Energy Decision Support System

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Co-funded by the seventh framework programme (FP7), under grant agreement no. 619132, within the Water Inno & Demo-1
Energy Decision Support System

- Web Based Solution that aggregates all information about energy (production and consumption) in a dam
  - HOW: Dashboards Views
  - OBJECTIVE: Help the dam manager to take decisions about energy management – namely production schedules

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Energy Decision Support System

Main Features:

- User management
- Device Management
- Variable variation chart visualization (Custom period of time)
- Schedule production
- Simulation environment
- Periodically imports measurements from SAID Sensors Network
User Management

- Users are able to list all users that have access to the Energy DSS.
- Admin users are able to view and edit other users’ information.

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Device Management

- Users can list all the devices of a dam registered in the solution
- Users can edit or remove a device

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Dam Output Flow

The current chart provides a complete view of the aggregated measures of Reservoir Volume and Dam Output flow.

A dual chart view is provided allowing to instantly view any correlations between the variations of both these variables.

User is able to define the period of time to analyze.

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Produced Energy

- The current chart provides a complete view of the aggregated measures of Reservoir Level and Produced Energy.
- A dual chart view is provided allowing to instantly view any correlations between the variations of both these variables.
- User is able to define the period of time to analyze.

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The current chart provides a complete view of the aggregated measures of the expected generated price and energy price variation.

A dual chart view is provided allowing to instantly view if the production was well aligned with energy price variations.

User is able to define the period of time to analyze.
Production Schedule

Given the production target and the reservoir current volume, Energy DSS is able to schedule productions for the next week in order to meet the production target using the most valuable energy price hourly slots.

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Production Schedule

The production schedule report provides:

- Schedule production proposal by day/hour
- Reservoir Volume vs Produced Energy variation
- Estimated Profit vs Energy Price Forecast variation

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Current option allows user to define period of time, sensor and the sensor’s variable to visualize. All sensors (of the selected dam) and correspondent variables currently registered on the Energy DSS are able to be visualized.
Simulation

Energy DSS allows to create a simulation environment and analyze possible outcomes of this environment.
Currently the solution allows the user to provide the historic values of energy prices (these values can either be real or hypothetical), the initial reservoir volume and a production target for the next week.
Simulation

The simulation report provides:

- Schedule production proposal by day/hour
- Reservoir Volume vs Produced Energy variation
- Estimated Profit vs Energy Price Forecast variation
Thank you for your attention

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