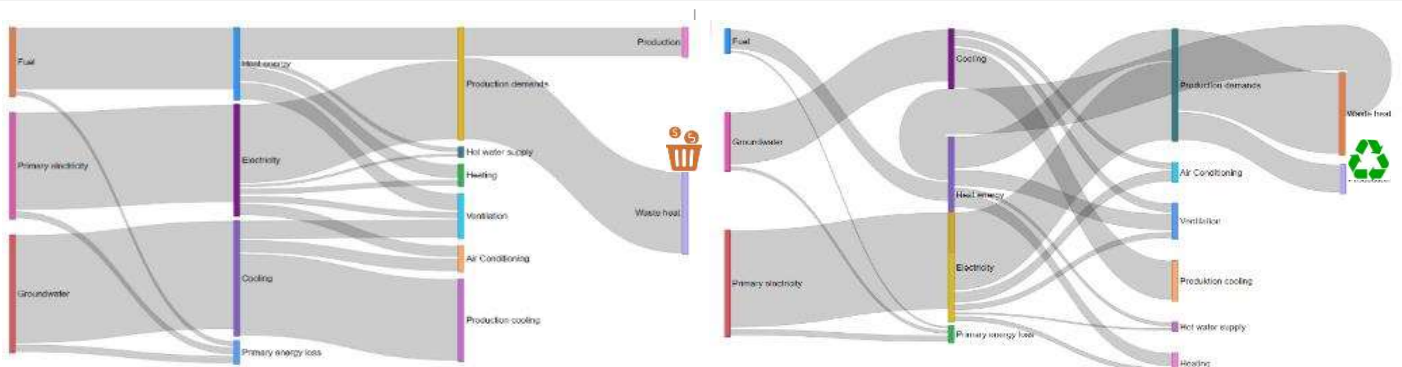


Energy Optimisation from Idea to Confirmed Result Reducing Emissions, Consumption and Costs

High energy prices, regulatory energy efficiency targets, like CSRD, and ESG reporting drive for energy optimisation initiatives. Energy optimisation has become a top priority for industrial companies, public and institutional building operators and commercial building owners. When implementing Energy optimisation, companies face the following challenges:

- **Older facilities** were designed and **built without energy optimisation goal in mind**
- **Lack of know-how and energy experts** for project design and implementation
- **Lack of compelling methods and mass technologies** to implement Energy optimisations

BPS NetZero, a solution by BPS Group, puts existing facilities on a clear path to achieving net-zero CO2 emissions. It helps companies reduce their carbon footprint and adopt sustainable practices. Using the **HiPerWare** platform, real-time energy generation, distribution, usage, storage, and losses through measured and presented vis dynamic **Business Energy Model (BEM)**. An example of project showing 32% cost savings through optimisation and energy reuse (BEM before/after below)



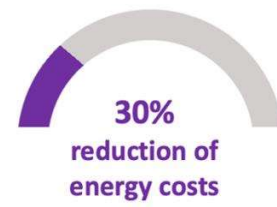
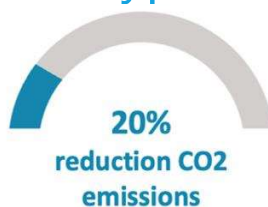
BEM before: Generation, Distribution, Use, Losses

BEM after: Generation **new**; Distribution **new**; Use + Reuse; Losses **new**; **+Transformation**; **+Storage**

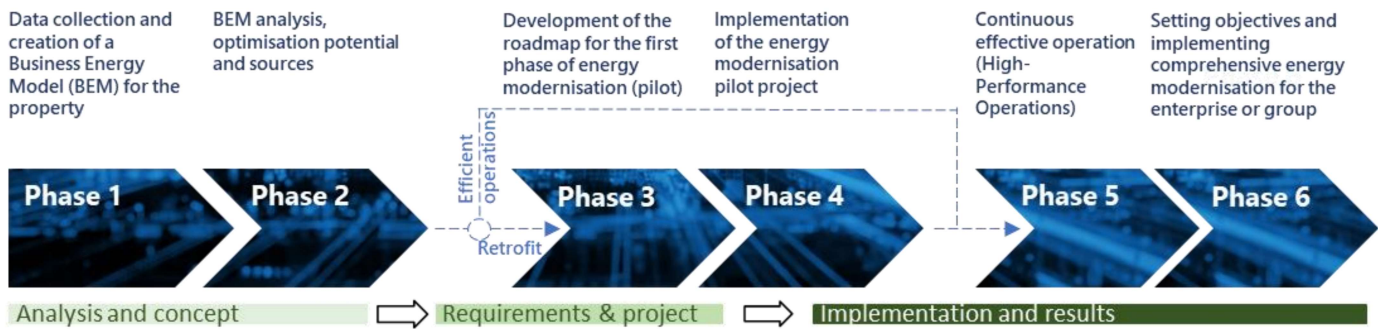
The Dynamic BEM audit identifies optimisation opportunities in the following key components of the facility's energy efficiency:

- **Thermal insulation of building envelope performance** (building thermal envelope). The facility should not exhibit any anomalies in energy retention (heat or cold).
- **Energy consumption on real demand** (seasons, weather, workdays, shifts, occupancy, etc.). Energy should be consumed dynamically, following the principle of "necessary and sufficient"
- **Elimination of energy waste**. Ensuring that maximum energy from internal sources is utilized efficiently.
- **Dynamic generation with maximum efficiency**. Heat or cold generation in optimal operational modes and favorable weather conditions (max COP / EER, etc.)..
- **Peak Shaving and Spot Energy Consumption**. Utilizing optimal equipment scheduling, use energy storage to smooth consumption peaks, capitalize on spot energy prices during low-cost periods.

Typical Energy Optimization Project Goals



Using **HiPerWare** based toolkit, an efficient 6 phases agile method was developed, ensuring fast results and long-term success in achieving your energy goals. Unlike traditional energy audits we provide additional benefits and savings through deep **real time processes analysis** before and after implementation, based on Big Data, comprehensive optimisation strategy development and complete project **lifecycle management** approach. After the analysis phase, subsequent actions are determined to move toward the goal of net-zero emissions. These actions include a choice between two options: technical operations optimisation or energy retrofit.



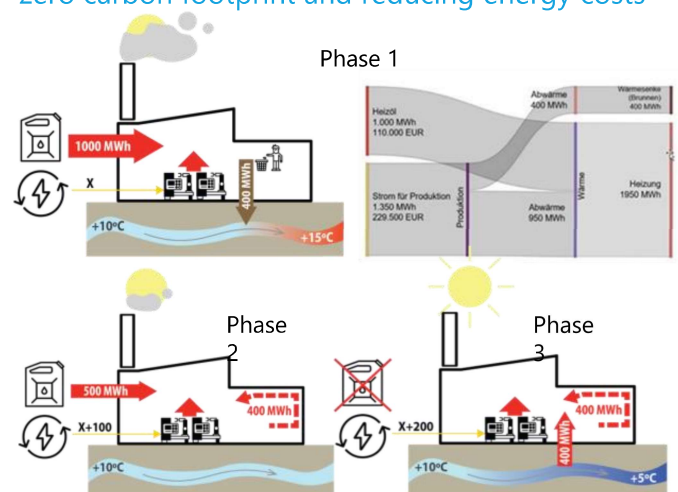
Typical Energy Optimization Project Deliverables

- **20-70% CO2 emission** reduction and then possible complete phase-out of fossil fuels
- **10-40% cost reduction:** energy reuse, optimisation of energy flows, reduction of energy losses
- Ensuring **effective operations after optimisation** throughout the life cycle of the facility
- Ensuring **compliance with ESG KPIs, CSRD, ESRS reporting**
- **Energy audit certificate** according DIN EN 12831/ VDI 2078/DIN V 18599 (optional)
- **Subsidies** from government support programmes, improving project ROI by up to 50%
- **Digital Energy Twin**

Case Study

Factory's HVAC systems were designed by building engineers, while production lines were handled by manufacturing specialists. The diesel boiler consumes 1,000 MWh annually, emitting 280 tons of CO₂, and 400 MWh of excess heat is wasted. HiPer NetZero Phase 1 created a detailed BEM. Phase 2 identified ways to cut waste and reduce energy costs with a short payback period. Phase 3 developed solutions to eliminate fossil fuel, reducing energy costs by threefold. **Energy cost reduction 65%, CO₂ emission reduction – 100%**

Large manufacturing company achieving a net-zero carbon footprint and reducing energy costs



Start your energy optimisation

Contact netzero@bpsint.de, +49 (0)89 350 63 988 to get the draft of your Energy Optimization Plan