DATASHEET

ABB Ability™ Knowledge Manager – Cement Production Scheduler

Plan and adjust cement production in a reliable and flexible manner to meet your business objectives

Link cement production planning to real-time data, events, energy tariffs, and various operational constraints - to evaluate their impact on your business priorities and costs. Quickly adapt to changes and make the right adjustments to achieve your goals while ensuring optimal use of resources, adherence to safety and environmental compliance.

Your challenge

Cement production consumes a huge amount of thermal and electrical energy and generates significant amounts of greenhouse gases, such as CO2. Managers must continuously take actions to increase equipment efficiency, reduce the use of traditional fuels and introduce more alternative raw materials. Immediate access to up-to-date information is essential to production planning and for better utilization of energy, equipment, inventories, and capacities. ABB Ability™ Knowledge Manager provides reliable online reports about a plant's conditions, such as product inventory, capacities of process equipment and availability.

To save energy, optimize stock and enhance equipment performance, plant and production managers must be able to respond with agility to correctly adjust production against constantly varying constraints and unexpected changes. The traditional approach of maintaining production schedules on error-prone spreadsheets, with poor coordination between different departments leads to ineffective decision-making due to the large number of data sources and parameters.

Planning teams need more advanced tools to help them capture specific production process know-how, maximize the reuse of available data, define goals and scheduling models to better evaluate the complex inter-relations between influencing factors, and compare multiple scenarios before deciding which one goes into action.

Our solution

The Cement Production Scheduler application – part of the ABB Ability™ Knowledge Manager software - helps planners incorporate many vari-ables and create optimal schedules that easily adapt to changing goals. It takes into account variables like restrictions in material transport and storage, planned and unexpected mainte-nance activities, complex energy tariff schemes, emission limits, equipment power start-up curves and many other. All goals, targets and constraints are taken into consideration, as well as the weight of specific targets that may vary over time.

Features

- Schedule visualizations: summary or detailed
- Inventory and energy consumption forecasts
- Goal setting and constraint configuration
- Scenario management
- Maintenance and repair data entry screens
- Sales forecast screen
- Energy tariff settings

Benefits

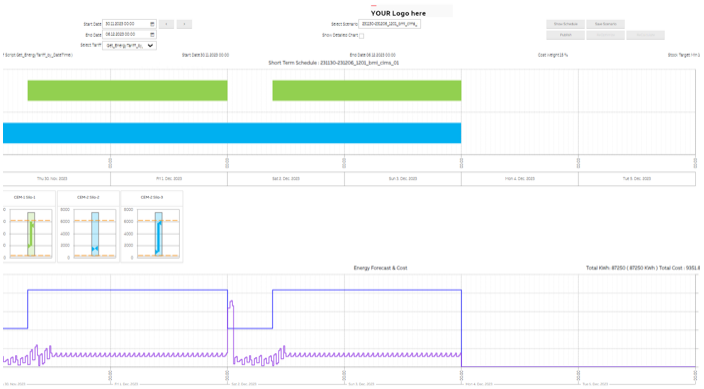
- Save time creating and adjusting short-term production schedules per mill and per product
- Meet business objectives around energy costs, emissions, inventory, equipment utilization.
- Build resilience to unexpected changes, quickly overcoming complex constraints
- Improve safety, compliance and people skills with consistent decision making criteria

How does Cement Production Scheduler work?

Modelling your operations

The Cement Production Scheduler application uses a model of your plant operations, production paths and costs based on what you produce, where it is produced, relations between equip-ment and the product, which raw materials are used and how, storage units and capacities, product transport paths. It collects information about contract prices, tariffs and limitations, own power generation, shift and staff related param-eters, maintenance plans and acquire real-time data from on-line sources.

You can define goals, adapt their weight over time, create weekly tem-plates for demands and drive down the cost of product changes.



Scheduling

Cement Production Scheduler provides the optimal schedule considering operation goals and constraints as well as energy tariffs. Calculating a new schedule requires the adjustment of im-portant parameters such as:

- Shipment demands
- Stock targets and start levels
- Energy tariffs
- Planned equipment maintenance
- Personnel availability
- Holidays
- Individual weight of production goal
- Production requirements at fixed time

The Scheduler screen shows the calculated schedule displayed in a summarized or a detailed view, both with the following three information sections:

- Short-term production schedule
- Inventory forecast
- Energy consumption forecast

Managing multiple scenarios

Cement Production Scheduler can increase the efficiency of your plant management significantly. Thanks to ready-made scenarios your production teams can assess “what-if” situations and their consequences before put-ting any tentative plan into action.

Your managers can create scenarios in advance, save them and promptly apply alternative schedules when deviations occur, requiring changes of the planned tasks. Saved sce-narios can be compared at any time based on their impact on various operational factors like forecasted inventories or energy costs.

Production planners can choose which scenario is officially published and it will automatically be converted into a list of actions for the operators. An audit trail of the published scenarios is kept for reference and displayed in the Publishing Log screen, including the name of the person responsible for sign off and the available comments.

The planned values of the published scenario are written to the Knowledge Manager infor-mation system, which allows to include planned values in any report or chart so that you can easily use them for the comparison of actual versus planned figures, for example.

Obtain solutions within minutes to keep your goals despite undesired events:

- Rescheduling due to an unexpected repair
  - One of your mills breaks down. The maintenance team evaluates the situ-ation and indicates the downtime will be of many hours. How can we make sure that we will have enough material in stock to fulfill all planned shipments?
- Rescheduling due to a delayed shipping
  - Your production is running smoothly, as planned. The transport company an-nounces a train will only be able to ar-rive a couple of days later than sched-uled. How can we optimize our plan with this new restriction?

Contact us **via the website** to get started.

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