

Application [by life cycle phase]

Design

- Analyse and forecast energy consumption
- Analyse user behaviour
- Finding optimum position and location for maximum energy generation
- Develop & build-in early traceability for carbon reporting and targets
- Designing and testing
- Training new operators
- Understand and reduce risk
- Optimise asset performance
- Process optimization
- Simulate scenarios across the value chain
- Visualise systems in operation
- Simulate physical asset behaviour under different operational conditions
- Problem solving against real life scenarios
- Analyse logistics

Build

- Extends BIM/3D/P&IDs
- Improve decision making in relation to a project's feasibility
- Improve decision making for procurement, energy and sustainability
- Uplift resource efficiency
- Optimised collaboration and knowledge-sharing

Operate [Strategic]

- Predictive asset maintenance
- Condition monitoring of assets
- Streamline Material Selection
- Optimising production planning and control
- Predicting maintenance issues and maintenance strategy development
- Assuring system work plans
- Identify process changes and plan appropriate response
- Optimise asset lifecycle, useful life, remaining life

Operate [Performance]

- Real-time monitoring of process equipment
- Remote troubleshooting of equipment
- Collaboration tool
- Remote surveillance
- Optimise inspection planning and associated safety requirements
- Instant feedback and problem-solving on system activity

Strategic and Operational Advantages

Strategic

- Quicker, lower-cost process
- Evidence-based decision making
- Save on resources
- Reduced capital expenditure
- Reduced operational expenditure
- Increased production
- Sustainable development
- Metaverse design & implementation for asset-intensive capital planning
- Better product quality, and consistency of quality
- Increase process efficiency
- Risk reduced in workplace
- Investigate behaviour of physical systems
- Reduce cost of design process
- Reduced errors in design

Operational

- Increased reliability of systems and equipment
- Reduced unplanned corrective downtime
- Reduced maintenance spend
- Better equipment utilisation
- Increase energy optimisation
- Improved asset reliability
- Improved safety
- Improved decision making
- Reduced testing time
- Smoothing interoperability between critical asset functions.
- Improved accessibility
- Promotes collaborative decision making
- Better understanding of systems
- Simplified communication
- Investigate behaviour of physical systems
- Reduce cost of design process
- Reduced errors in design
- Track changes more easily