

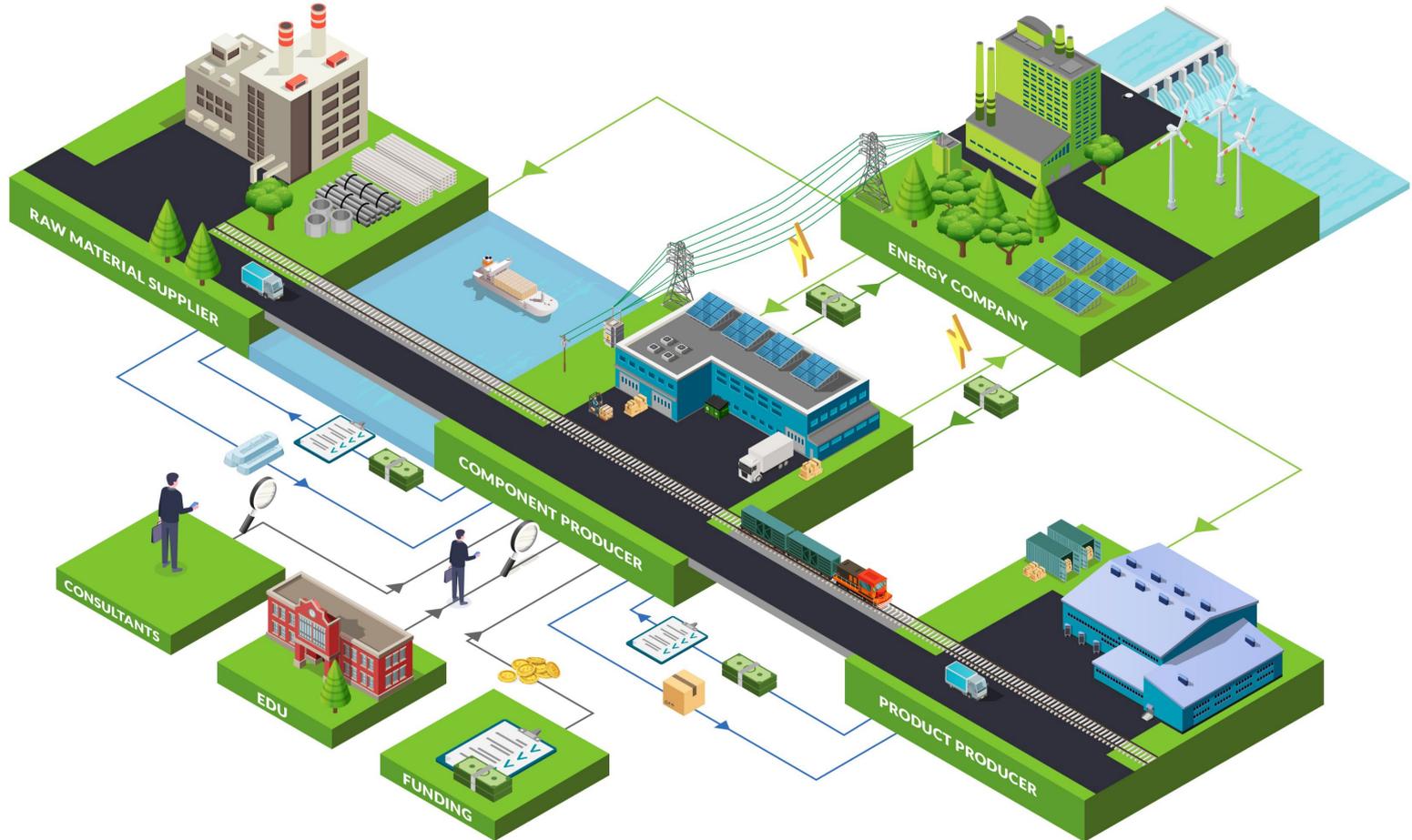


RESOURCE WISE VALUE CHAIN

Industrial supply chains benefit from coordinating actions for resource-wisdom. Energy intensive and big production companies create the biggest environmental impact. However, it creates more value to the end customers if sustainable actions cover the whole value chain.

FOCUS ON ENERGY EFFICIENCY

Energy issues are critical part of sustainable development and covers utilisation of renewable energies and optimising energy usage



DRIVERS

Legislation and political Green awareness, stakeholder preferences, reputation

RENEWABLE ENERGY

Turning to renewable energy in industrial companies, can be solved through **green energy contracts** with energy companies or **investing in own renewable energy production**.

SMES AS ENERGY PRODUCERS

Companies can take a stronger position in energy system as an **energy producer** renting their roof for solar energy production, selling extra energy or storing energy.

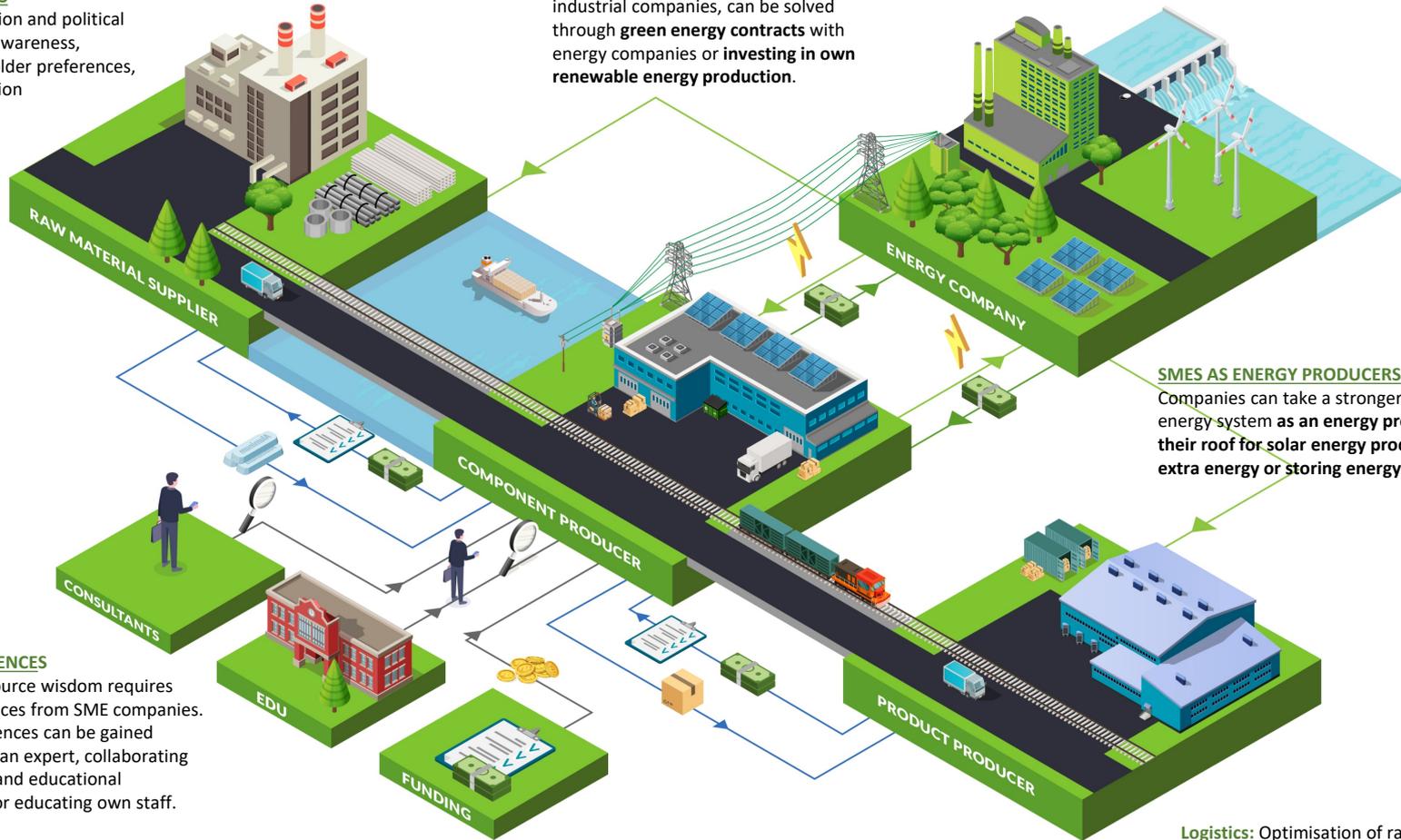
NEW COMPETENCES

Increasing resource wisdom requires new competences from SME companies. These competences can be gained through hiring an expert, collaborating with research and educational organisations or educating own staff.

PUBLIC FUNDING

Public funding is available for companies' **climate- and environment-friendly investments and investigations**.

Logistics: Optimisation of raw material, product and waste logistics concerns volumes, schedule, transportation mode, and route.



ENERGY EFFICIENCY

Optimisation of energy usage aims at energy and cost savings. **Investing in energy-efficient buildings and production systems** create value on the long term.

Saving energy can also be achieved through **retrofitting facilities and optimising processes** such as installing compressor, preventing leaks, and changing motors.

There is high interest and need for **sustainable energy storage systems** of which heated sand is one of the new innovations.

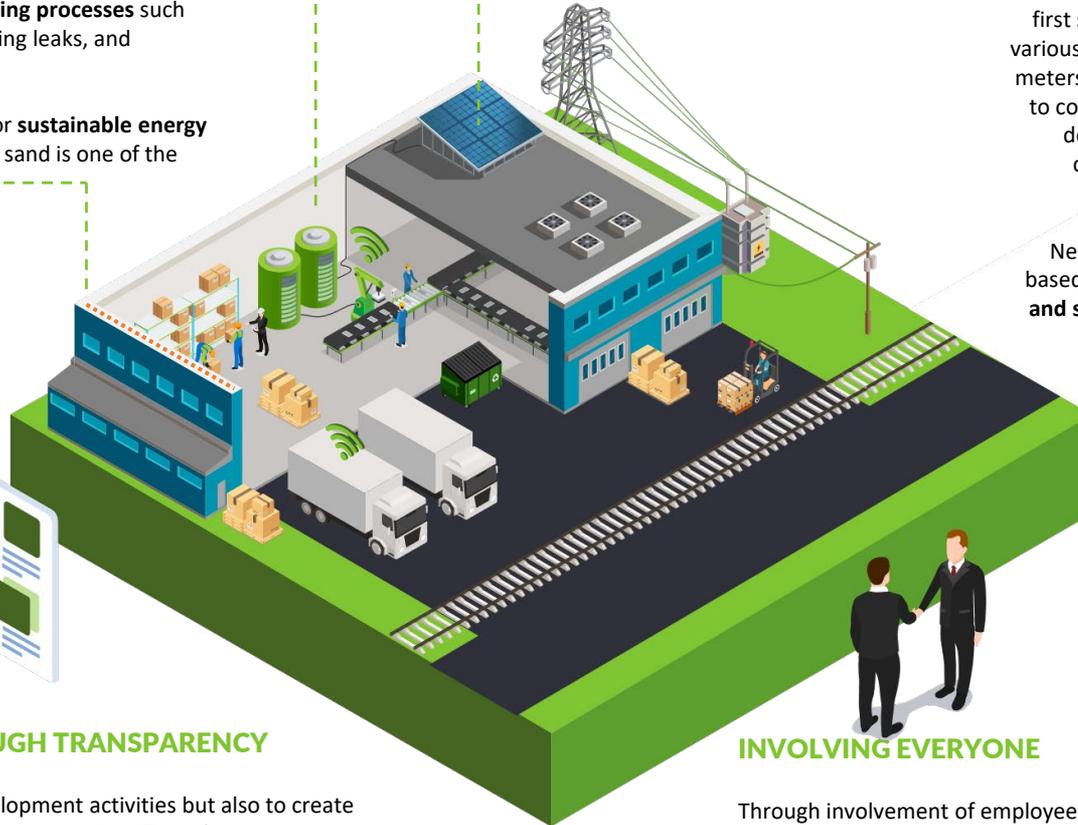
A company can invest in own renewable energy production e.g. through solar panels and batteries, heat pumps and geothermal heat.

The roof or other unused space can be rented for external parties, which create readiness for virtual power plants.

DATA BASED KNOWLEDGE

Understanding the energy consumption is the first step towards energy efficiency. These are various data based solutions ranging from smart meters used for recording energy consumption, to complete energy management software for detecting, analyzing and optimizing energy consumption and identifying potential for energy savings.

New **ICT skills** are needed because the data-based system requires **investment in software and sensors** to collect, store and analyze data.



COMPETITIVENESS THROUGH TRANSPARENCY

The data can be used for wise development activities but also to create transparency towards customers and authorities. Therefore, the data-based systems provide **new competitiveness for a company**. This also encourages knowledge sharing to create more sustainable product life cycle.

INVOLVING EVERYONE

Through involvement of employees, a company can create **meaningful work and job satisfaction, prouddness which influences also on customers**. This also encourages knowledge sharing to create more sustainable product life cycle.