast under the initial budge

COMPARISON ACROSS GEIPP PROJECTS

5

5. COMPARISON ACROSS GEIPP PROJECTS

5.1 GEIPP PROJECTS CONTRIBUTION TO EIP INDICATORS AND CRITERIA

The seven GEIPP country projects (Colombia, Egypt, Indonesia, Peru, South Africa, Ukraine and Vietnam) have different overall budgets but a similar logical framework, therefore it can be expected that their contribution to EIP indicators will be similar once all activities have been implemented. There may, however, be changes during implementation with regard to the actual resources allocated per output (results-based management) and on the amount and type of investments mobilized in each country. In addition, the global component of GEIPP contributes to a different extent than the GEIPP country projects to the EIP indicators.

Figure 9 summarizes the expected contribution of all GEIPP projects (the 7 country-level interventions plus the global component) to EIP criteria. This analysis takes into consideration only budgeted resources but could be also applied to actual project expenditures (all information that is readily available at implementing organizations). They could also include mobilized investments[10].

Such analysis would provide more valuable insights on the actual contribution of the projects to EIP topics and SDGs, if conducted towards the end of GEIPP implementation, thus also including information on additional investments mobilized.

From the initial results presented in Figure 9, it is clear that the GEIPP Global component complements the contribution of GEIPP country projects to the IRPF indicators (such as training, awareness-raising, policy development), which can be considered 'EIP enabling indicators', covering aspects not explicitly covered by the EIP international framework indicators, and have clear linkages with SDG indicators as illustrated in Table 2.

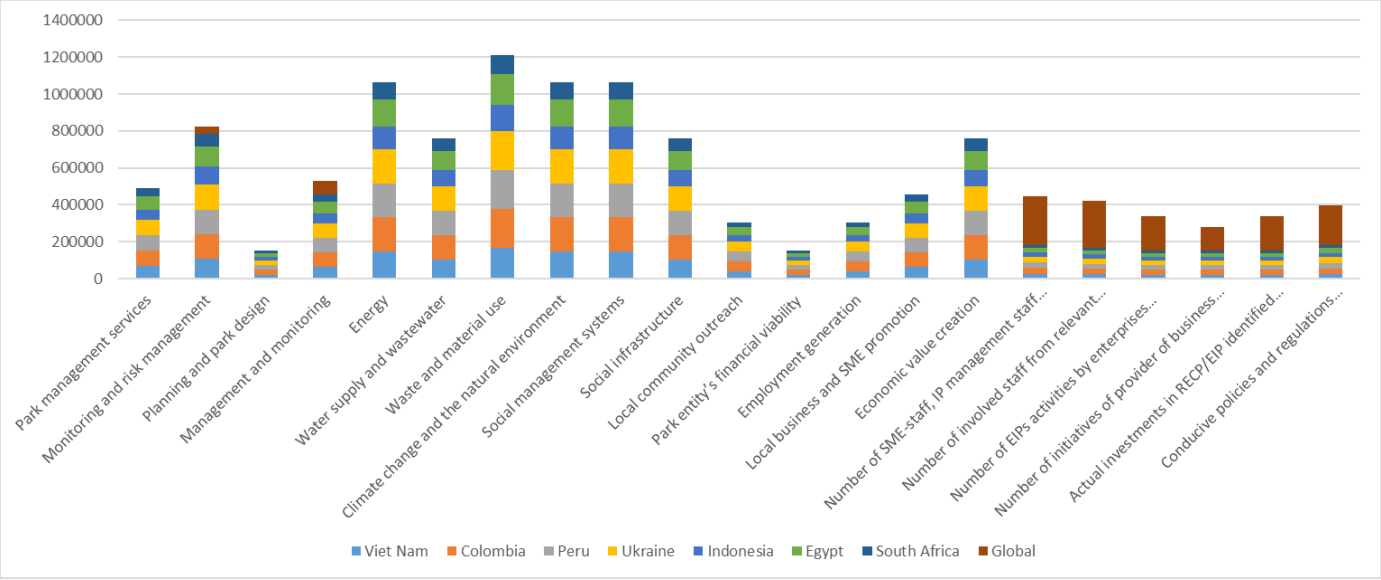


Figure 10. GEIPP contribution to EIP criteria (budgeted), euro

The contribution of the GEIPP Global component to the 'EIP enabling indicators' (the last 6 indicators, based on UNIDO IRPF) is significant if compared to the other GEIPP countries. This

[10] No investment in RECP/EIP opportunity has been mobilized by GEIPP at the time of drafting this report.

makes sense since the global component is transversal to the country interventions and is instrumental to supporting EIP policy development and demonstration through knowledge development and cross-feeding of experiences across countries. At the same time, it does not contribute directly to changing EIP equipment or practices at the level of the industrial parks (no direct contribution to energy, water supply, wastewater treatment, waste management, social infrastructure, employment generation, etc at the level of the demonstration industrial parks).

In the same way, it is possible to highlight the extent to which each GEIPP project is expected to contribute to the different EIP topics (Figure 10).

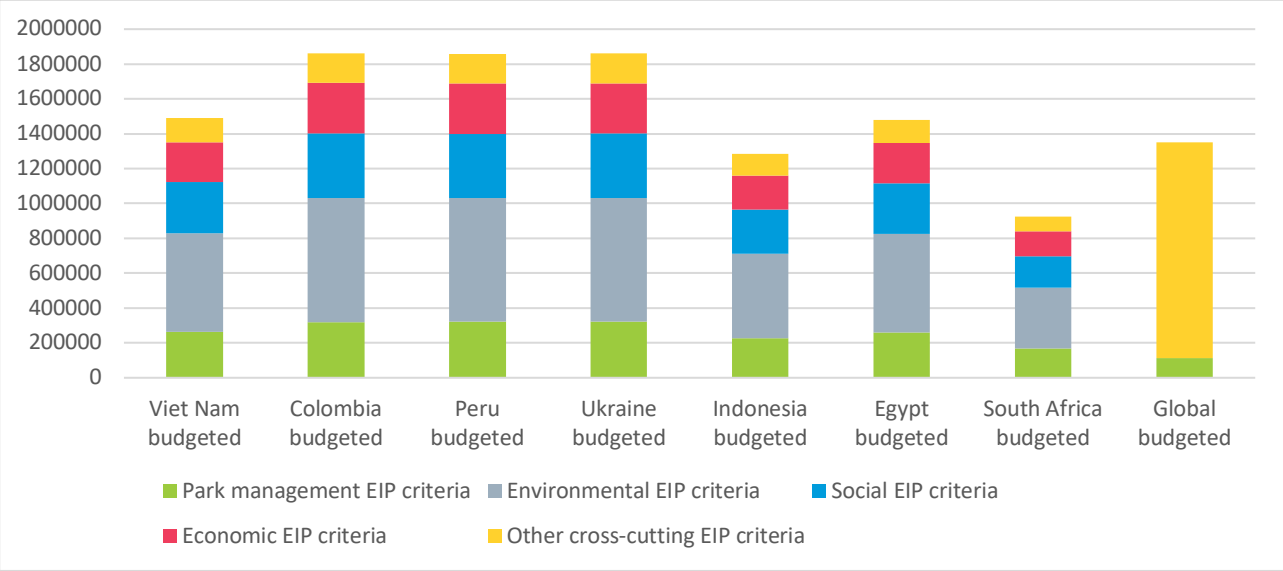


Figure 11. Contribution of GEIPP projects to EIP topics (budgeted), euro

It should be noted that this analysis, based on a standard allocation of 'direct' and 'preparatory' contributions of outputs to different EIP indicators, can be automated based on information readily available through the implementing agency's information system. Both assessments using project budgets and current project expenditures (which are not illustrated for all GEIPP projects in this paper) can be done very easily

RESULTS AND DISCUSSION

6

6. RESULTS AND DISCUSSION

6.1 How GEIPP contributes to EIP criteria and SDGs

The methodology articulated in chapter 2 enables the assessment, with a clear and transparent methodology, of the contribution of a project to EIP indicators and, subsequently, to SD indicators and SDGs.

Firstly, project resources (expenditures and/or investments mobilized or project budget) are allocated to the relevant EIP indicators using a weighted system. The methodology allows allocating resources by activity or, alternatively, by output. A standard weighting system can be applied for resource allocations by output in GEIPP-country projects, based on the experience of one country project, since all country projects have a similar logical framework.

A simple analysis assessing the contribution of the whole GEIPP (the 7 country-project, plus the global component) to EIP indicators based on the budget originally allocated to each Output, as per the agreed project document can then be undertaken.

The result of this analysis is shown in Figure 12, where relevant EIP indicators have been grouped by type of criteria.

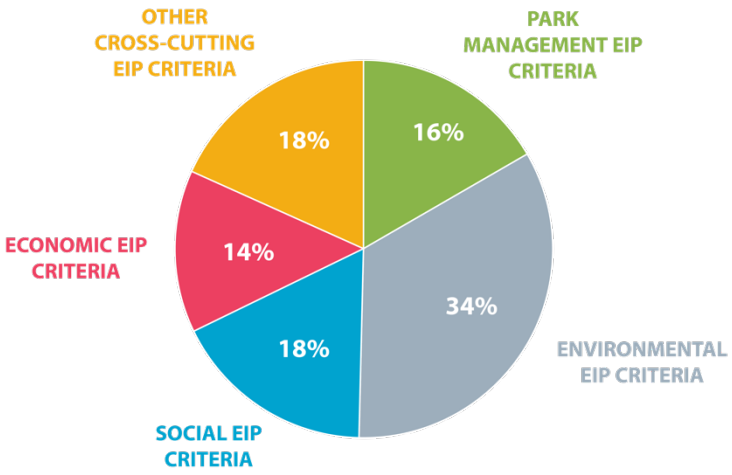


Figure 12. Resource allocation of GEIPP to park management, environmental, social, economic or cross-cutting EIP criteria

Secondly, once the resources allocated to each EIP indicator (or EIP topic) have been calculated, the methodology allows them to be allocated to SDG indicators, since each EIP indicator has soft or hard linkages to SDG indicators. The linkages are presented in Table 2. The linkages are established based on best available expertise but can be adjusted in light of new information.

In this way, as previously demonstrated with the EIP criteria, it is possible to present the contribution of the whole GEIPP budget to the SDGs (Figure 13). Thus, the GEIPP contributes to:

- SDG 8 “Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all” (20%),
- SDG 3 “Ensure healthy lives and promote well-being for all at all ages” (14%),
- SDG 6 “Ensure availability and sustainable management of water and sanitation for all” (13%),
- SDG 12 “Ensure sustainable consumption and production patterns” (13%),
- SDG 7 “Ensure access to affordable, reliable, sustainable and modern energy for all” (12%) and
- SDG 9 “Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation” (11%).

It also contributes to SDGs 1, 5, 11, 10, 13, although to a lesser extent.

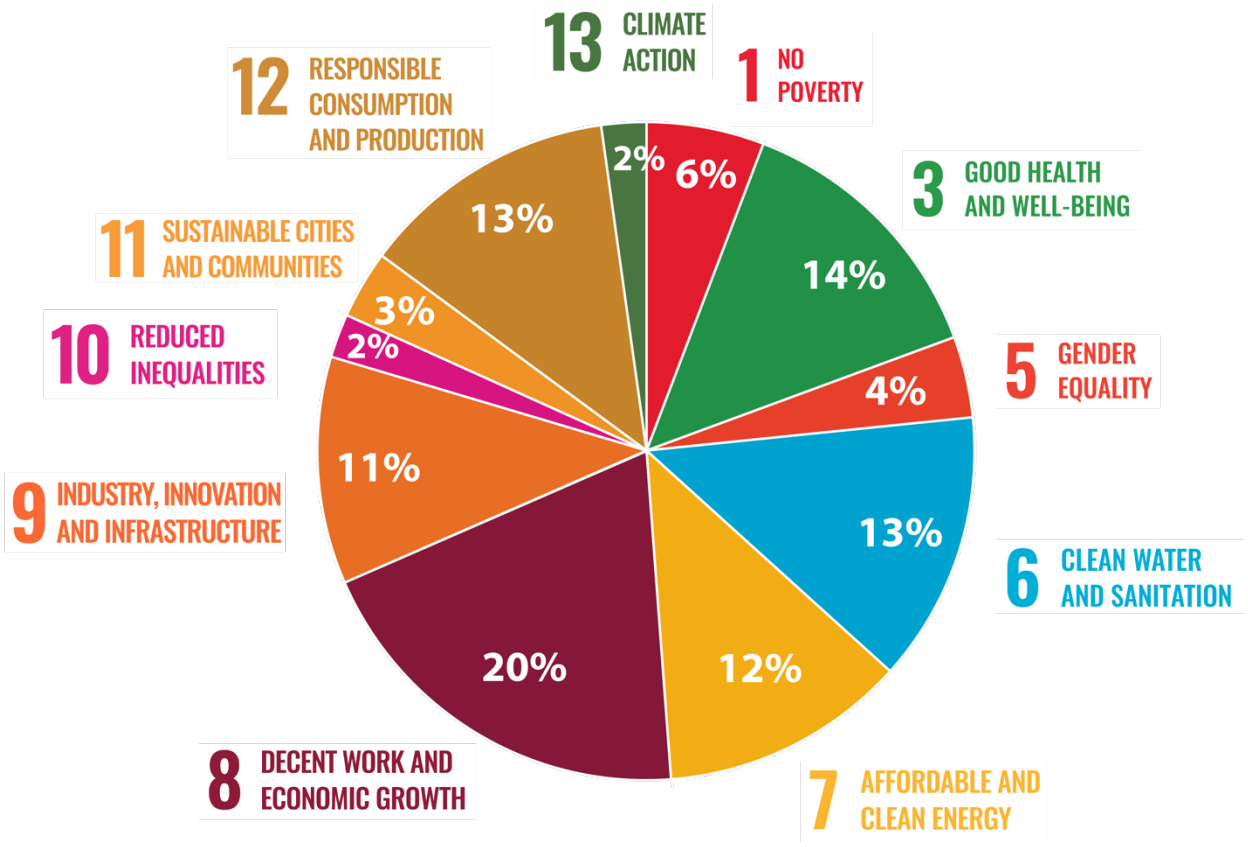


Figure 13. Resource allocation of GEIPP to SDGs

6.2 Discussion of results

EIP is clearly defined by a set of EIP indicators (grouped in EIP criteria and EIP topics) as laid down in the EIP International Framework v2, developed by UNIDO, the World Bank and GIZ. These indicators are inter-disciplinary and cover management, environmental, social and economic sustainability aspects. As such, a project targeting the transformation of existing industrial parks into EIPs has a broad scope, contributes towards a multitude of EIP indicators and cannot be reduced to investments in technologies or practices for improved IP environmental sustainability or competitiveness. This is why the analysis presented in this report is not limited to the EIP indicators which measure the performance of industrial parks as laid down in the International Framework v2, but is complemented by the 6 'enabling indicators' covering policy-related and investment-related indicators in line with the UNIDO IRPF.

It is therefore not surprising that GEIPP (2019-2023) will contribute to a broad range of SDGs. These are mainly inclusive and sustainable economic growth; health; sustainable water management; sustainable consumption and production; sustainable energy; sustainable industrialization, as well as sustainable consumption patterns and climate change. The analysis also confirms that these SDGs are central to the achievement of UNIDO's mandate of supporting inclusive and sustainable industrial development (ISID) in developing countries and emerging economies.

In addition, it should be noted that these SDGs are also fully in line with the target outcomes of the donor—the Swiss State Secretariat for Economic Affairs (SECO)'s. In particular, the SDGs most supported by the GEIPP are in line with the following SECO-promoted "innovative private-sector" initiatives:

- access to finance, which contributes to the development of the private sector and the creation of decent jobs;
- the integration of producers and enterprises in value chains; and
- corporate social responsibility, providing businesses with incentives to integrate social, ecological and governance standards in their activities.

The underlying calculation and the reported results take into consideration only the budget endowment of each project and do not include investments mobilized by the project, which could be significantly surpass the project budget.

The analysis gives an indication of how the GEIPP programme works towards the achievement of SDGs, but does not try, and cannot be used to assess the impact of the project on SDGs. In all cases, the analysis can be used to inform donors and implementing agencies on which SDGs will be mostly supported by international assistance on the EIP topic.

Although the methodology is a useful, science-based, and transparent tool to undertake such analysis, it should be noted that the information collected at this early stage of GEIPP implementation will require an update in the coming years when EIP demonstrations and investments have taken place.

6.3 Limitations of this methodology and next steps

The limitations of this methodology are primarily linked to the subjectivity in assessing linkages between activities (or outputs) to EIP indicators and between EIP indicators and SDG indicators. Default linkage tables (for GEIPP country projects) are suggested in chapter 1. However, these could be changed and customized by the assessor, and possibly further reviewed and refined by the UNIDO team in the future.

Another limitation refers to the availability of information on expenditures by activity and on investment mobilized. An analysis at the level of the activities is of course more precise than an analysis of the level of the outputs. However, this second option is provided to minimize the time required for such analysis and to 'automate' the analysis using information readily available at the level of the implementing agency (i.e. total budget by output and expenditures by output).

The analysis can be done at the level of the single project or the level of the entire programme.

The results presented in chapters 2 and 3, are based on the first year of implementation of one GEIPP country-level intervention (GEIPP-Vietnam), and the results presented in chapters 4 and 5 are based on the total project budget by output.

Although this analysis has value in promoting a better understanding of which SDGs or development aspects the GEIPP ODA will support, a cross-country analysis based on actual implementation would be needed to develop a stronger narrative. Such analysis would create a better understanding of which activities would enable a donor or an implementing agency to get more 'bang for their buck' for ODA funds in EIP development initiatives.

As next steps, it is recommended to:

- Assess the project contribution to EIP indicators and SDGs based on actual project and programme implementation. This should include information on the actual investments mobilized or triggered by GEIPP projects;
- Undertake the analysis at the activity level for at least one GEIPP country programme, with the view of confirming or modifying the linkages between activities/outputs and EIP indicators based on activities implemented;
- Peer-review the linkages between EIP indicators and SDG indicators, with the view of establishing a 'default' linkage table for EIP work;
- Expand the analysis to include additional countries based on the collective work of UNIDO, the World Bank and GIZ when it comes to EIP development projects in different countries..

ANNEX I

Table A1. Park Management - Performance Requirements for Eco-Industrial Parks

EIP Prerequisites for Park Management		
Topic	Sub-topic	Description/Requirement
Park management services	Park management entity	A park management entity (or alternative agency, where applicable) exists to handle park planning, operations and monitoring.
	Park property, common infrastructure and services	The park management entity provides and facilitates common services and infrastructure to resident firms to ensure smooth operations.
Monitoring and risk management	Monitoring performance and risks	The park management entity has established and maintains a system for monitoring achievement of threshold EIP performance targets and management of critical risk factors within the park.
		The park management establishes measures to deal with climate change adaptation and disaster preparedness.
	Climate risk assessment	The park management entity collects, assesses, and reviews comprehensive climate risk information specific to the location of the park.
	Information on applicable regulations and standards	Park management has a good understanding of regulations and international standards applicable to industrial park compliance and enforces them in the park.
Planning and park design[13]	Master plan	A master plan for the EIP is developed by park developers and is applicable to both planning and operations by park managers.
Performance Indicators for Park Management		
Topic	Sub-topic	Description/Requirement
Park management services	Park management empowerment	Distinct park management entity is empowered to provide and charge fees through a legally binding instrument.
	Park management entity property and common infrastructure operations	The park management entity provides and facilitates efficient common services and infrastructure to resident firms.

Table A2. Environmental - Performance Requirements for Eco-Industrial Parks

EIP prerequisites		
Topic	Sub-topic	Description/Requirement
Management and monitoring	Environmental and Energy Management Systems (EMS and EnMS, respectively)	The park has appropriate, functioning EMS and EnMS systems (for example, ISO 14001 Environmental Management Standard and ISO 50001 Energy Management Standard) in place to set and achieve targets, and covering key issues (for example, energy waste and material use; water; point-source emissions; carbon footprint; and the natural environment).
		The park actively supports and facilitates industrial synergies and symbiosis.
Energy	Energy efficiency	Energy efficiency strategies are in place for the park management infrastructure and major energy-consuming resident firms.
	Energy network and waste heat recovery	A program/mechanism is in place to identify opportunities for common energy and heat exchange networks to be established. The park management will provide the required physical network and offers support programs to assist resident firms with implementation.
Water supply and wastewater	Water efficiency, reuse and recycling	Water-saving and re-use plans are important to reduce total water consumption and manage water use. The industrial park may face challenges related to climate and non-climate related uncertainties that can shock and/or stress a system (land use changes, demographics, shifts in demand, etc). The park and firms should have systems in place to increase water savings and reuse.
Waste and material use	Dangerous and toxic material	Tenant firms are obliged to make as little use as possible of hazardous materials in their production process; to generate as little hazardous waste as possible, and to seek alternative materials.
	Resource conservation	The park management and firms are obliged to consider circular economy principles and practices (e.g. circular products, using as little virgin raw material as possible, reuse and remanufacturing of components and parts and making extensive use of secondary/ recycled materials generated in the park).
	Treatment of waste	Waste generated in the production process is recovered, as far as possible, through sorting, cleaning, conditioning etc., so that it can be used as raw material for other firms in and outside of the park.
	Disposal of waste	Waste/secondary raw materials (including hazardous waste) leaving the park is being monitored to check that the material is either reused or further processed by authorised firms outside of the park, or disposed of according to legal and environmental standards.
Climate change and the natural environment	Air, GHG emissions and pollution prevention	The park seeks to limit and mitigate pollution and GHG emissions, including air, waterway, and ground pollution. A set of measures at the park level is introduced (for instance, low-carbon technologies, energy efficiency measures, circular economy practices, waste heat recovery) to reduce GHG emissions.
	Environmental assessment and ecosystem services	The industrial park demonstrates an understanding of the potential impact of park activities on priority ecosystem services in and around the vicinity of the park, and takes needed actions.

Performance Indicators		
Topic	Sub-topic	Description/requirement
Management and monitoring	Environmental/Energy Management Systems (EMS and EnMS, respectively)	Firms have functioning and fit-for-purpose EMS/EnMS systems. Summary information from these management systems is provided to park management, who aggregate and report on data at the park level.
Energy	Energy consumption	The industrial park has adequate metering and monitoring systems in place to measure thermal energy and electricity consumption at both the park and firm levels.
	Renewable and clean energy	The industrial park leverages available renewable energy with plans to increase its contribution for shared services (for example, solar streetlamps).
	Energy efficiency	Energy efficiency opportunities should be identified at the park and firm levels to reduce energy use and associated greenhouse gas emissions. EIPs should identify and promote technological and process-related interventions in their own and resident business operations.
Water supply and wastewater	Water consumption	A mechanism is in place to monitor water consumption across the park, and establish demand management practices in case of water stress. Extraction from water sources (such as rivers and groundwater sources) should take place at sustainable levels.[17]
	Wastewater treatment	The industrial park has provisions to treat, recycle and reuse treated wastewater. No effluents significantly impact potable water resources, or the health of local communities or nearby ecosystems.
	Water efficiency, reuse and recycling	The park and firms have systems in place to increase water savings and reuse.
Waste and material use	Waste/by-products re-use and recycling	A waste management plan with a program/mechanism in place to promote and encourage reuse and recycling of materials by firms in the park (for example, raw materials for process and non-process applications).
	Dangerous and toxic materials	Program/mechanism in place with clear targets to reduce, and avoid the use of, dangerous and hazardous materials by firms in the park.
	Resource conservation	Circular economy practices (e.g., Industrial Symbiosis Networks, Exchange Platforms for waste and secondary raw materials, for reuse and recycling, etc.) are in place and used by firms. Circular economy practices consist of a) redesigning products for ease of reuse, remanufacturing, disassembly and recycling; b) reuse of waste and/or by-product within its own operations; c) collecting back and remanufacturing products or parts and components of products.
	Waste disposal	A waste management system with a systematic approach to collection, treatment, recycling and disposal of waste, and which correctly manages unusable waste materials (e.g., disposed of in proper landfills, burned in proper incinerator).
Climate change and the natural environment	Flora and fauna	Native flora and fauna are important to maintain the proportion of natural areas. They are integrated within the industrial park and natural ecosystem where possible.
	Air, GHG emissions and pollution prevention	A mechanism is in place to avoid, minimize, and/or mitigate significant point-source pollution and GHG emissions. Covering GHG gases (CO_2, methane (CH_4), nitrous oxide (N_2O), and hydrofluorocarbons (HFCs)), local particulate and air pollution emissions such as PM 2.5, heavy metals (Hg, Cd, Pb and other relevant heavy metals), selected unintentional toxic organic pollutants (dioxins, PCDD/Fs). Program for on-site chemical management.

Table A3. Social - Performance Requirements for Eco-Industrial Parks

EIP prerequisites		
Topic	Sub-topic	Description/Requirement
Social management systems	Management team	Functioning system(s) are in place for ensuring social infrastructure provisioning, operations and performance, as well as collecting, monitoring, and managing key social information and impacts relevant to the industrial park.
Social Infrastructure	Primary social infrastructure	Social Infrastructure addresses different aspects to improve the living and working conditions of employees and neighbouring communities. Provision of primary social infrastructure is vital for employees' health and welfare, paying special attention to the needs of women. Primary social infrastructure covers inter alia adequate medical services, educational and training institutions, separate toilets and washing facilities, and provision of cafeterias and recreational areas.
Performance Indicators		
Topic	Sub-topic	Description/Requirement
Social management systems	OH&S management system	Firms should have an OH&S management system in place (based on ISO 18001 standard) to record occupational diseases, absenteeism, and numbers of work-related injuries and fatalities.
	Grievance management	A grievance mechanism to receive and address grievances from within and outside the park. Examples include help desks, complaint boxes, and hotlines (phone booths) located inside and outside of the industrial park.
	Discrimination and harassment prevention and response	Employees of the park management and resident firms should have a working environment free of violence, harassment, discrimination, exploitation or intimidation. A discrimination and harassment prevention and response system with clear complaint and response procedures should be in place.
	Decent work	Conditions of employment should meet the following work criteria: • a fair income with security and social protection which allows access to decent housing. • recognition of contractually agreed rights of workers and employees including - but not limited to - working hours, leave and maternity leave. • establish and join organizations, of their own choosing, and without prior authorization, to represent workers.
Social infrastructure	Primary social infrastructure	Social infrastructure should meet the norms and requirements of the workforce, and client expectations, paying special attention to the needs of female workers.
	Industrial park security	The industrial park has security systems and services that are fully operational and fit-for-purpose, taking the particular security needs for women into consideration. Examples include, among others: appropriate lighting systems in and around the park, closed circuit television (CCTV) systems, a centralized security office, and provision of transport at night.
	Capacity building	Programs for skills training and development at park management and firm level are in place, emphasizing equal opportunities for skills training and career development, and addressing new technologies and changes in the labour market. Examples include skills development programs, and women entrepreneurship development programs.
Local community outreach	Community dialogue	Provision of established, accessible communication platforms or other means to maintain regular dialogue with the community and relevant civil society organizations. Examples include news bulletins, regular media releases, and information display boards.
	Community outreach	The park management entity and resident firms engage in community outreach activities and maintain documentation. These activities could include: an annual day with celebrations inside the park; clean-up drives or public service activities that are organized in community areas by the park management; infrastructure for community areas (for instance, drinking water supply, sanitation).

Table A4. Economic - Performance Requirements for Eco-Industrial Parks

EIP prerequisites		
Topic	Sub-topic	Description/Requirement
Local business and SME promotion	SME development	An EIP provides opportunities for local, regional, and national SMEs, enabling them to benefit from EIP activities.
Employment generation	Maximizing local benefits	An EIP must generate employment opportunities in the areas in which it operates to ensure revenue linkages and development opportunities.
Economic value creation	Market demand for EIP services and infrastructure	The development of an EIP, including green infrastructure and services, must be based on realistic market and industry demands to ensure economic feasibility.
Park entity's financial viability	Service delivery pricing	A dedicated financial model capturing EIP salient features must be used to set pricing levels and anticipated revenues in order to enhance financial viability of EIP investments.
Performance Indicators		
Topic	Sub-topic	Description/Requirement
Employment generation	Type of employment	The EIP provides longer-term employment contracts to employees.
Local business and SME promotion	Local value added	An EIP must use local suppliers where possible. EIPs provide local businesses with opportunities to grow.
Economic value creation	Investment-ready park for firms	An EIP should be "investment ready" so that it offers lower economic risks and better investment opportunities to firms. Infrastructure should be offered, including water, energy, roads and service corridors.

"This analysis has value in contributing to a greater understanding of which SDGs or development aspects the GEIPP ODA can support and prioritise.... It is useful for developing a stronger narrative and to better understand where a donor or implementing agency could get more 'bang for the buck' with ODA for EIP development"

For further Information:

EIP@unido.org