



Economic resilience, green growth & industrial transformation: New paths to African SEZ prosperity

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AFRICA
ECONOMIC
ZONES
ORGANIZATION

BURO HAPPOLD

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Contributors



Werner serves as an Associate Director in Buro Happold's Cities Unit where he is responsible for driving sustainable industrial development research and planning. He is a seasoned Development Economist with some 20 years of professional experience. He is equipped with an extensive history tackling complex developmental challenges and championing ambitious initiatives side-by-side with international organisations, including the World Bank, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), the United Nations Development Programme (UNDP) and the International Labour Organisation (ILO). In Africa, he served as the team leader for various economic and industrial development projects (including Ghana, Gambia, South Africa, DRC, Namibia). As such he is uniquely positioned to apply international best practice within a local context.



Buro Happold City Economics



Economic Analysis & Data Modelling



Economic Development Strategies



Industry Strategy & Clusters Analysis



Feasibility Studies & Economic Appraisal



Transaction advisory



Regional development plans & economic corridors



Economic Impact Assessment



Business Case and Viability Modelling



Urban Regeneration & Revitalisation



Infrastructure Demand & Modelling



National policy and strategy support and enabling environment



Spatial strategies and master planning



Zone repositioning



Sustainability and green growth strategies



Social and environmental safeguards



Investment attraction and marketing



Central Question for this session

Should all Industrial Parks be Eco-Industrial Parks?

Circular Economy Definition Review – History of Circular Economy

- The principle of removing the concept of waste from a linear economy would create what is known as a circular economy. It isn't about only minimising waste, avoiding waste or reducing waste, but rather **eliminating the entire concept of waste**. This was the basis of William McDonough's Cradle to Cradle philosophy which has become the basis of sophisticated Circular Economy models. As the acknowledgement and evolution of this thinking continued, a number of publications and papers followed (as illustrated in the timeline below).

2002:
William McDonough and Michael Braungart publish Cradle to Cradle: Remaking the Way We Make Things

2005:
The Chinese Edition of Cradle to Cradle is published as The Design of the Circular Economy by Tsinghua and Tonji Universities

2011:
China Announces the 12th Five Year Plan "Promotion of the Circular Economy"

2014:
The World Economic Forum commits to the circular economy. William McDonough is named chair of the first Meta-Council for the Circular Economy

2015:
Ellen MacArthur Foundation publishes "Growth Within: a circular economy for a competitive Europe" and "Delivering the circular economy: a toolkit for policymakers"

2016:
China Begins the 13th Five Year Plan "Implementation of the Circular Economy."

The Netherlands expresses a commitment to the circular economy

2017:
Update on the EU's circular economy package and "Achieving Growth Within" published



Google search results for circular economy

2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017

Circular Economy Definition Review The ReSOLVE Framework

ORIGIN

Created by Ellen MacArthur Foundation and McKinsey

PRINCIPLES

The ReSOLVE framework aims to produce circular practices in an economic system, particularly within businesses or industrial sectors, by increasing economic efficiency within production systems which result in environmental benefits.

The acronym stands for a list of six actions, each of which represents a major circular business opportunity: Regenerate, Share, Optimise, Loop, Virtualise, and Exchange. Each action reinforces and accelerates the performance of the other actions, creating a strong compounding effect.

LOCATIONS

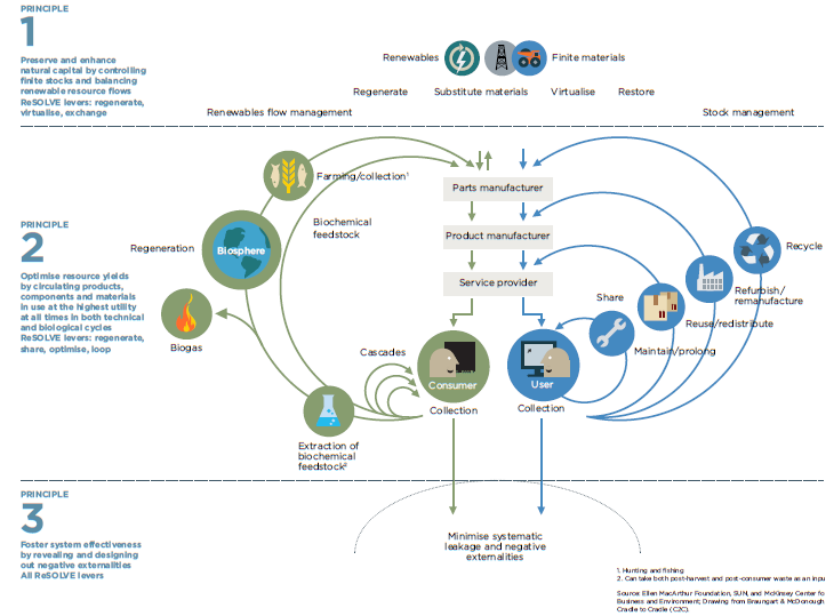
The ReSOLVE framework has informed the European Union approach in alignment with central policies and goals. Adoption by member states may vary.

BENEFITS

- Comprehensive action based framework
- Considers ecological regeneration through a shift to renewables
- Fuels growth by capturing more value from existing infrastructure and products (focus on value creation and retention)

LIMITATIONS

- Focus on economic efficiency which results in environmental benefit (economy is pre eminent)
- Lacks a spatial integration, e.g. land, infrastructure
- Does not indicate where technological and biological processes integral to circular economy take place
- Does not focus on citizens' lifestyles and their willingness to adopt circular practices



REGENERATE	<ul style="list-style-type: none"> • Shift to renewable energy and materials • Reclaim, retain, and restore health of ecosystems • Return recovered biological resources to the biosphere
SHARE	<ul style="list-style-type: none"> • Share assets (eg cars, rooms, appliances) • Reuse/secondhand • Prolong life through maintenance, design for durability, upgradability etc
OPTIMISE	<ul style="list-style-type: none"> • Increase performance/efficiency of product • Remove waste in production and supply chain • Leverage big data, automation, remote sensing and steering
LOOP	<ul style="list-style-type: none"> • Remanufacture products or components • Recycle materials • Digest anaerobically • Extract biochemicals from organic waste
VIRTUALISE	<ul style="list-style-type: none"> • Dematerialise directly (eg books, CDs, DVDs, travel) • Dematerialise indirectly (eg online shopping)
EXCHANGE	<ul style="list-style-type: none"> • Replace old with advanced non-renewable materials • Apply new technologies (eg 3D printing) • Choose new product/service (eg multimodal transport)

What are the main Success Factors of Eco-Industrial Parks

Various best-practice guides published. E.g.,

1. AEZO
2. UNIDO / UNDP / UNCTAD
3. African Development Bank, EBRD, World Bank / other MDBs
4. Ellen MacArthur Foundation (Circular Economies)

Common focal points:

1. Municipal utilities and waste management
2. Energy and water efficiency (incl. wastewater)
3. Social & Environmental Standards
4. Government Policies (incl. Municipal Government) & Government Capacity

Green Cities – Points to consider



Transitioning to Green Growth and Economic Resilience



1. **Strong Vision** – *don't be afraid of scale or hurdles!*
2. **Passion and Determination** – *fundamental and can never be replaced!*
3. **Collaboration of public and private** – *going strong together!*
4. **Strategy** – *fundamental for success!*
5. **Identification of the USP** (Unique Sustainability Points) – *be new – be original!*
6. **Timing** – *understand the dynamics and plan for the long run!*
7. **Identity** – *develop the shade of green for the SIZ!*
8. **Monitoring & Evaluation** – *Independent 3rd Party Verification!*

1. Strong Vision – the basis for Eco-Industrial Parks

**DELIVERING
AND GUIDING
INDUSTRIAL
STRATEGIES
AND PLANS**



**INTEGRATION OF
ENVIRONMENTAL
PROTECTION
AND ITS
MONITORING**



**PROVIDING SAFE
AND FAIR
WORKING
ENVIRONMENTS**



**ENSURING
HIGH QUALITY
OF PRODUCT
AND LIFE**



Visioning – an innovative approach

Game of Zones

India

Client : GIZ – Deutsche Gesellschaft Fur Internationale Zusammenarbeit GmbH

Duration: 2016

Services provided: Stakeholder engagement, economic strategy, incentives

Game of Zones is an educational game to show how different criteria interact and contribute to the development of holistic sustainable planning concepts. The game was developed by Buro Happold and is based on the German Sustainable Building Council (DGNB) rating system for industrial sites.

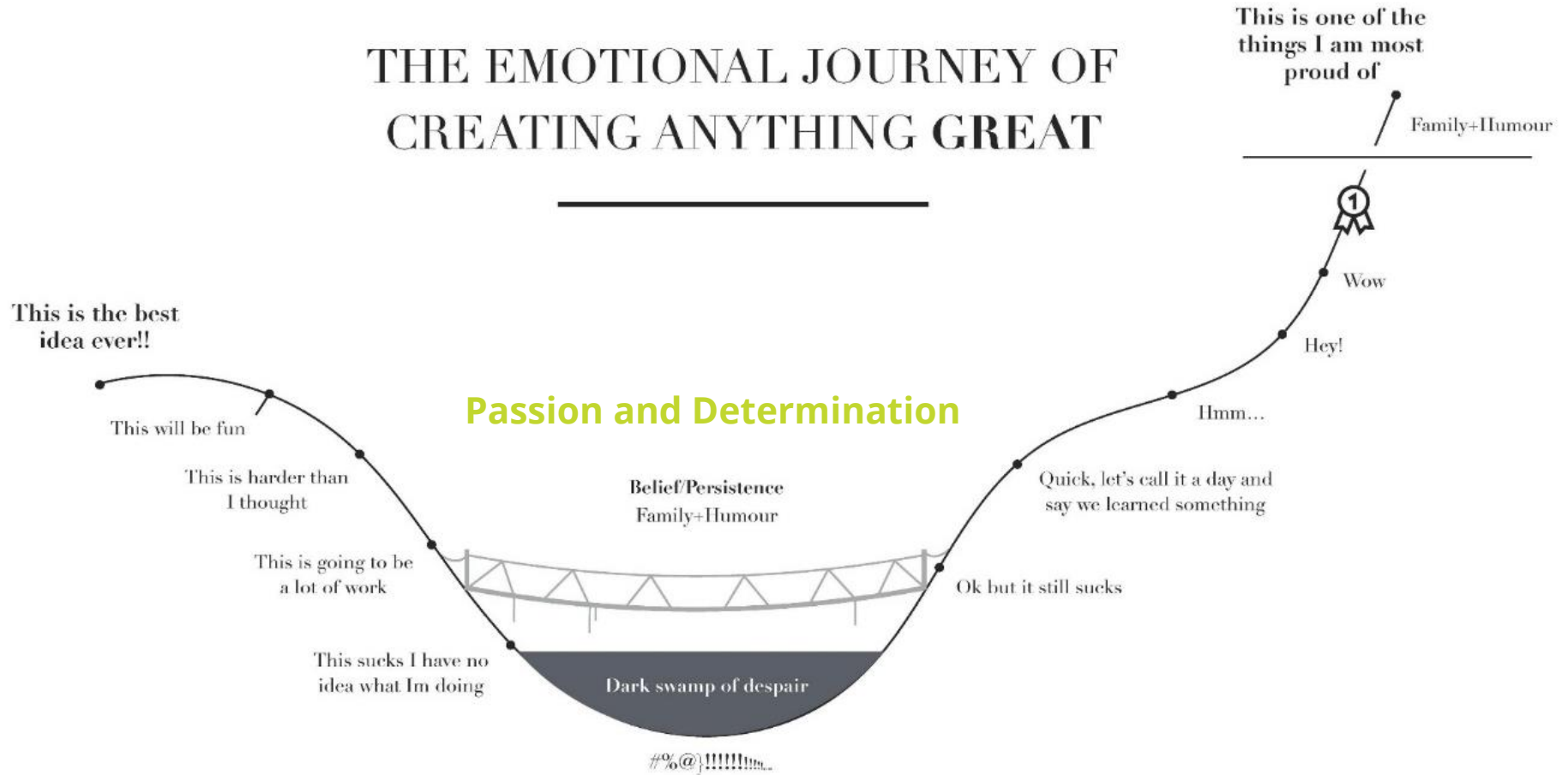
The overall aim of the game is for players to learn about the different sustainability concepts, identify potential synergies across categories, and then discuss the concepts in a team and between groups.

The players can learn about how different criteria interact and contribute to the development of holistic sustainable planning concepts. Players learn through developing their own concept and seeing how others approach the challenge.



2. Passion and Determination

THE EMOTIONAL JOURNEY OF CREATING ANYTHING GREAT



THE EMOTIONAL JOURNEY IS INEVITABLE AND PERHAPS NECESSARY

Passion and Determination – Example ALEAP Green Industrial Park, India

Association of Lady Entrepreneurs of Andhra Pradesh



VATVA



VAPI



GIP



ALEAP

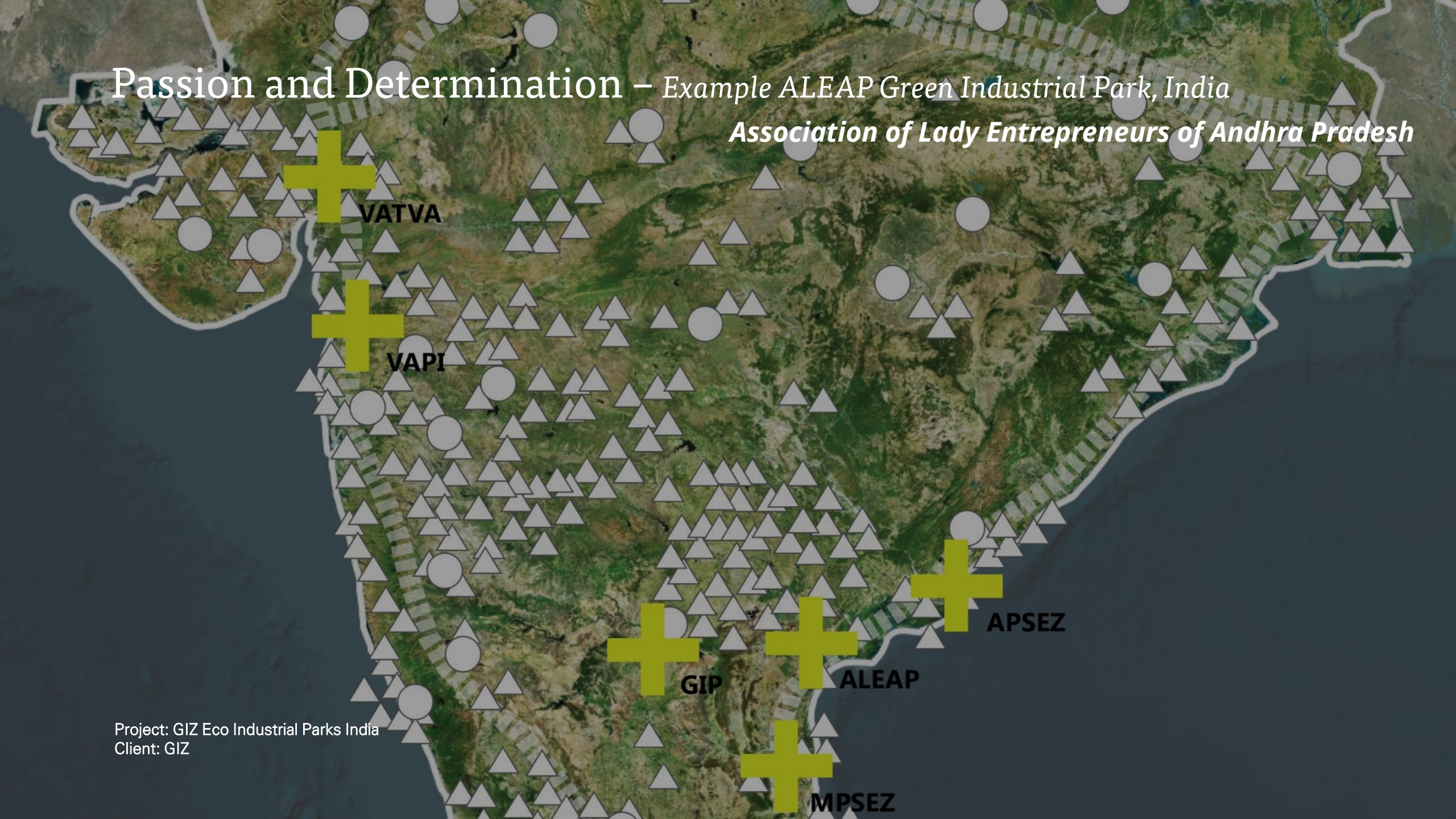


APSEZ



MPSEZ

Project: GIZ Eco Industrial Parks India
Client: GIZ



3. Collaboration of public and private

Institutional Alignment

1. A strategic programme for industrial parks should be inter-agency and inter-disciplinary.
2. Representatives and experts from a wide variety of public & private sector institutions, development agencies, financing partners and civil society should be consulted.
3. Efficient cross-government and public-private coordination.
4. Development of government capacity and allocation of resources.

Creating an Enabling Environment for Collaboration

1. Industrial Development Policy and the role of individual government departments, SEOs, municipalities etc. must be clearly defined.
2. Effective platforms for public-private sector engagement must be created.
3. A clear understanding of market gaps and failures among all role players.

4. Industrial Park Development Strategy



Industrial Space

A thriving economy + historically low interest rates are driving housing demand in major cities and metropolitan areas, reducing space for Industrial Zones close to cities.



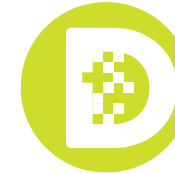
Mobility & Logistics

Dieselgate is promoting environmentally friendly logistics and mobility (geared towards freight, public transport, e-mobility, cycling, on foot). New logistics. Industrial Zones with intelligent mobility



Energy Transition

Energy transition from fossil / nuclear to renewable energies. Decentralized energy concepts at the Industrial Zone level for a clean and environmentally friendly, almost zero-emissions city.



Digitalization

Sustainable Industrial Zones are in need for more digital solutions. Real estate industry is taking the first steps towards "smart" in order to become integrated and digital, Industries need to follow



Climate Change

Climate emergency and related public interest in e.g. CO2 emissions. UN climate protection goals and the 2030 Agenda as clear signposts

Integrated, data-based Sustainable Industrial Zones

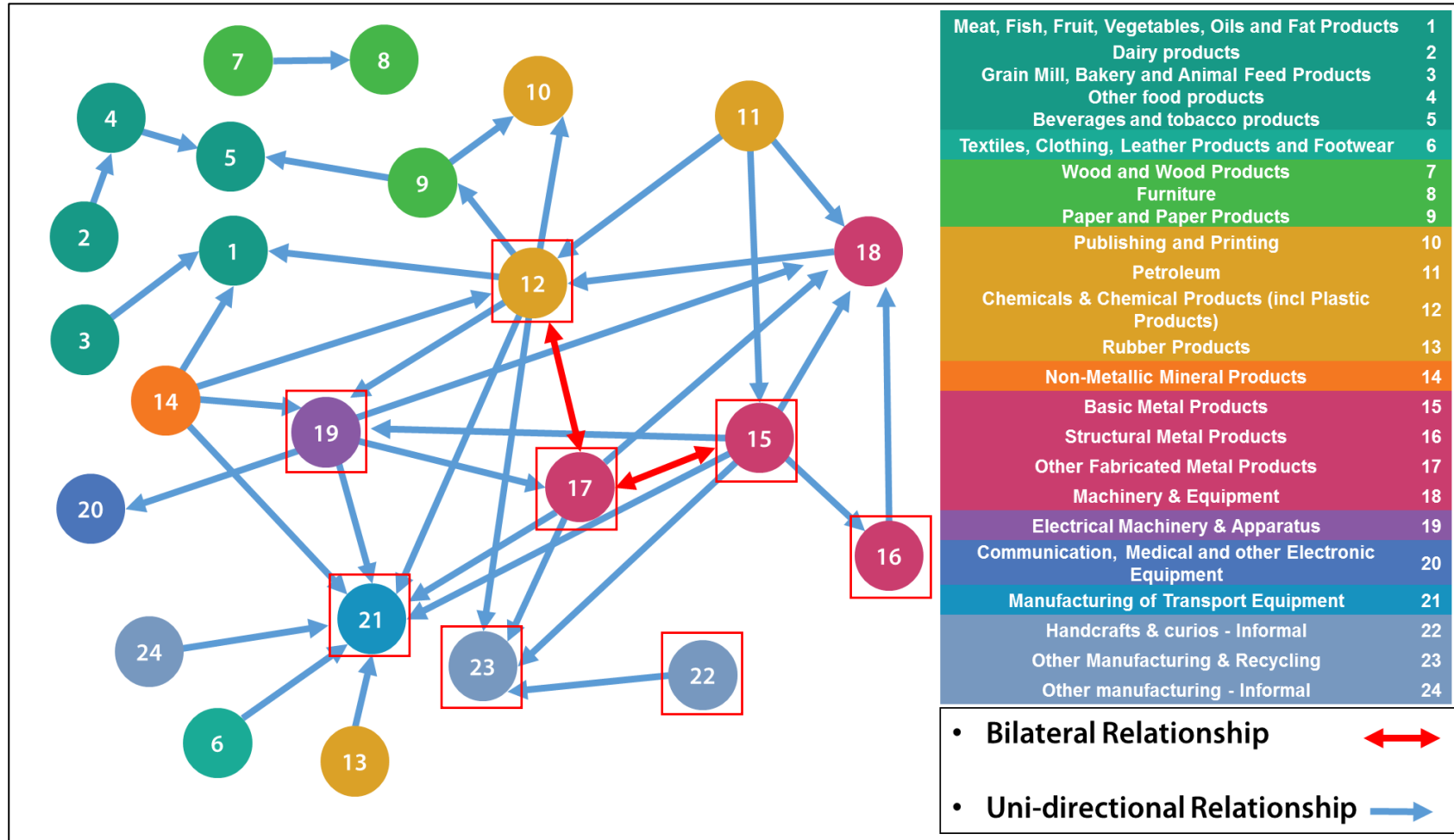
Example Volkswagen Wrzesnia



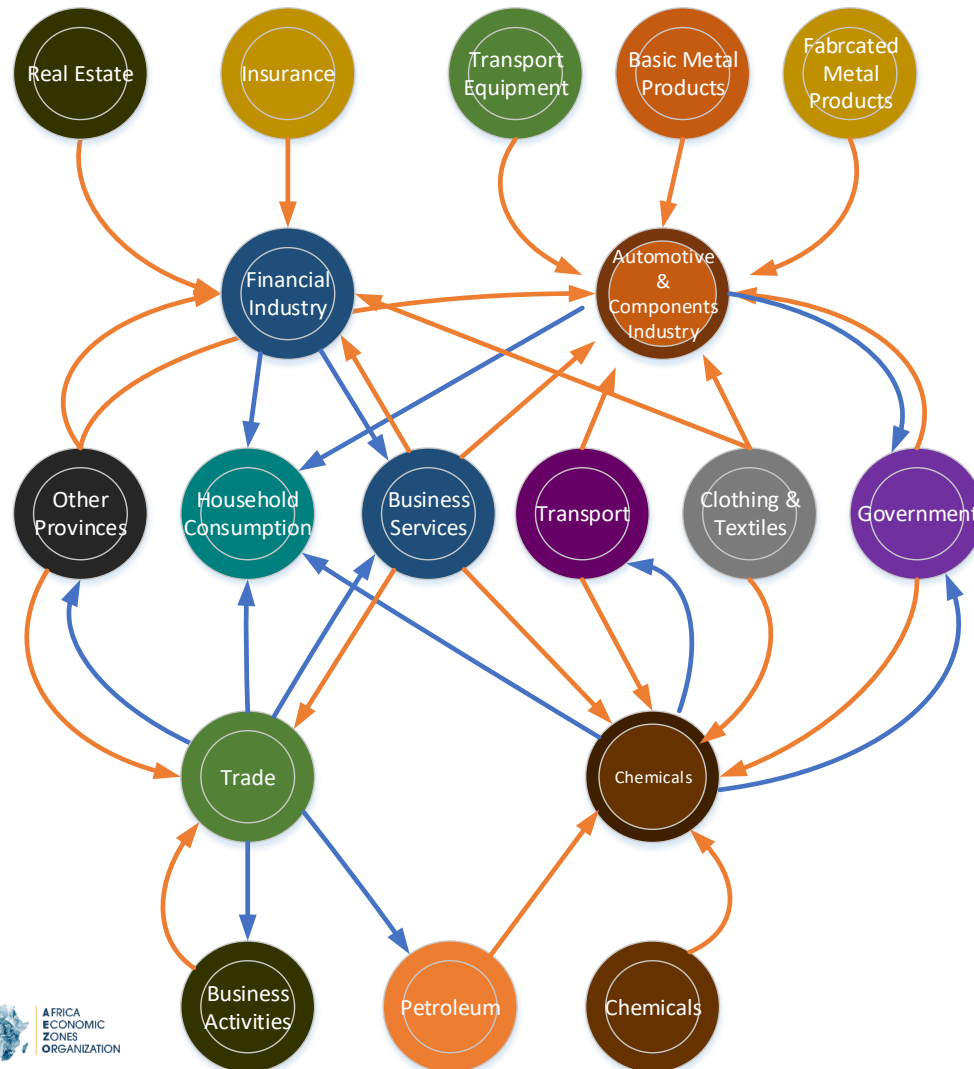
Project: Volkswagen Plant, Wrzesnia, Poland
Client: Volkswagen



Industrial Symbiosis & Competitive Advantage (top-down approach)



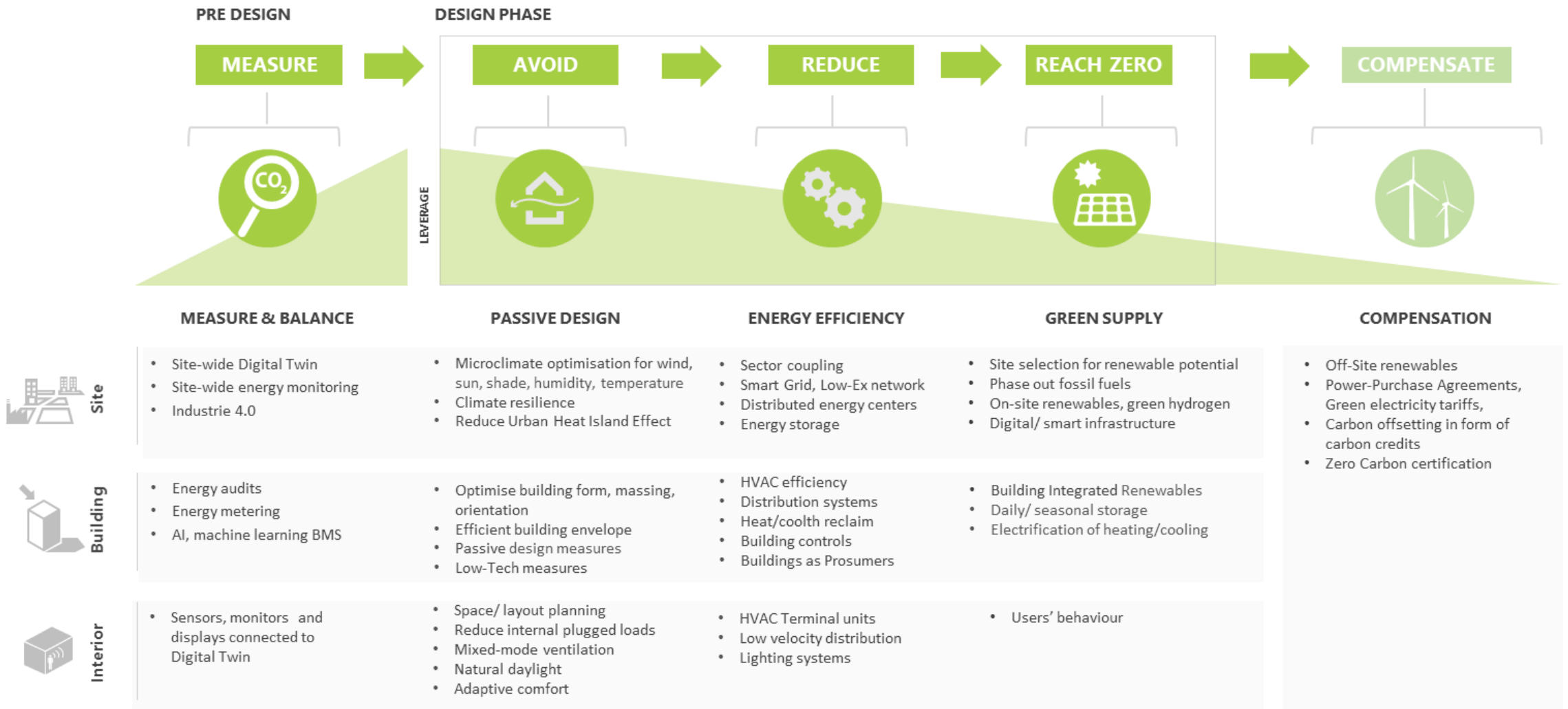
Economic analysis of a manufacturing economy (top-down approach)



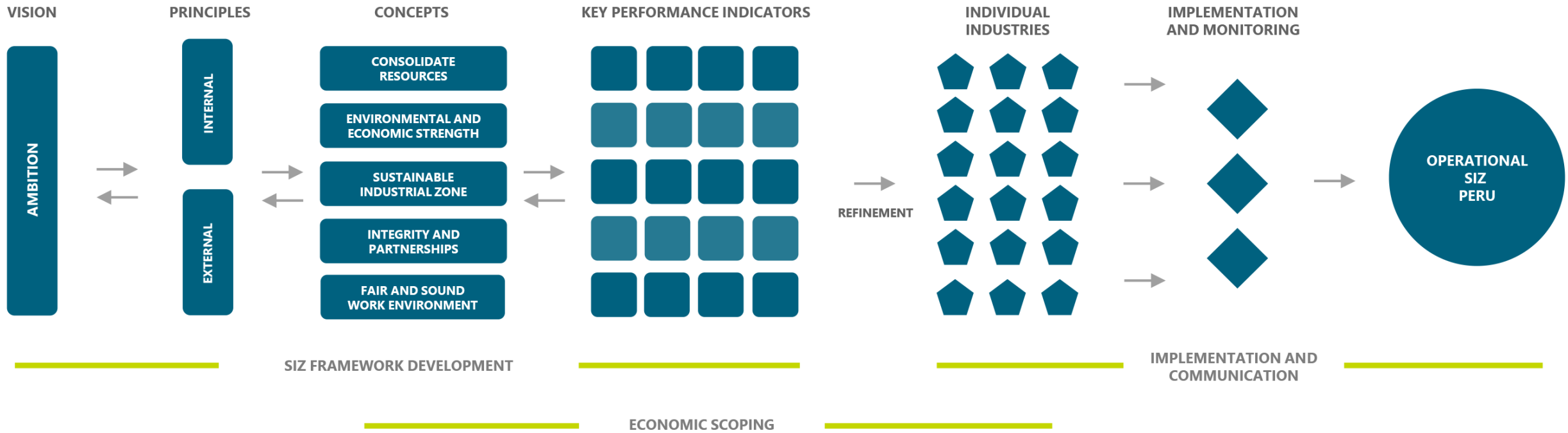
Example of Priority Sectors

- Platinum & other minerals
- Electronics
- Biotechnology
- Perishables
- Fuel Cells
- Capital goods
- Aerospace
- Plastics & Rubber
- Pharmaceuticals
- Chemicals
- Capital goods
- Transport logistics
- Advanced Manufacturing

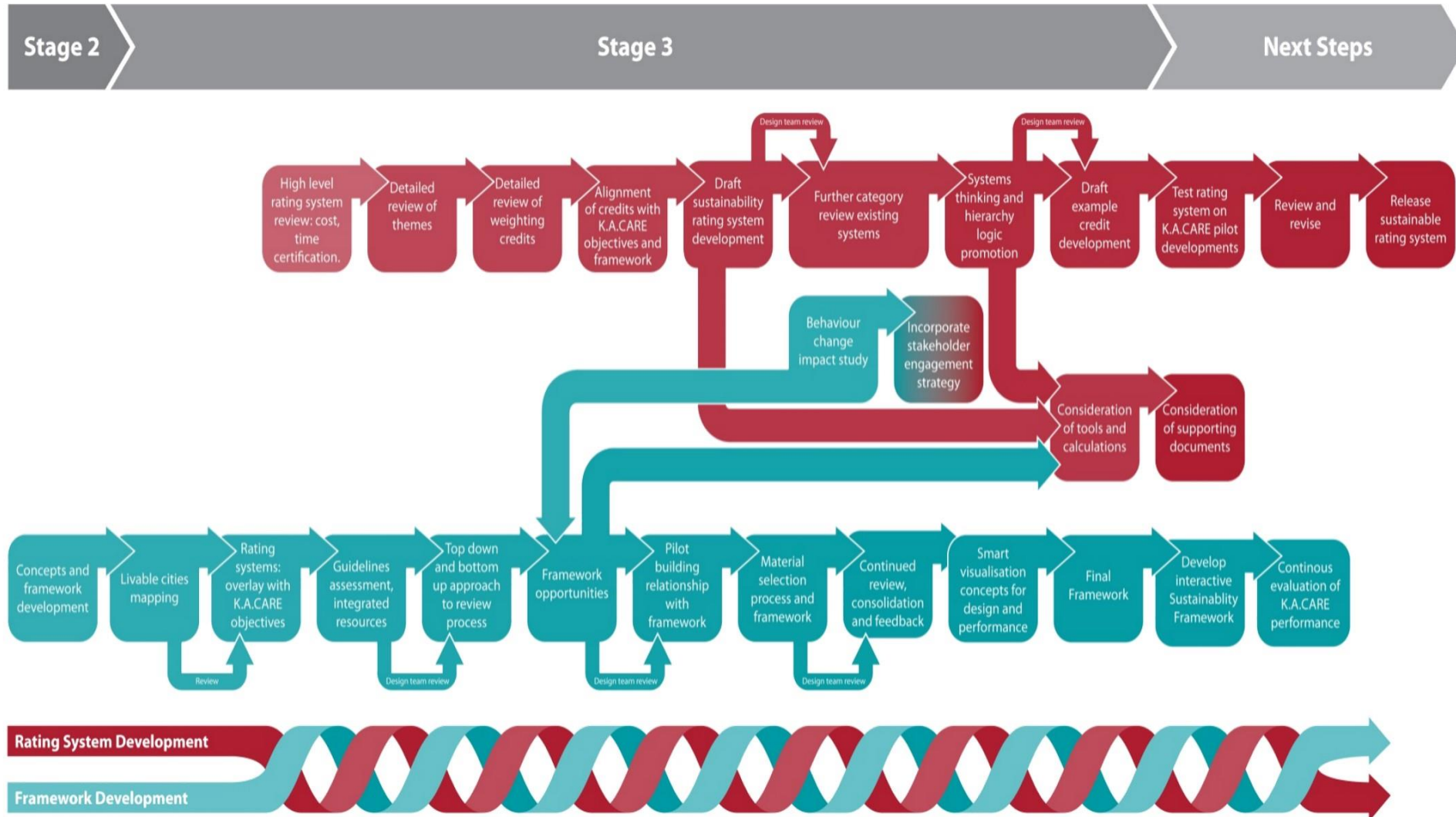
Example - Carbon Strategy for Green *Pharma Parc*, Germany



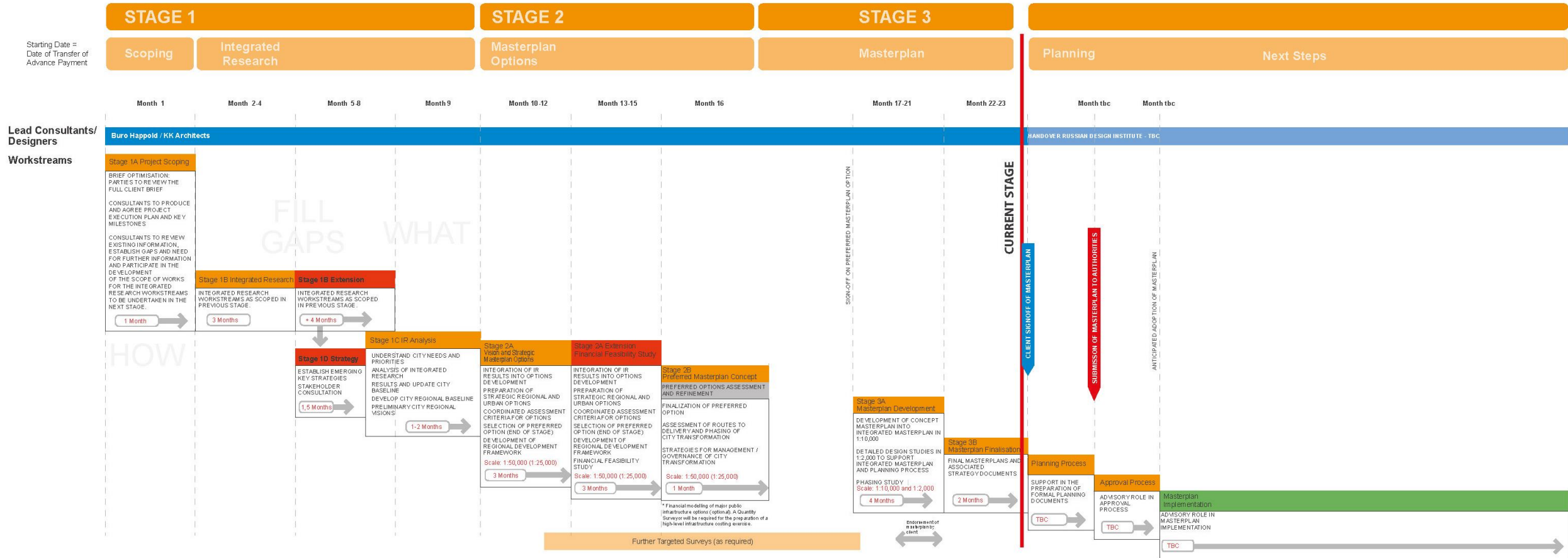
4. Industrial Park Development Strategy



5. Identification of the USP (Unique Sustainability Points)



6. Timing



7. Identity



Example - DGNB Scheme for Industrial Districts



Lune Delta, Bremerhaven
DGNB Certificate

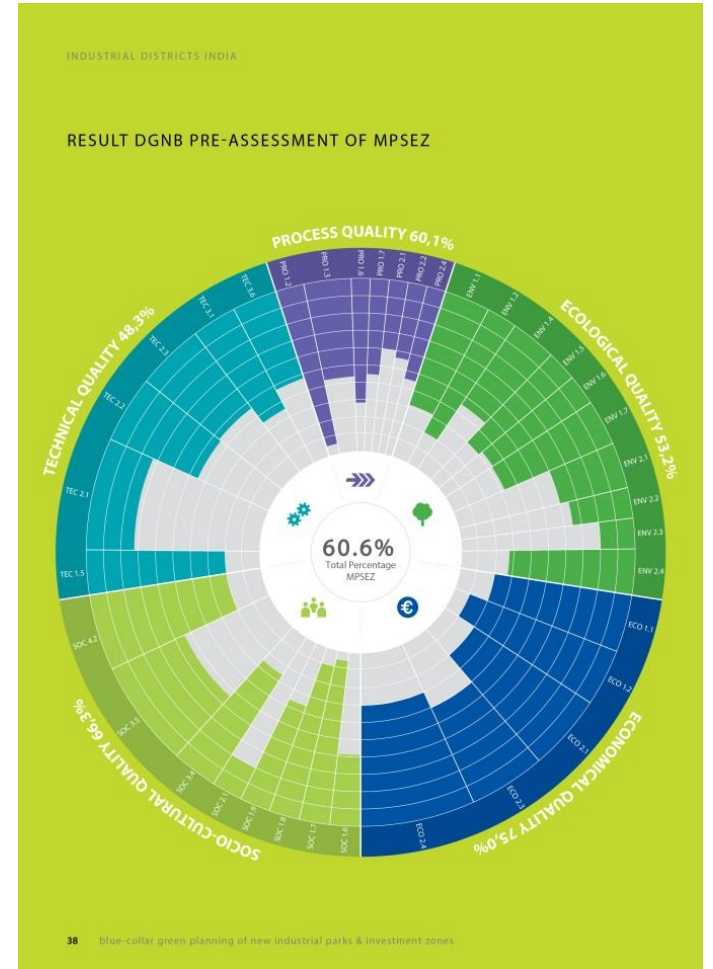


S, M, L, XL options for Industries



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KlimaEngineering

8. Monitoring & Evaluation



Central Question for this session

Should all Industrial Parks be Eco-Industrial Parks?

Key Discussion Points

1. Industrial development requires a clear Vision followed by a robust Policy Framework and a National Industrial Parks Programme (what is the role of AfCFTA?)
2. Demand v/s Supply led growth – what are the main demand drivers in Nigeria for manufactured goods?
3. Green/Circular Economic approaches v/s Traditional SEZ development approaches (what are the benefits and trade-offs)
4. Institutional Alignment and Enabling Environment (public-public / public-private / civil societies / funding & financing)
5. Key success factors for consideration/discussion:
 - Market assessment, regional trade integration and investor sounding
 - Preliminary design and infrastructure assessment
 - Industrial symbiosis and circular economic solutions
 - Financial feasibility (rates of return) and regional economic impact
 - Funding and operating business model(s)
 - Other?

Panel Discussion

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