Business Cases for Circular Construction & Demolition Projects

Expert Workshop IV – May18th 2022

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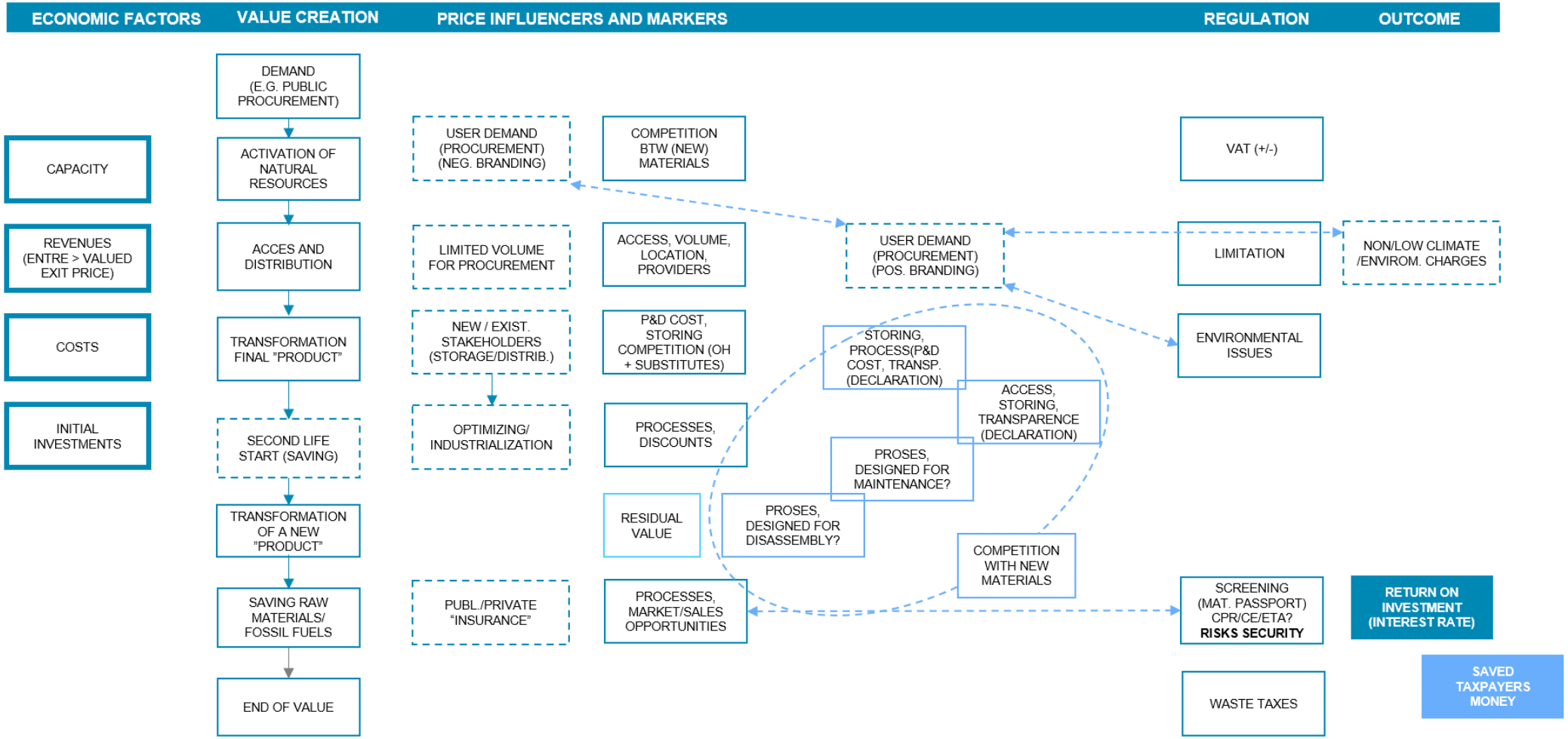
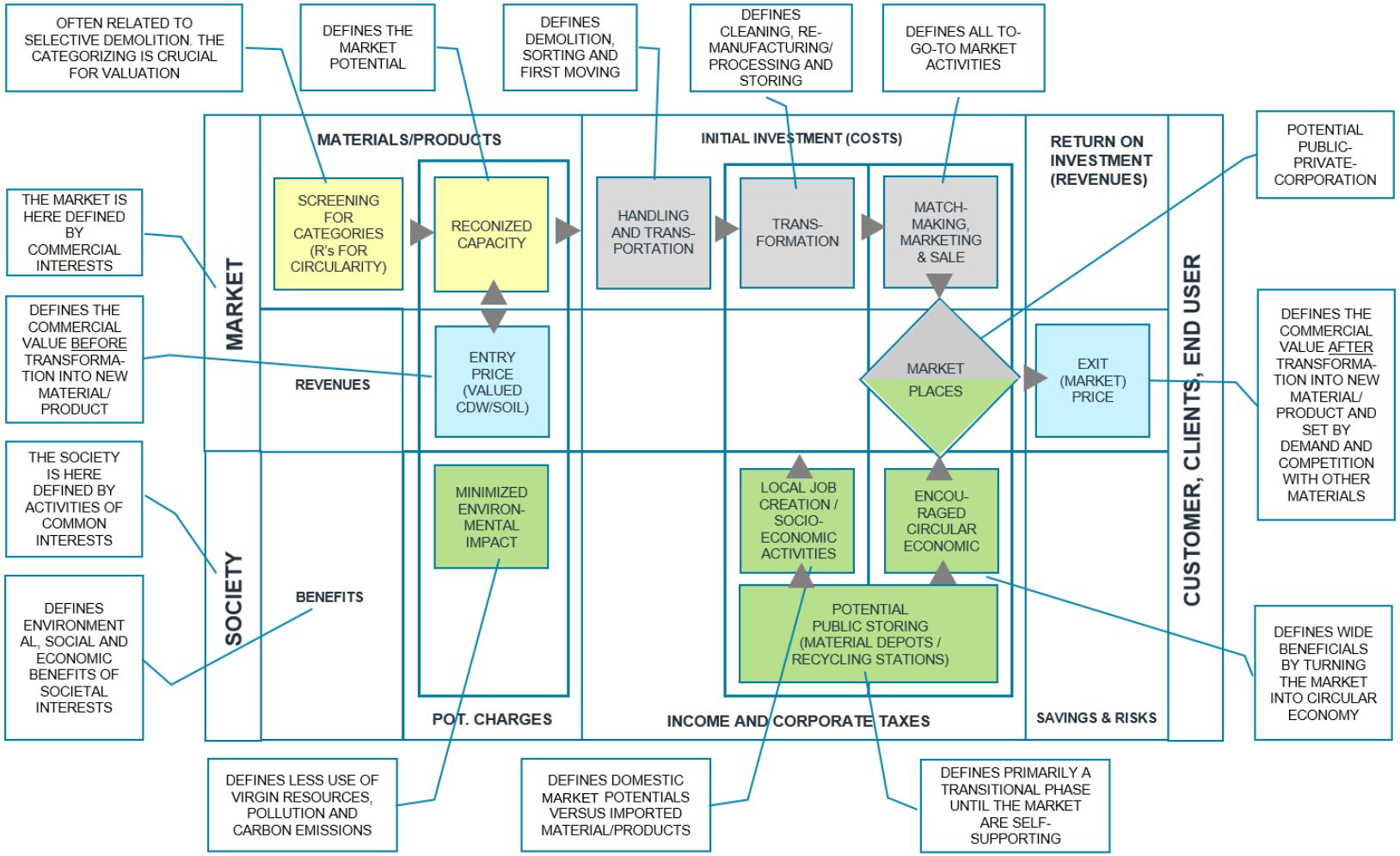
Business case (combined market issues)



Society-Market-Business-Case-Model



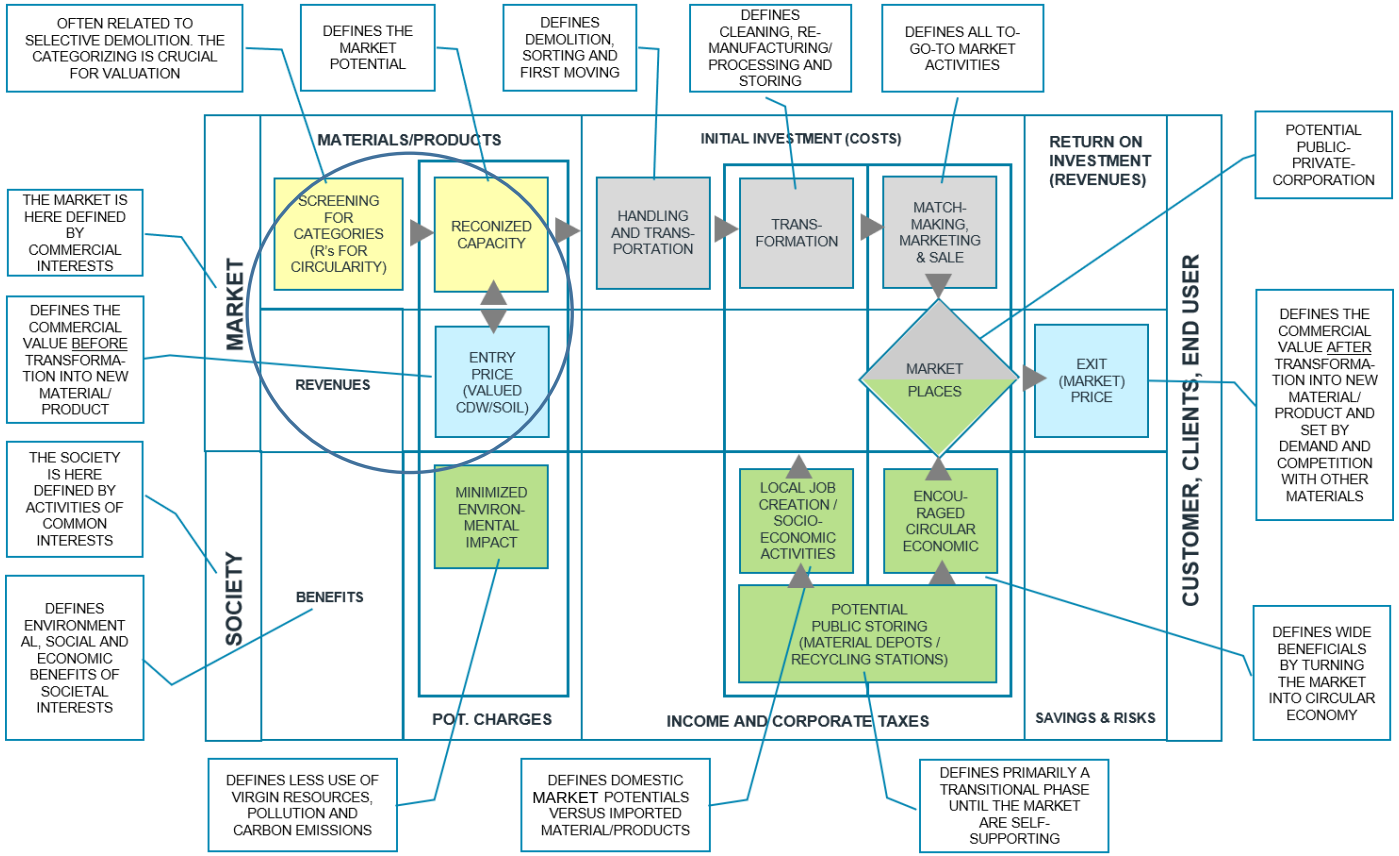
Society-Market-Business-Case-Model

Rethink and reduce

Definition: Re-thinking solutions to be mindful and reduce of resource use and waste production.

Focus: Which structures and resources / materials can be saved, and which can be continually / new resources / materials
Quality and volume

Tools: Resource and environmental mapping (LOUS, LCA etc.), market analyses (market value) and price benchmarking (new products)



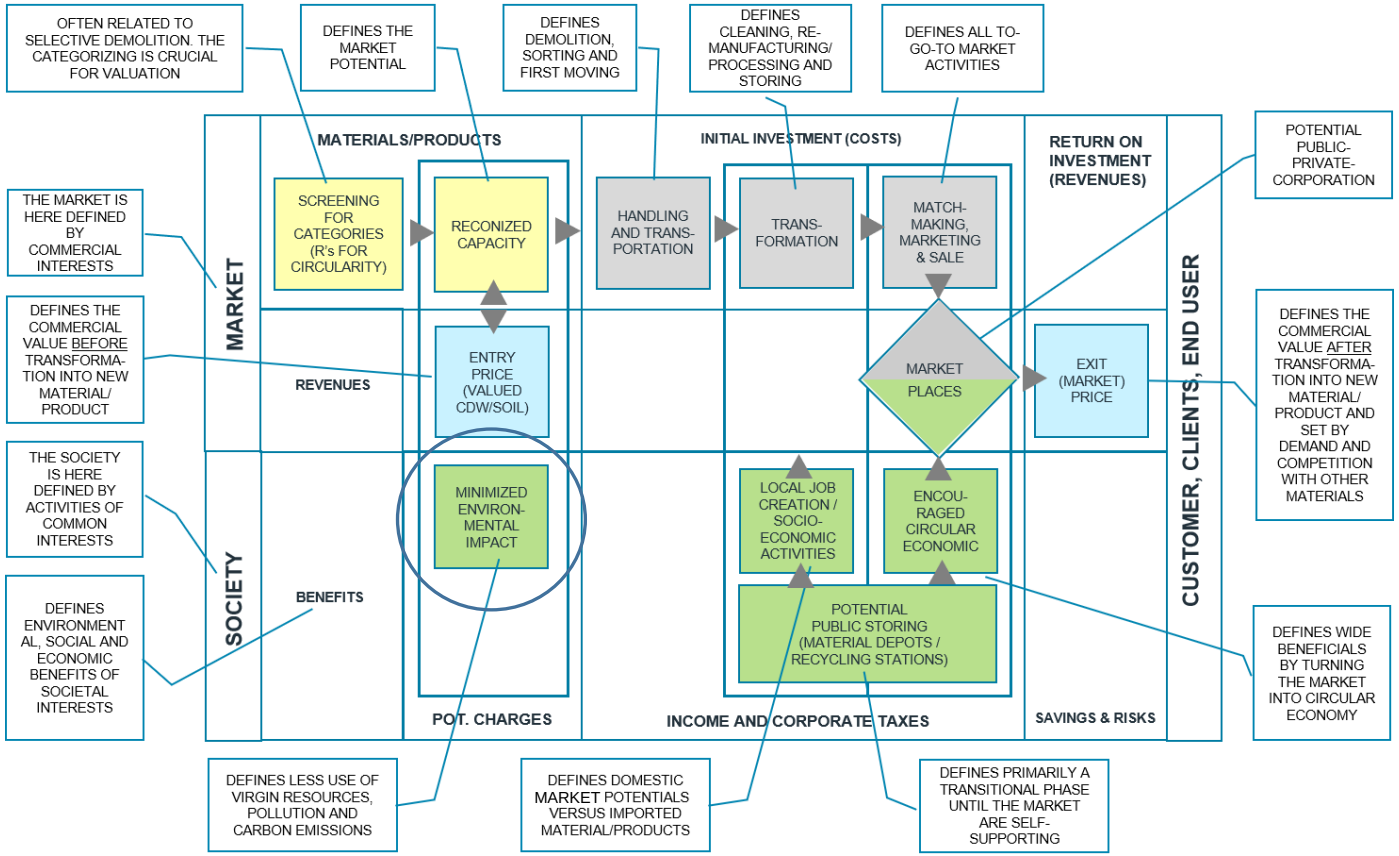
Society-Market-Business-Case-Model

Recover

Definition: Recover embedded energy from non-recyclable waste material where feasible - through waste-to-energy processes such as combustion and gasification.

Focus: Value assessment – compared to substitutable energy sources
Decreasing carbon/GHG emmisions

Tools: Market dialogue, heat planning



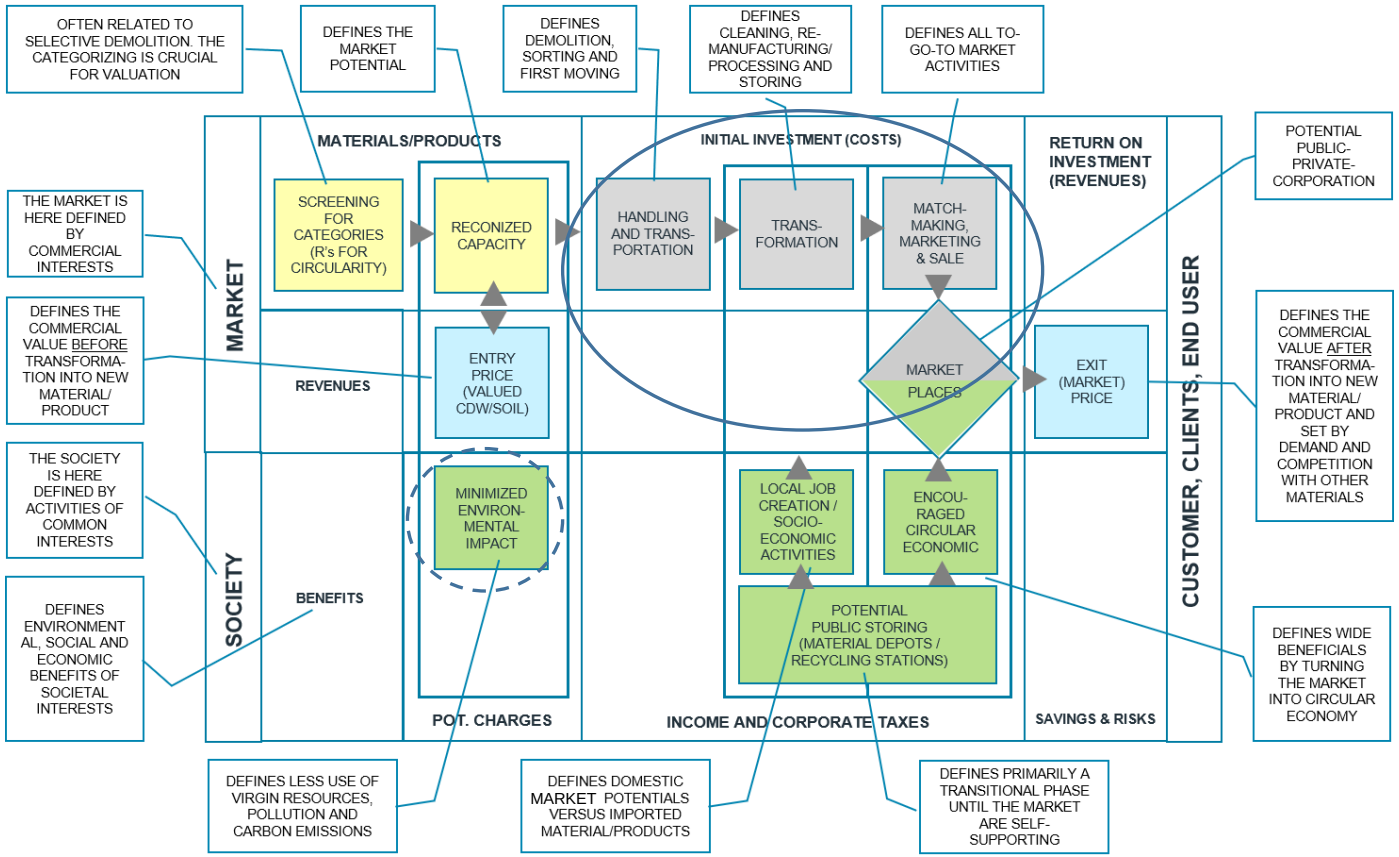
Society-Market-Business-Case-Model

Reuse, repair, refurbish, recycle

Definition: Different methods / levels of transformation into new use

Focus: Sorting (saving value), manufacturing (increasing value), storing / distribution (minimizing costs)
Substitution of natural resources and less pollution
(Market push/pull)

Tools: Logistic, storing, value chain alignment and / or partnerships, manufacturing processes



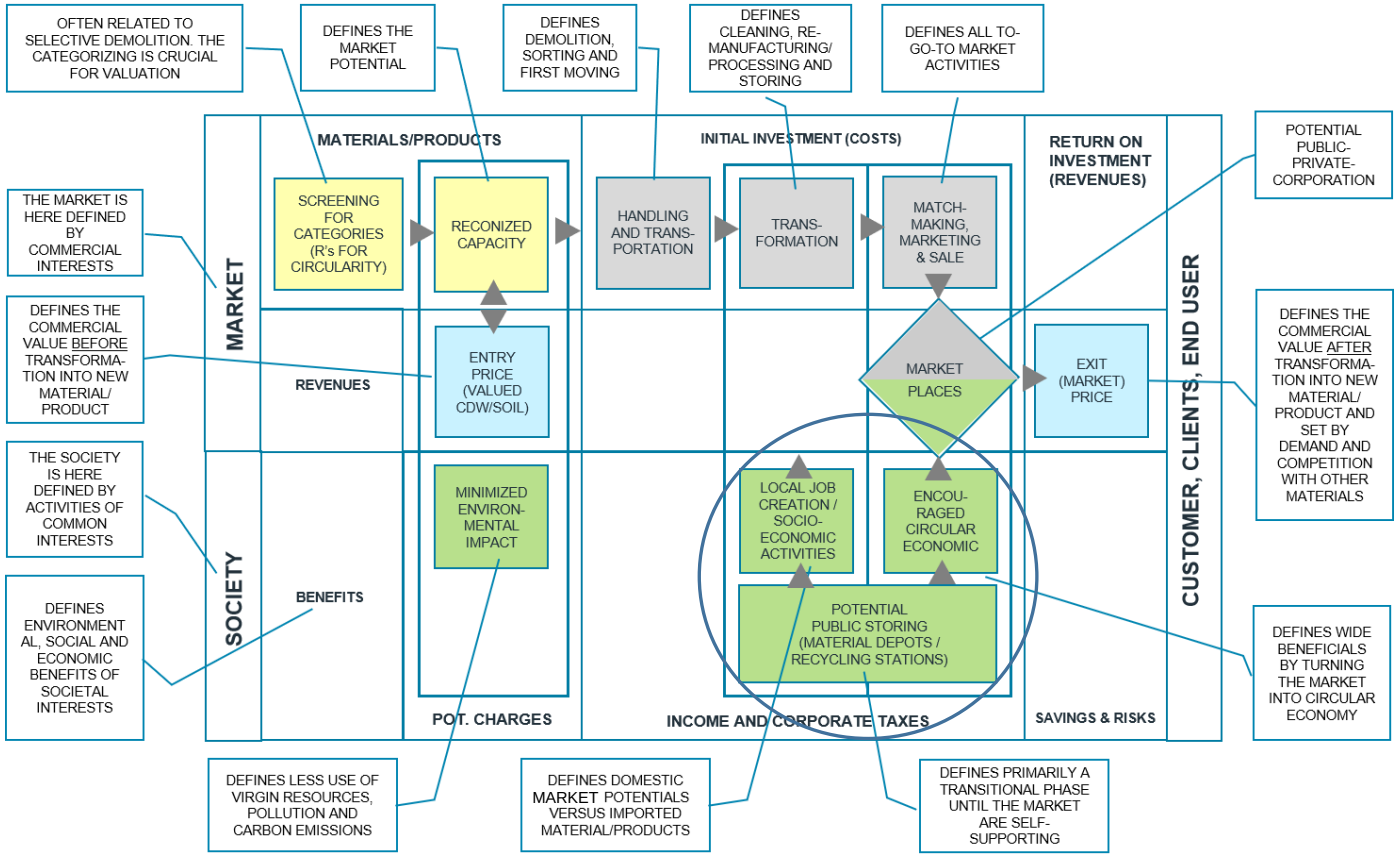
Society-Market-Business-Case-Model

Societal benefits

Definition: Off-market benefits (including capitalizing of non-economic values and benefit)

Focus: Local innovation, (local) job creation, encouraging market changes (pull-strategy), increasing local tax pool

Tools: Market dialogue, conscious collaboration strategy on e.g., temporary (non-profit) storage



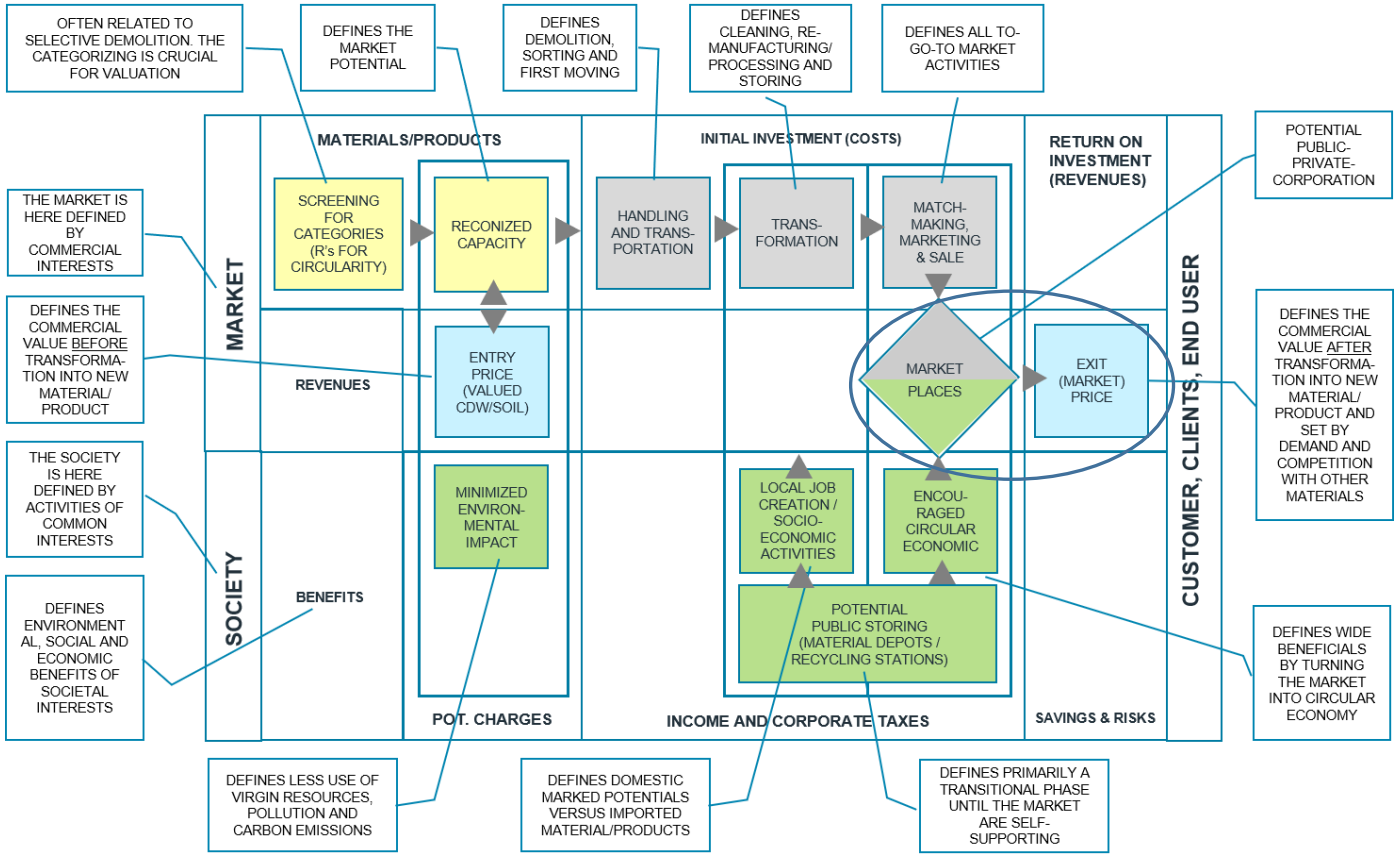
Society-Market-Business-Case-Model

Material meets market

Definition: Material value on free market (often compared with similar (new) material)

Focus: Market competition – how much will the customer pay extra?
Market pull (access to quality and volume)
Risk management

Tools: Market analyses, storytelling



Templates

Supplier business case analysis

Material/product (CDW/soil)	Crushed concrete as new aggregate materials (Example)	
Pricing elements	**Available capacity (access) Ton / M³**	**Definition**
Secondary material / product (CDW/soil) – entry price (€)		The entry price can be negative or positive. If a building owner do not want to capitalize the value of CDW after demolition, the entry price can be zero or be valued as a revenue for e.g., the demolition company.
Handling, transformation, and marketing costs (€)		Includes e.g., handling on site, transportation, transformation into high-valued recycled aggregates (labor costs), storing and marketing / sale.
Certification costs (€)		Includes e.g., testing and certification regarding to CE/ETA (Building Products Regulation, EPD (Environmental Product Declaration)
Investments (€)		Includes initial investments in equipment, buildings, and land. If CDW/soil are stored by e.g., a client, the investment cost will be lower in the specific (project based) business case.
Return of investment (€)		Typically estimated business income e.g., for re-investment
Secondary (CDW/soil) – exit (market) price (€)		
New material / product (€)		Comparable market prices – it might affect the market price in terms of competition

Client/procurer business case analysis

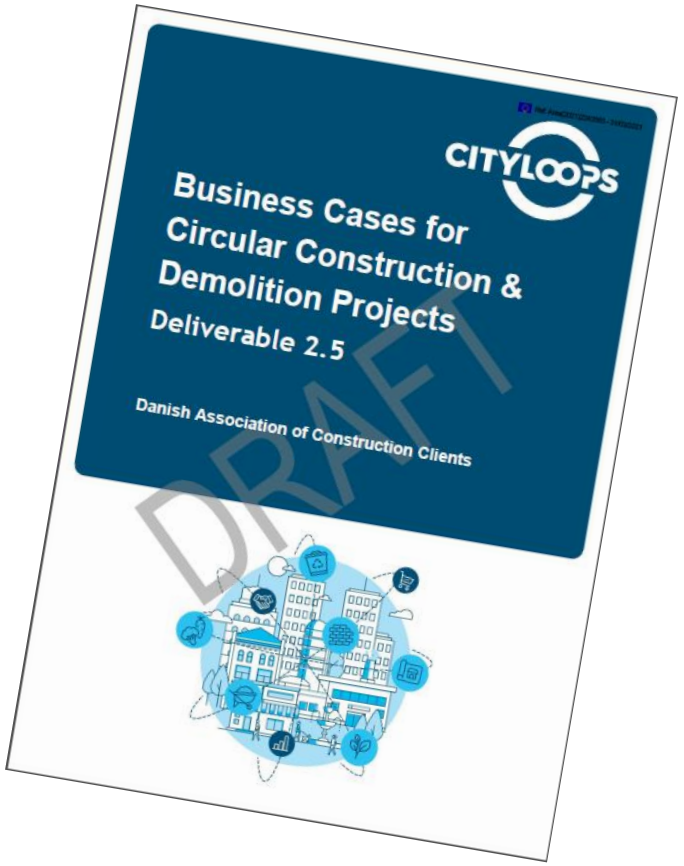
Material/product (CDW/soil)	Crushed concrete as new aggregate materials (Example)		
Costs, revenues, and capitalized benefits	**Accessible capacity (access) Ton / M³**	**Needed (additional[1]) capacity Ton / M³**	**Definitions** Costs/negative effects are marked by minus (÷)
Economic impact (€)			Charges, local income taxes from new jobs, local corporate and sales taxes (perhaps capitalized branding)
Environmental impact (€ or capitalized non-economic benefits)			Includes capitalized benefits as saved virginal resources, saved CO_2 emissions (LCA), saved energy, charges (public benefit) etc.
Social impact (€ or capitalized non-economic benefits)			Includes e.g., saved cost by socio-economic activities
Other impacts or benefits (€)			E.g., valuated reuse or recycling of own CDW and / or soil, temporary storing
Calculated risk cost (€)			E.g., legal consultancy, insurance
Offered market price (€)			Includes all capacity, transformation, marketing costs plus sales taxes
Offered market price for new material (€)			For comparison

[1] *When the capacity of CDW/soil is too small for the whole enterprise / project, and it is necessary to add with new (conventional) materials / products, based on virginal resources*

Questions

- Is the model understandable and does the model reflect the main business case issues?
- Do you have access to similar simple model who has been used and has succeeded?
- Do you see some weaknesses in the model which we should be aware of in the further test process?

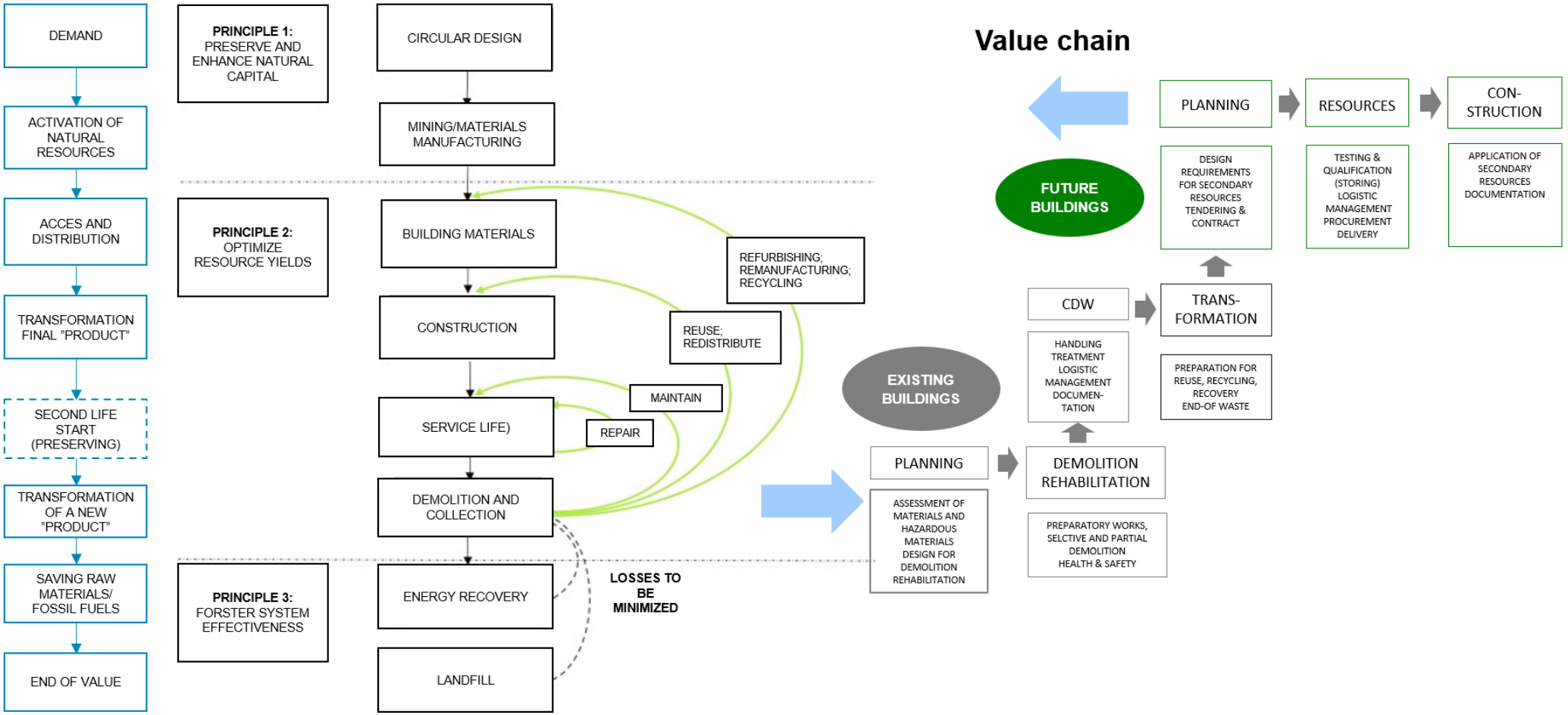
Find generic circular market description and more information about the business case model and templates her: https://cityloops.eu/circularity-in-cities/business-cases



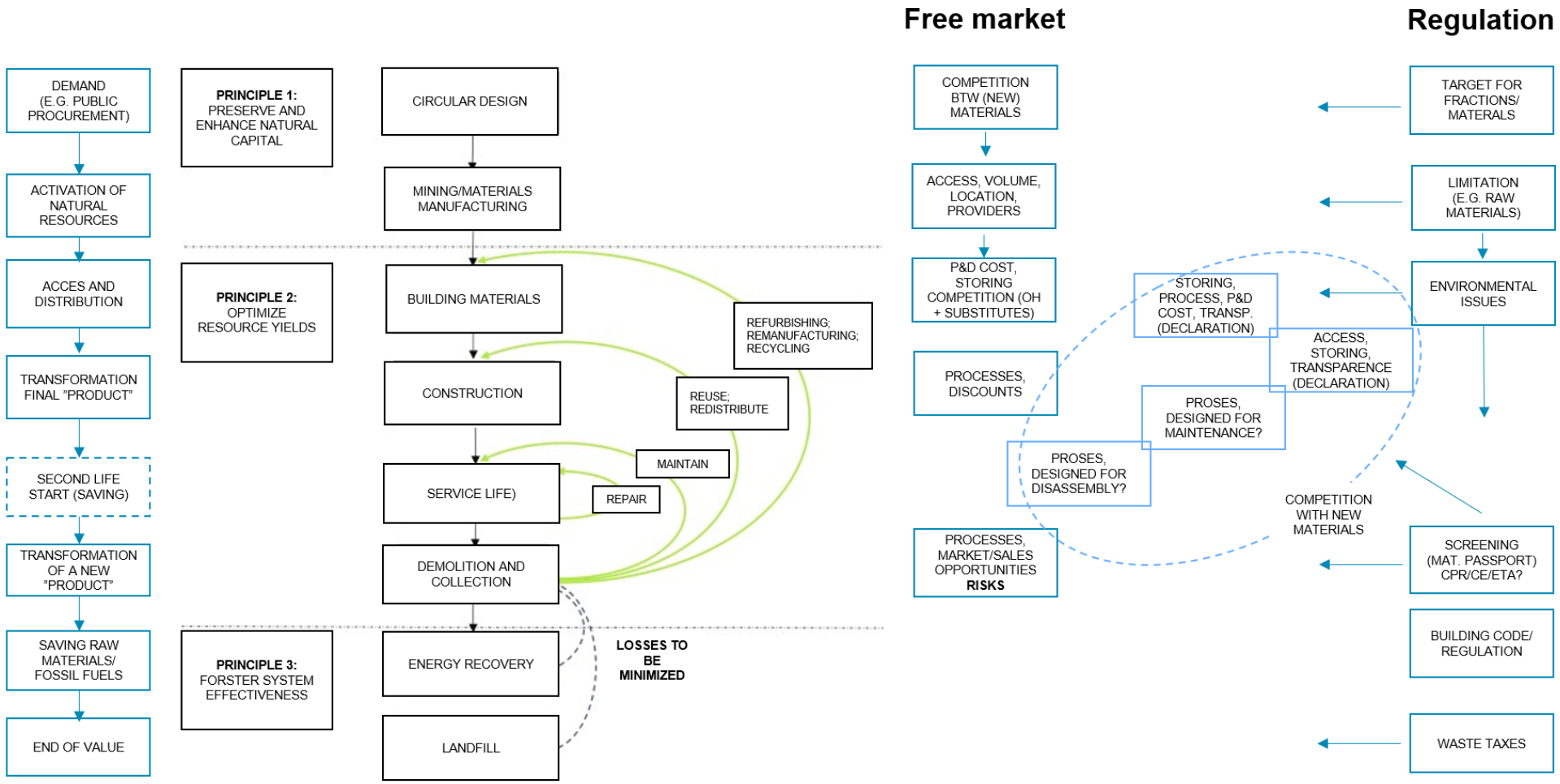
Thank you for listening and for your feedback!

EXTRA SLIDES

Value creation (market drivers)



Price markers (supply chain)



Price influencers (customers etc.)