

12,5 Principles



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CONFERENCE & EXHIBITION

Strategy



**“ The 12,5 principles of a money-making
alternative fuels strategy ”**

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Alternate Resource Partners (ARP)
2 & 3 February 2017, Barcelona, Spain*

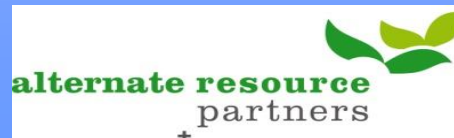


○ Introduction Alternate Resource Partners

○ 12,5 principles for moneymaking AF strategy

12,5 Principles

○ Take home messages



- Company established in 2009
- Group of consultants, engineers, trainers, coaches & field operators for resource management
- Worldwide experience in mature and emerging countries replacing all type of fossil fuel by waste (transformed to) AFR
- ARP & partners have > 150 years experience in all aspects of resource management and cement manufacturing when it comes to AFR
- UN, FAO & Worldbank consultancy on cement kiln co-processing

Introduction

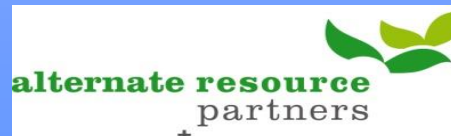


Main activities ARP:

- ✓ Resource management business development in cement, lime & electric power industry,
- ✓ Waste – to – AFR market research, feasibility studies, etc.,
- ✓ Pre- & Co-processing Marketing & Sales training & coaching,
- ✓ Consulting, reviews & audits on health, safety & environment behaviour,
- ✓ Development of specialized recycling machines for waste to AFR activities, example: oil - filter recycling machine for emerging countries

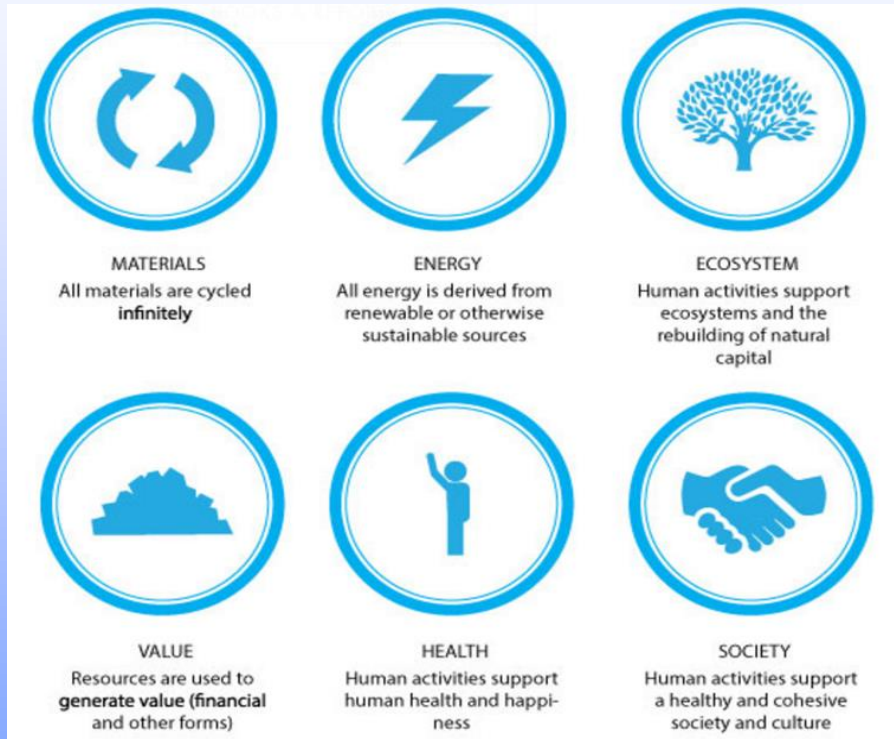


Activities ARP

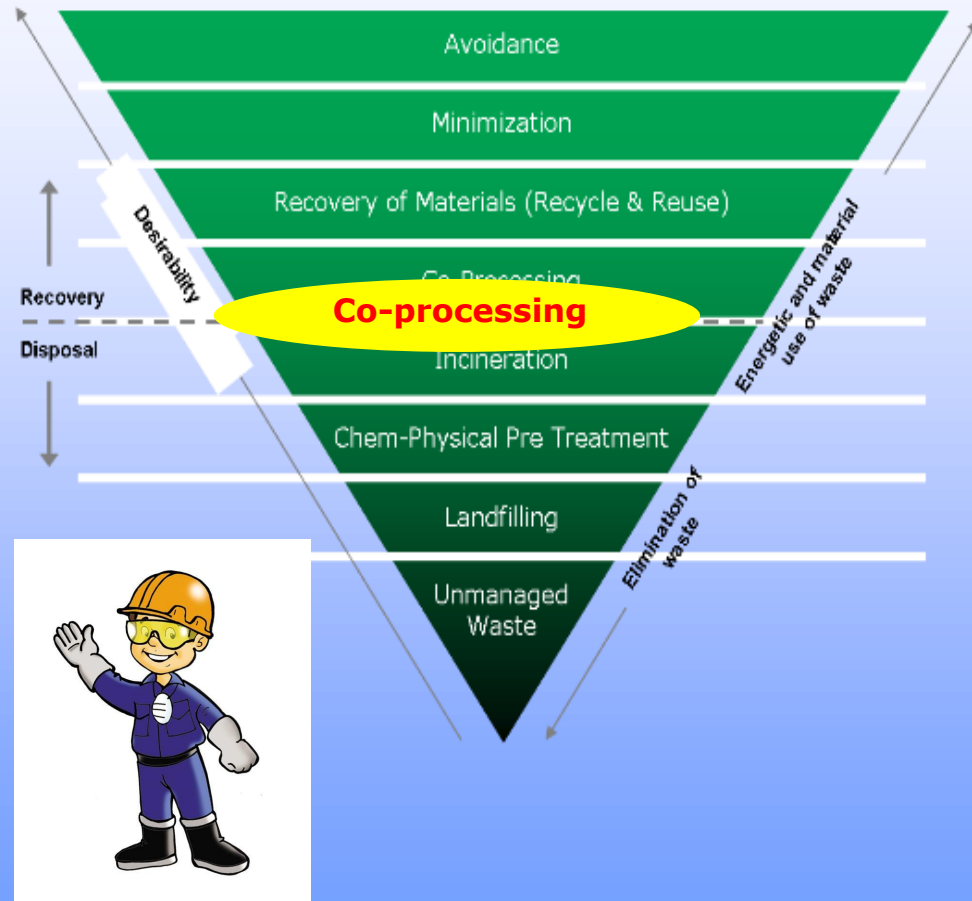


1. Know Basics waste management and adhere to waste hierarchy principles

○ Circular economy



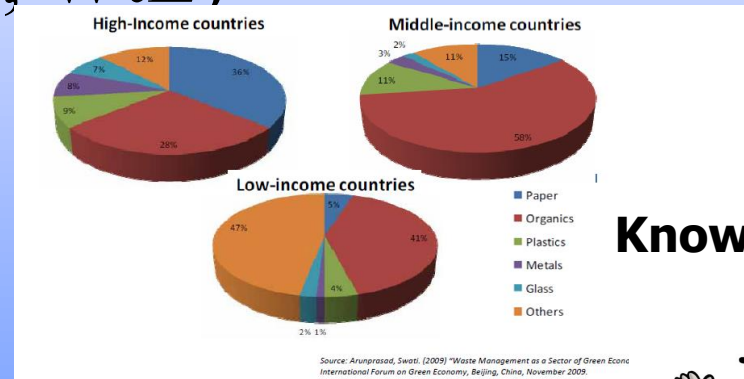
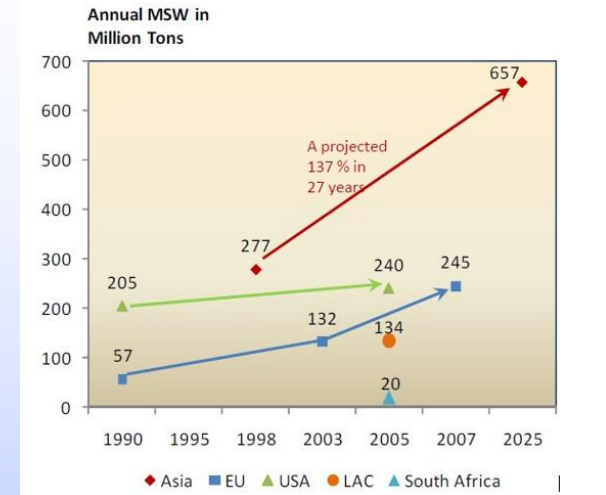
○ Waste hierarchy



Know Basics

2. Know waste/resource markets & value chains

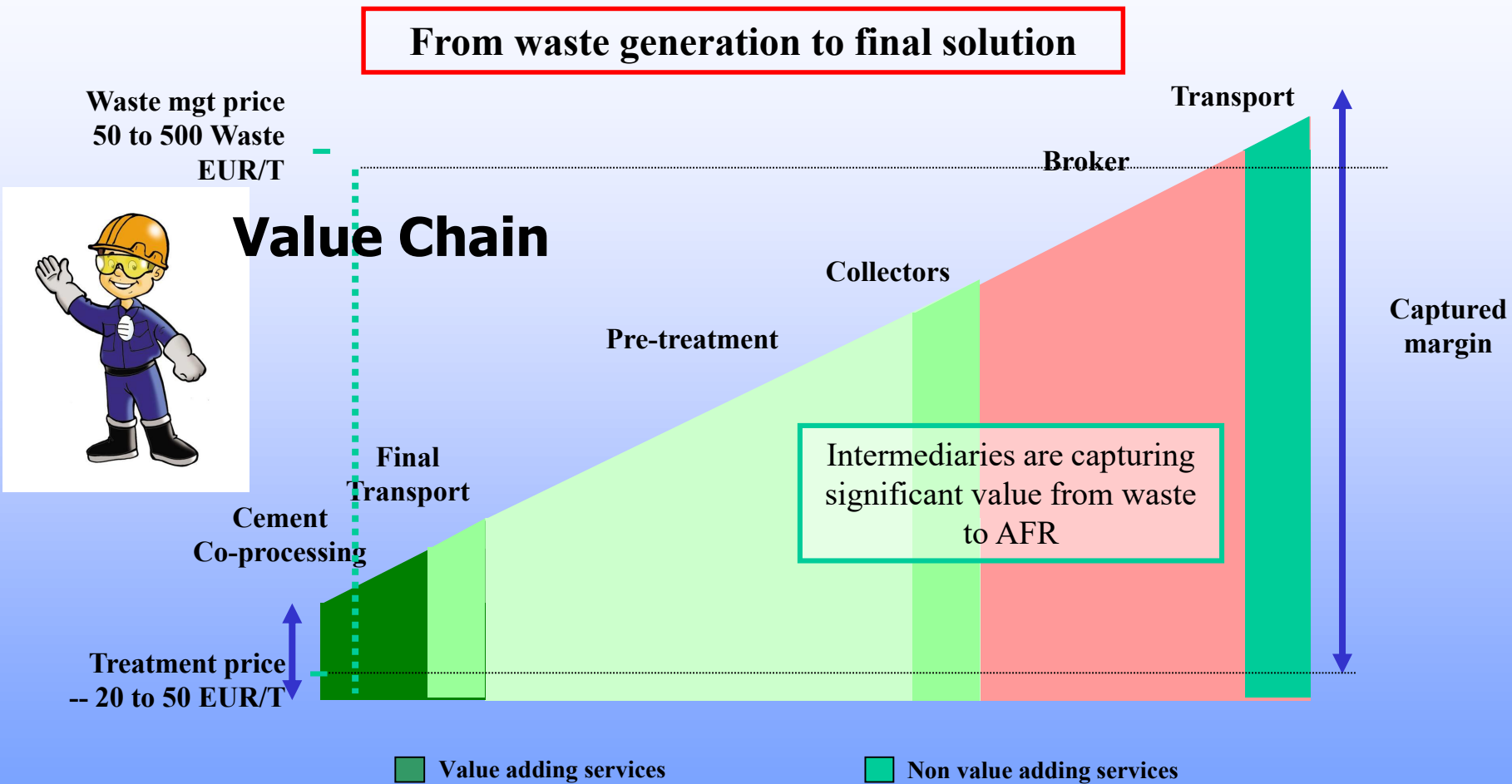
- Volumes & composition waste
- Type of industry base
- Available waste treatment technology
- Alternatives (Landfill, WtE)
- Legislation & role government
- New developments
 - Zero waste (to landfill)
 - Circular economy



Know Markets



3. Value chain integration increase margin and decreases the operational risks in cement kilns



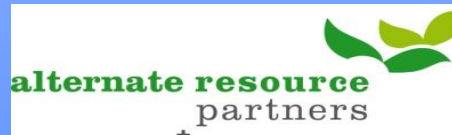
3. Make a **weighted** decision where to enter value chain

Decision where to enter

- There is no one solution fits all
- Depending on goals of AFR business & company risk taking culture several business models could be suitable:



- ✓ Use traditional buyer – supplier model for fuels
- ✓ Make JV with waste management to cover complete value chain for industry waste customers
- ✓ Invest in pre-processing facilities
- ✓ Participate with partner(s) in community (MSW) waste services, participate in public tenders for these activities



4. Recognize differences in cement & waste business

	Cement	Waste
Business	Product	Service
Focus	Stability	Opportunity
Speed of Response	Slow	Fast
Capital Intensity	High	Low
Market	Small # of stable customers w/ similar needs	Large # of customers w/ specialized needs

Differences

AFR Organization must bridge these two worlds

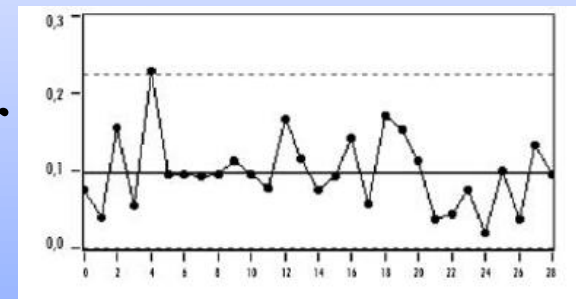
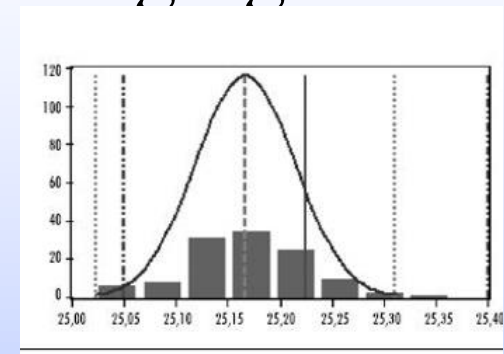


6. Get flexible environmental permits

- Flexible permits are key to ability to act adequate when needed due to changing legislation or markets, new waste opportunities, etc.

Examples:

- ✓ Rubber waste - not tyres
- ✓ Mixture of plastics/wood/paper – not RDF



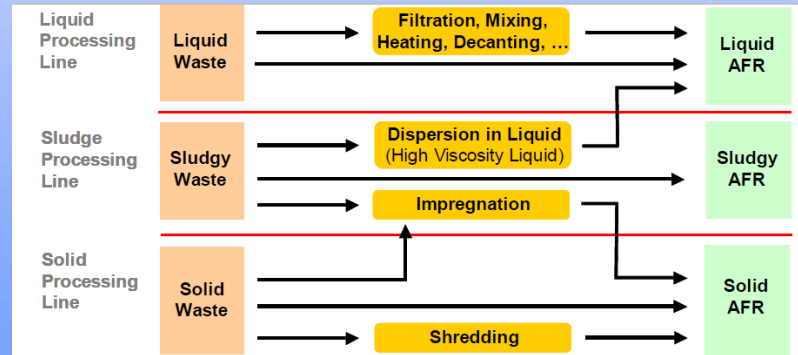
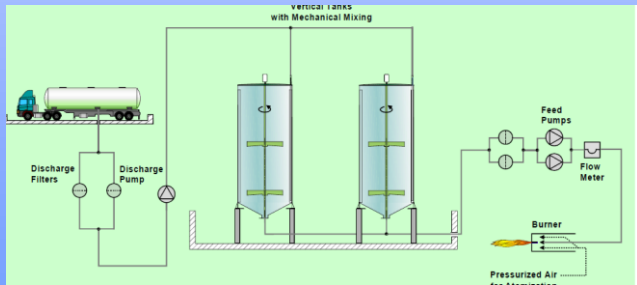
Permits should make it possible to use waste with incoming quality control & set emission levels and not a list of materials permitted



7. Develop & use flexible pre-processing technologies & equipment

- Pre-processing is not a science
- Flexibility for multiple low volume waste streams
- Larger volumes of waste need flexibility but also production and cost optimization

Need for continues looking for operational improvements and innovations in pre-processing



Innovation - improvement

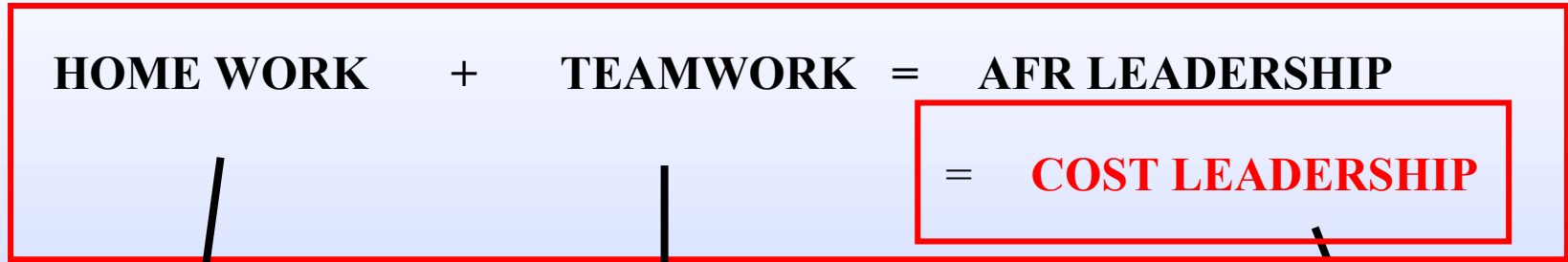
8. Know cement process and co-processing influences (including emissions)

- Know potentials and limits of kiln for Co-processing!
- AFR Quality must be homogenous, complying with strict acceptance criteria!
- Use Standard Installation for storage, handling, and dosing at kiln!
- Know how to cope with negative impacts on production rate, kiln availability, clinker quality and stack emissions!
- Watch out for innovative solutions to improve co-processing!

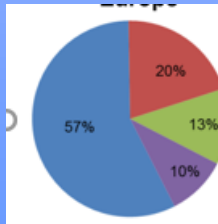
Know cement process



9. Do homework; set balanced realistic technical/economical cement & AFR goals



- ✓ Master clinker manufacturing & have fit plants
- ✓ Know the AFR market and master marketing



- ✓ Accept market and production constraints
- ✓ Share the successes



- ✓ Remain leader through competitiveness



10. Get backing of Sr. Management (CEO & COO) on goals AF program



- Walk the talk

11. Develop long & short term contracts with 365 days services for customers

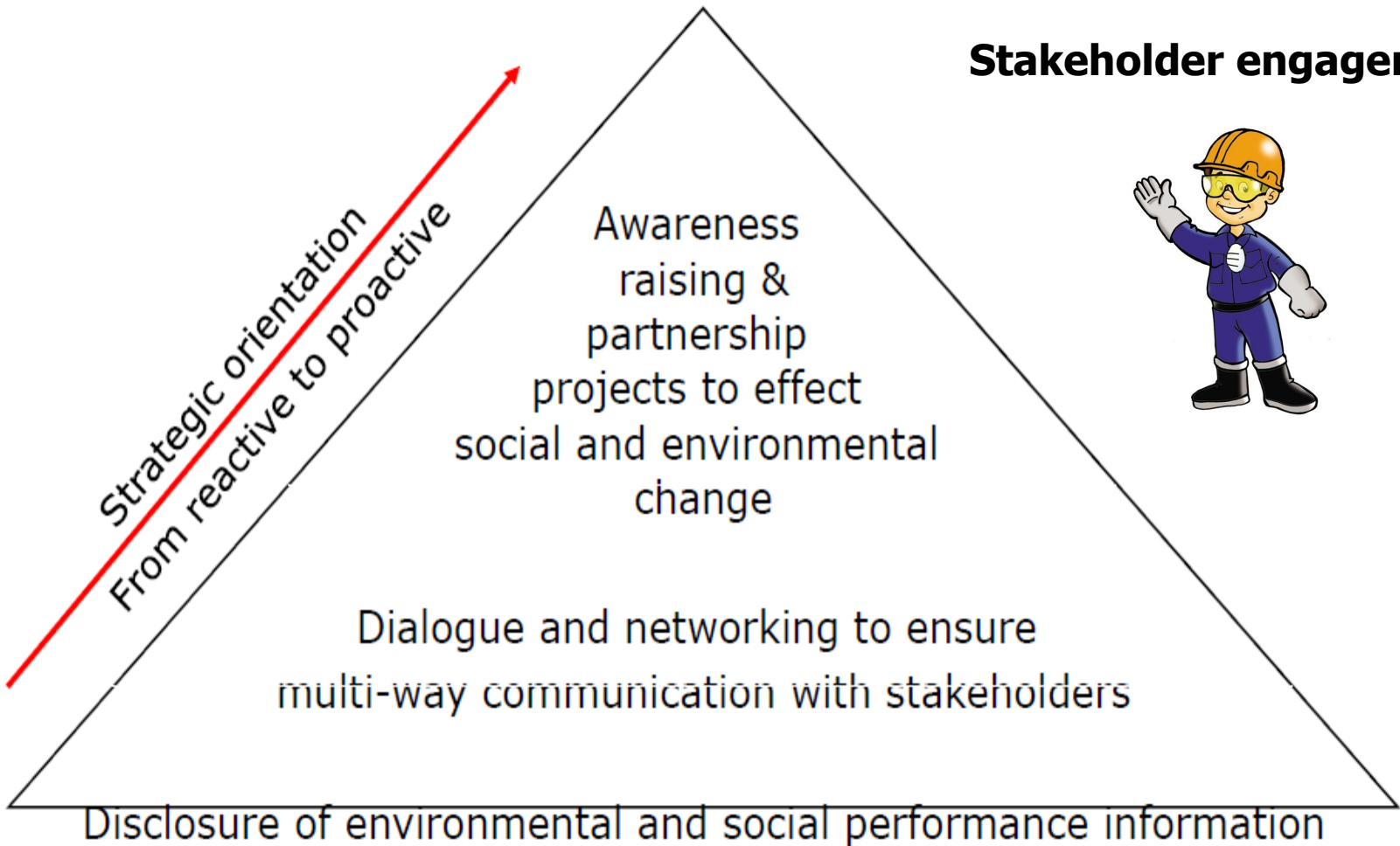
- Services need to be fitting the customers needs
- Long term or short term contracts depends on:
 - ✓ Market conditions
 - ✓ Risk of loosing contract volumes
 - ✓ Type of customer; municipality versus industry
 - ✓ Direct customers generating waste or WM companies pre-processing
 - ✓ Type of business relationship JV partner or preferred supplier

Type of AF contracts

Type	Known Scope	Share of Risk	Incentive for Meeting Milestones	Predictability of Cost
Fixed Fee	Very High	All Contractor	Low	Very High
Fixed Unit Price	High	Mostly Project	Low	High
Fixed price with Incentive Fee	High	Mostly Project	High	Medium-high
Fixed Fee with Price Adjustment	High	Mostly Project	Low	Medium

12. Develop stakeholder engagement plan I

Stakeholder engagement

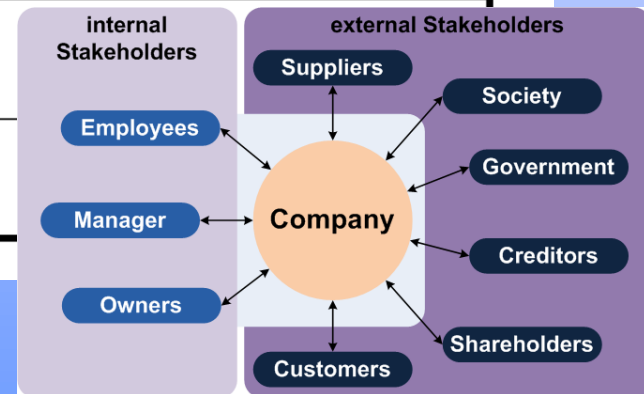


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12. Develop stakeholder engagement plan II

Objectives	Why a dialogue? What are the objectives?
Content	What is the task? Needs? Strategy?
Outcomes	What do we need/ want to achieve? What do we/ they expect to happen?
Stakeholders	Who has to be involved?
Process	How can the people talk about the content in a way which gets them the outcomes they want?
Budget	How much will it cost?
Timing	When does it have to be done?

Stakeholder engagement



12.5 Principle

- CELEBRATE SUCCESSES WITH ALL INVOLVED



**Celebrate
Success**






Take home messages



o 12,5 principles for moneymaking AF strategy:

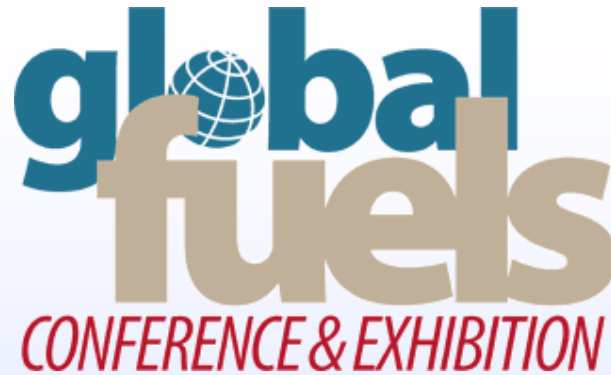
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|---|--|---|
| <ol style="list-style-type: none"> 1. Know Basic 2. Know waste/resource markets & value chains 3. Make a weighted deci 4. Recognize differences 5. Lobby for role of co-p 6. Get flexible environme 7. Develop & use flexib 8. Know cement process 9. Do homework; set bal 10. Get backing of Senior 11. Develop long&short term contracts with 365 days services 12. Develop a shareholder engagement plan (including crisis management) | <p>Celebrate successes</p>  | <p>ierarchy principles</p> <p>lue chain</p> <p>usiness</p> <p>ource solutions (legal/public)</p> <p>ologies & equipment</p> <p>luences (including emissions)</p> <p>al/economical cement & AFR</p> <p>COO) on these goals</p> |
|---|--|---|

12,5 CELEBRATE SUCCESSES WITH ALL INVOLVED





Dank U



Thank you



“The 12,5 principles of a money-making alternative fuels strategy”

Dank U voor Uw aandacht

Thank You for Your attention



DANK U





“The 12,5 principles of a money-making alternative fuels strategy”

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BACK UP SLIDES

Cement manufacturing objectives

Sustainability and environmental concerns have been key considerations for the cement industry in recent years.

WBCSD sees following targets for reducing CO₂ :

- recycling other industry waste while conserving natural materials
- managing utilized waste to end of its life-cycle reducing emissions from cement-manufacturing, including greenhouse gases, landfill, dust and NO_x
- increasing efficiency in manufacturing - requiring less power and fuel
- creating superior construction materials for wider range of uses improving durability of concrete through cement quality.

How does this fit with circular economy ?

WHAT & WHY CIRCULAR ECONOMY ?

- Best way to explain a *circular* economy is to compare it to our current *linear* economy. In our current economic system, we extract resources from our planet at an ever-increasing pace, turn them into products we often dispose after use. From the perspective of an individual or organization, that seems efficient. Zooming out to a global level shows how unsustainable this approach is.
- We need an economic system operating within our planetary boundaries
A circular economy is waste-free and resilient by design.
Designing economy in a way that is restorative of ecosystems, ambitious with innovation, and impactful for society
- All economic actors across the product value chains
(resource extraction / mining sector, product designers, manufacturers, distributors, retailers, consumers, repair / reuse businesses, waste management sector)
- All these actors will also be affected as producers of waste.



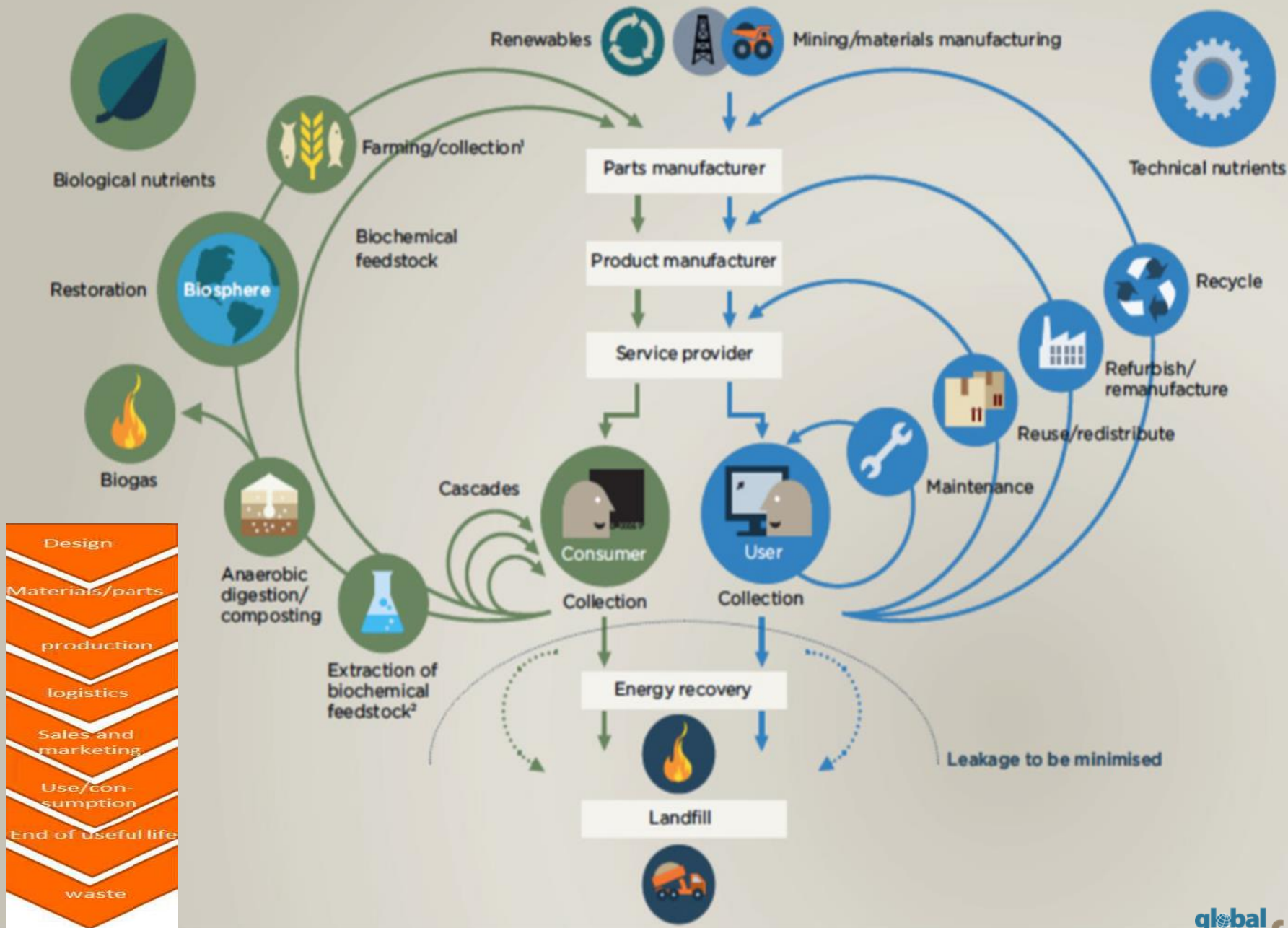
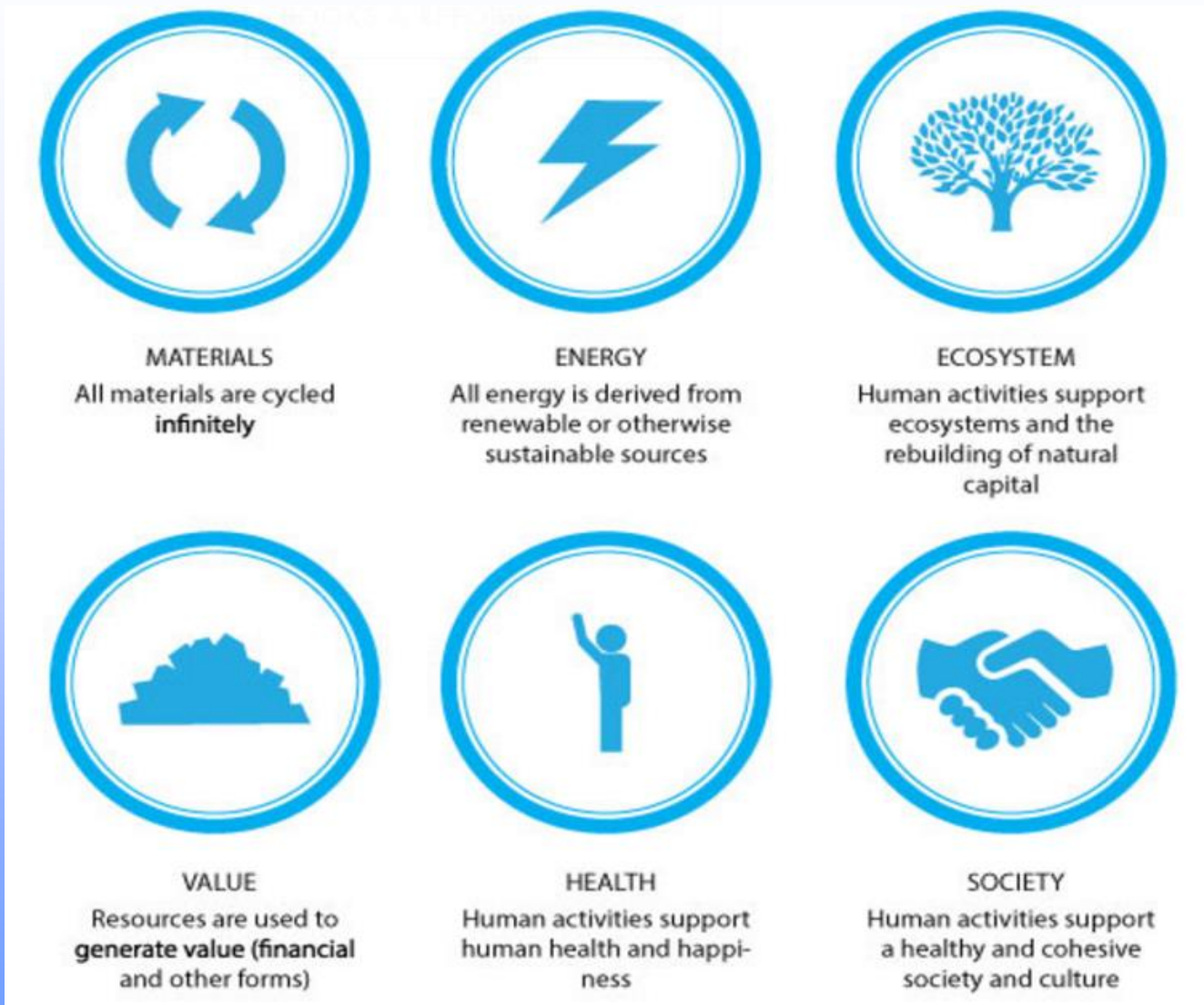


Figure 1: The 'butterfly diagram' of the circular economy. Courtesy Ellen MacArthur Foundation.

Topics, effects circular economy



AF & AR potential future markets

- Examples - AF
 - ❖ Improved quality RDF/SRF by segregated collections of MSW & Industrial/commercial waste and improved pre-processing
 - ❖ Water treatment sludge of “Grondstoffenfabriek”
“Commodity (resource) factory”
waste water treatment initiative in Netherlands
 - ❖ By-products of bio based industry
 - ❖ Circular economy initiatives in packaging, textile and carpet will offer opportunities

