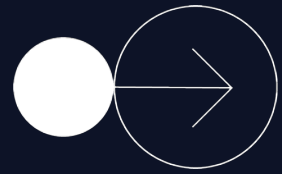


# Rethinking Circular Use of Natural Resources

Giving waste a fair value





Circular Strategy & Roadmap Development, Fore Sighting & Scenario Creation, Circular Business Modeling & Opportunity Identification

# Starting the Biomass Revolution

Construction and maintenance of houses, offices, roads, and other infrastructure, especially in the developing world, represents the most extensive resource footprint, with 38.8 billion tons. A more climate friendly alternative – you think – would be wood.

Wood is a natural resource that, unlike fossil raw materials, is not regionally limited but available worldwide. It continues to grow. But, it is not an infinite resource, as forest areas are shrinking due to growing demand. Energy generation from wood is considered climate friendly. In the context of the circular economy, however, burning wood is not a desired action, as the raw material in its original form is thus no longer usable. But what is about the unused, dead wood in our forrests—not suitable for further use—being biomass waste?





# Increasing the value of biowaste

Utilizing the biomass residues and biowaste keeps materials in the economy for longer, closes material loops, and increases resource productivity. Agricultural or forestry biomass and biowaste can be converted into a range of products, including fuels, feed, biobased chemicals, biopolymers, biopharmaceuticals, and others. A new economic and ecologic opportunity lies in increasing the value of biowaste by identifying alternative use cases that improve natural resource efficiency and material renewal.



# A B2B marketplace for raw materials

BioEnergyPool (BEP) is a start-up with a mission to lower raw material use through prioritization of circular resources. They want to help transitioning waste-based bioeconomy by rethinking the utilization of biowaste materials to reduce the dependency on fossil resources. They chose the woody biomass and forestry residues as their entry market where they want to ensure technology-enabled transparency of local woody biomass pricing through supply chain redesign and establish a B2B marketplace for raw materials from the circular economy.



# Biomass Business Ecosystem

We unraveled the multidimensional landscape of their sustainable business and its complex ecosystem to guide their business decisions. In a three-step-consulting we supported identifying unique customer benefits and competitive advantages for the biomass value chain by exploring future scenarios and strategic paths to win in the German Biomass market and achieve a complete circular business.

The outcome presents new ways of repurposing and redistribution of waste wood (as opposed to the incineration process), which directs BEP's immediate and future activities to compete in the biomass sector.



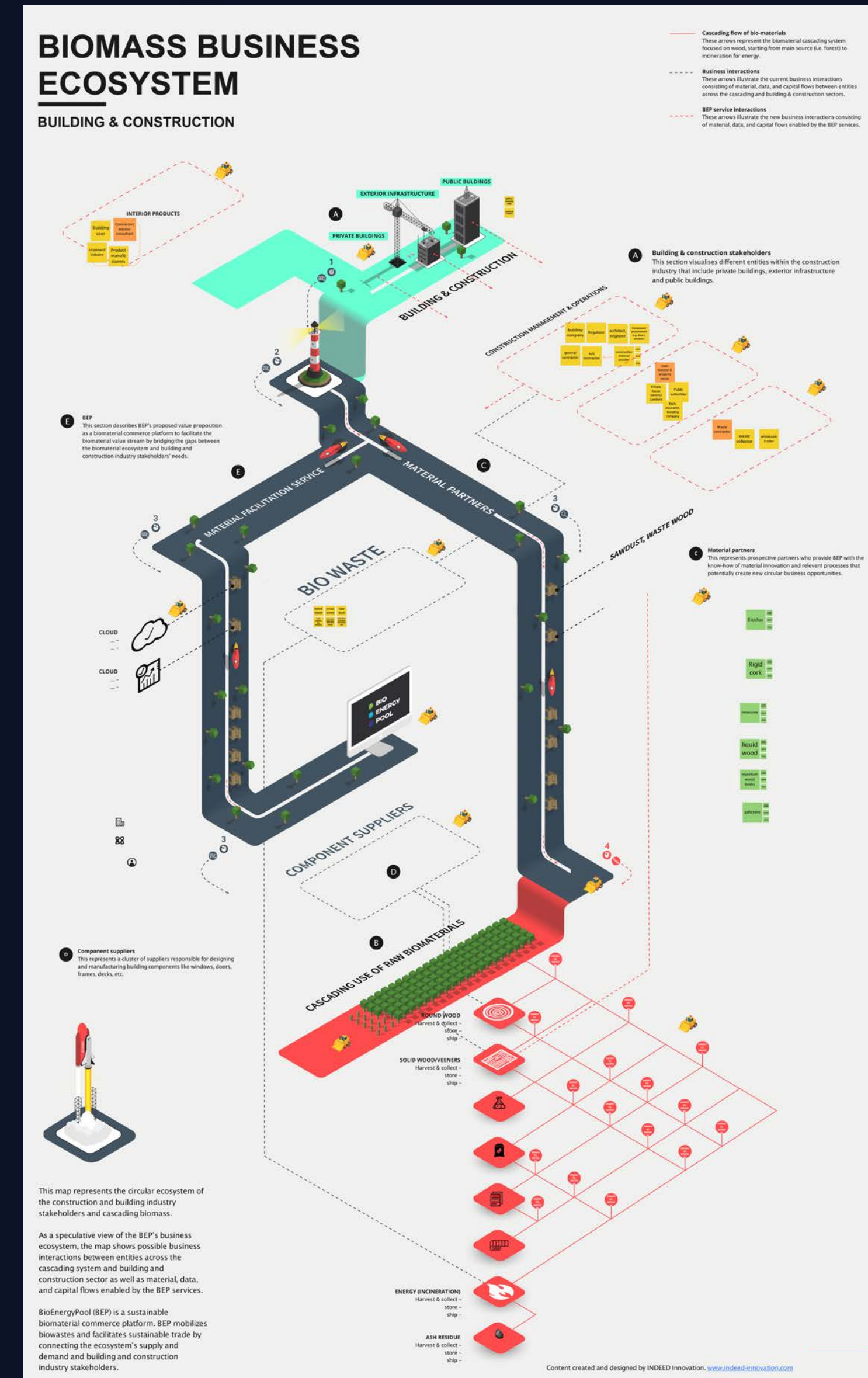


# Construction & Building as Entry Point

We focused on the construction and building industry as an entry point to start the biomass innovation. Considering the global material footprint and societal needs concerning the construction and maintenance of houses, offices, roads, and other infrastructure, the opportunity is huge.

We created a future scenario of a biomass commerce platform for sustainable building and construction to improve biowaste supply utilization and facilitate the exchange of materials, data, and capital by connecting supply and demand. In this concept BEP facilitates the biowaste value stream by connecting the supply and demand between the biomass ecosystem and building and construction industry stakeholders.

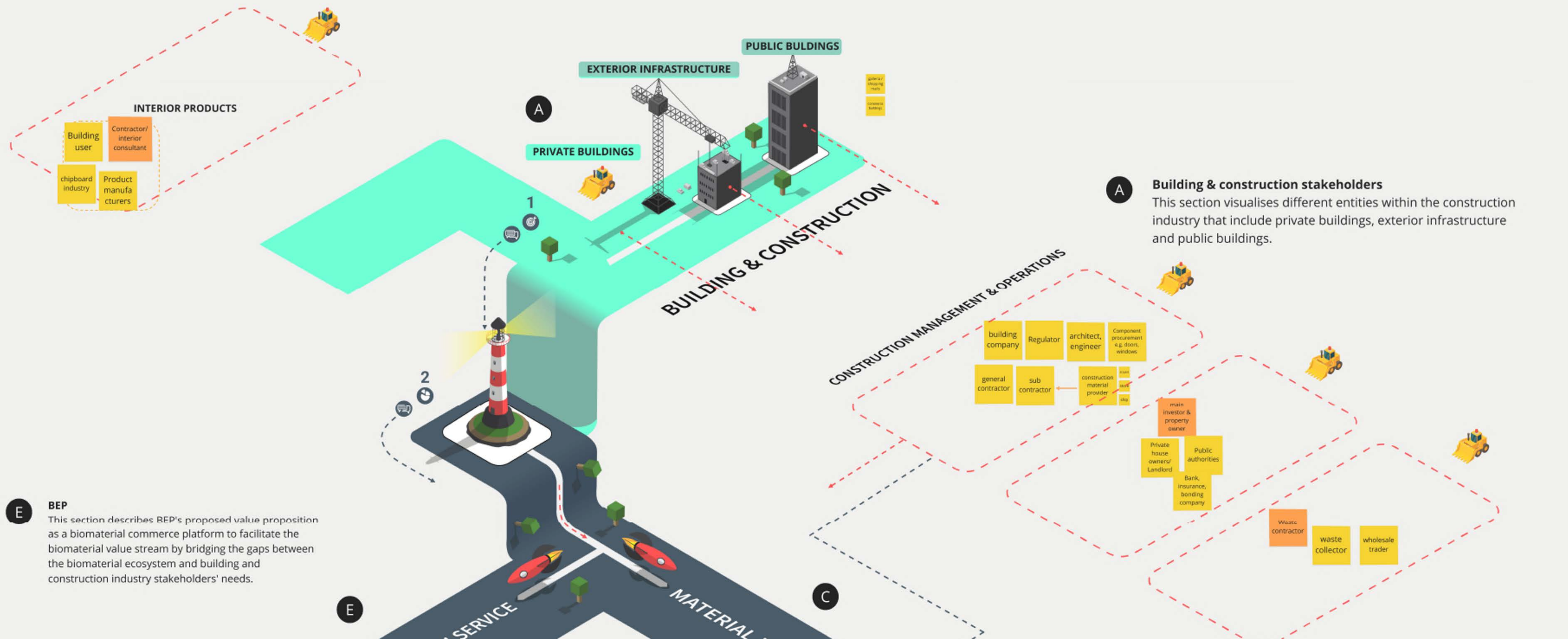
We developed a strategy for BEP aiming to increase the biowaste material's value (price) by promoting the by-products of the cascading system and relevant ancillary services, increasing the demand for renewed waste wood in the construction industry. Like this, BEP will bridge the current gap and flow within the biomass value chain by focusing on the regional biowaste and improving its utilization as cost-efficient supply for the building industry.



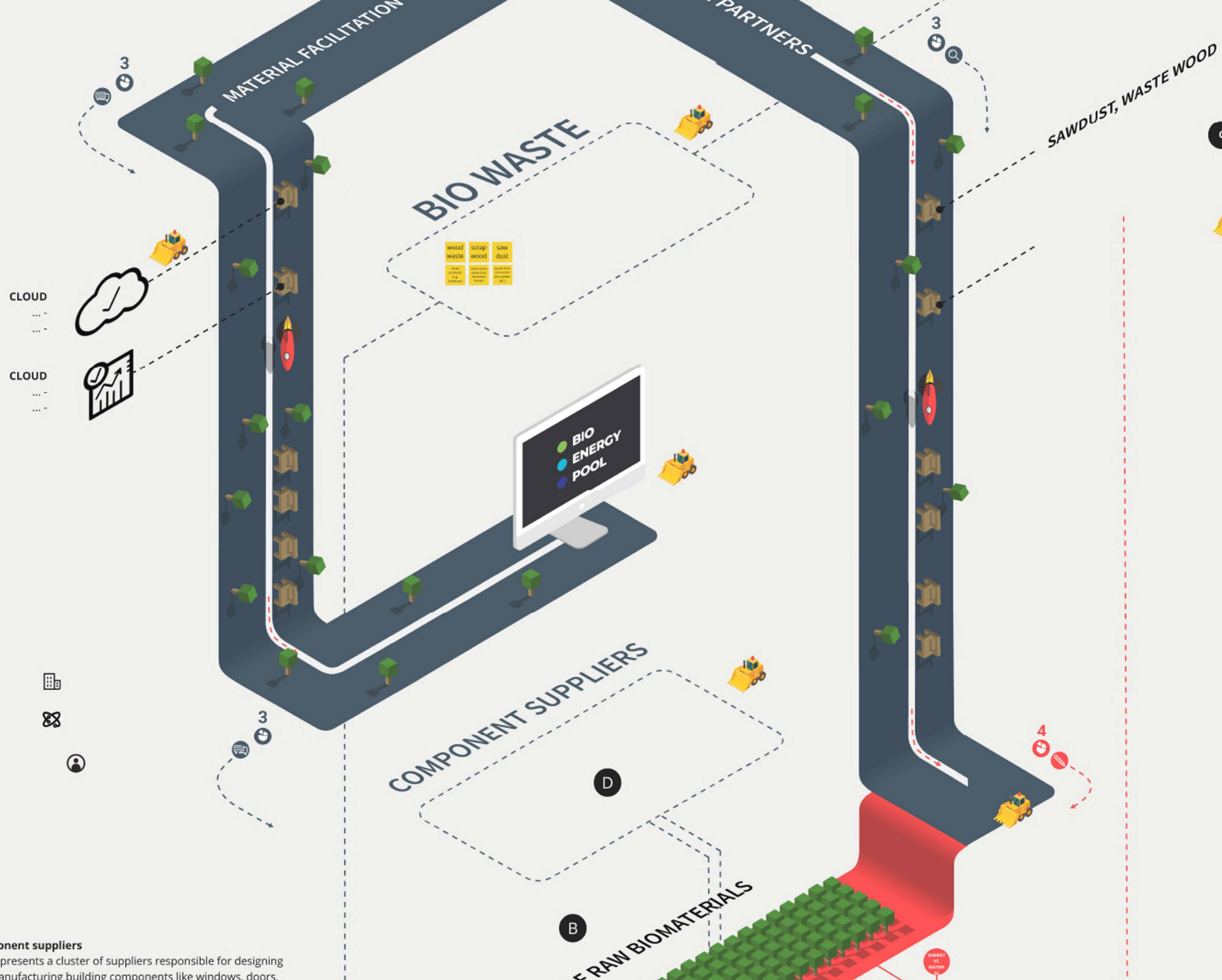


# BIOMASS BUSINESS ECOSYSTEM

## BUILDING & CONSTRUCTION







**C Material partners**  
This represents prospective partners who provide BEP with the know-how of material innovation and relevant processes that potentially create new circular business opportunities.



**Biochar**

**Rigid cork**

**timbercrete**

**liquid wood**

**mycelium wood bricks**

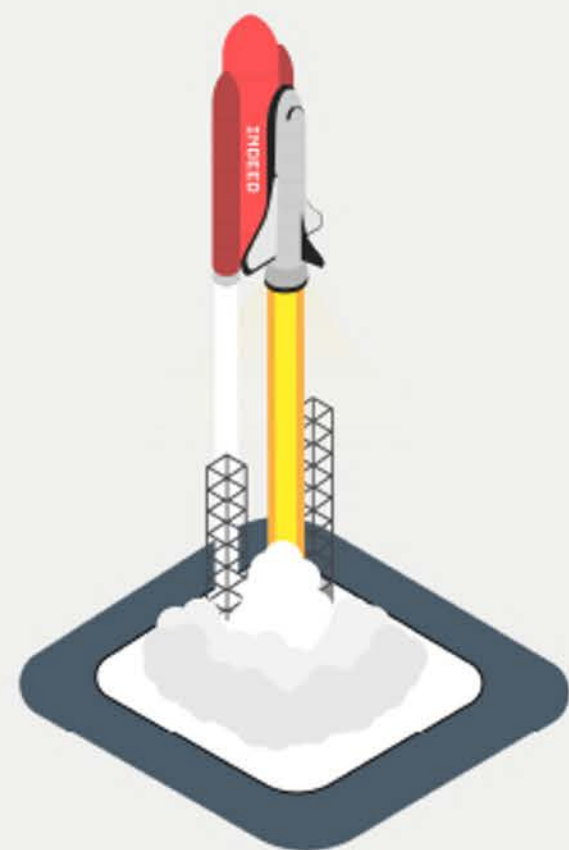
**ashcrete**



D

#### Component suppliers

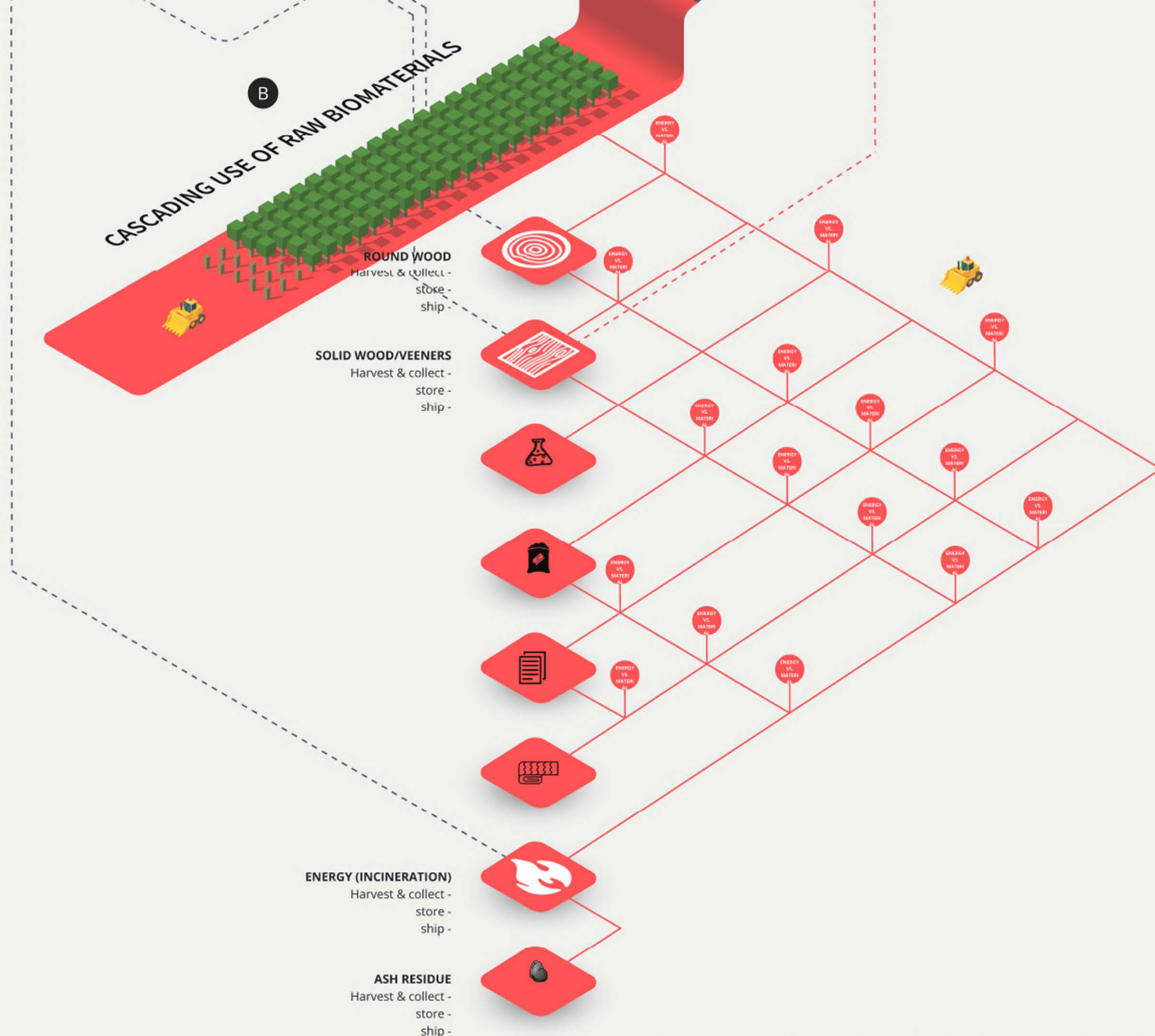
This represents a cluster of suppliers responsible for designing and manufacturing building components like windows, doors, frames, decks, etc.



This map represents the circular ecosystem of the construction and building industry stakeholders and cascading biomass.

As a speculative view of the BEP's business ecosystem, the map shows possible business interactions between entities across the cascading system and building and construction sector as well as material, data, and capital flows enabled by the BEP services.

BioEnergyPool (BEP) is a sustainable biomaterial commerce platform. BEP mobilizes biowastes and facilitates sustainable trade by connecting the ecosystem's supply and demand and building and construction industry stakeholders.





PLANET

- Reduction of raw material consumption through prioritization of circular resources
- Keeping natural resources in the loop for longer
- Releasing economic pressure on virgin wood/ trees

PEOPLE

- Reliable, transparent, and comparable price of biowaste / biomass
- New ways of using wood and biomass

PROFIT

- Construction and building sector offer huge potential for sustainable improvement
- New materials source for an industry at risk of material shortages

The diagram consists of three concentric shapes. The outermost shape is a dark blue circle with the word 'PLANET' in white capital letters at the top. Inside this circle is a red hexagon with the word 'PEOPLE' in white capital letters at the top. Inside the red hexagon is a white triangle with the word 'PROFIT' in black capital letters at the top. The shapes are nested, with the triangle being the innermost, followed by the hexagon, and then the circle.



# INDEED

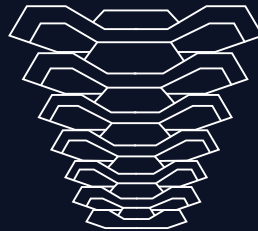
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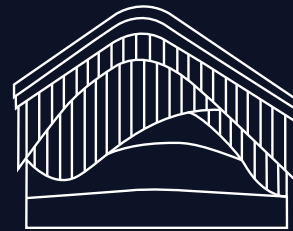
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