



Energy Management

Integrated Energy Management System

CSPGCL



**NS Envision - Online
Energy Management Solutions**

Introduction of the project

Indian Power Scenario was characterized by low frequency due to continuous power deficit most of the time. As the country moved towards being a power surplus, reforms were introduced to manage grid discipline and fair pricing. ABT Mechanism a frequency-based pricing mechanism for unscheduled electric power transactions was adopted in the year 2002. As the coordinating agency of SEBs, the Load Dispatch Centre became the apex body to ensure the integrated operation of the power system by coordinating generation and transmission to ensure a mechanism for safe and secure grid operation, monitoring, and levying penalties and rewards.

Calculations of ABT are complex needing real-time parameters of power generation. Implementation of ABT demanded a complete solution to monitor changes in Schedule, Grid frequency, and other dynamic plant operational parameters. The computation of DSM is based on real-time data on deviation from the power generation schedule

Challenges

The lack of Advanced integrated systems and monitoring systems is estimated of:

- Load forecasting
- Unscheduled deviation from the power generation schedule for penalty estimation under DSM
- Real-time changes in Schedule, Grid frequency, and other plant parameters like Bus balance, losses, etc
- Calculation of ABT using real-time ABT meter output
- Visualization of parameters to enable operators to take quick action



Solutions

NS Envision- An online energy management Solution designed specifically to address the current challenges of Power Generation stations, load dispatch centers (LDC), and generic ABT Systems was proposed. Online Energy Management & Monitoring Solution's key offering are.

- Dynamically balance real-time energy dispatched and schedule of power generating stations.
- Use AI Capability for precise load forecasting
- Real-Time Monitoring of Generation parameters such as reactive power Auxiliary consumption, Energy losses, JMR, etc.
- Integrate dashboards for real-time ABT calculations parameters and key guidelines to manage Ex-Bus generation as per DSM regulations.
- Generate multiple reports as per the Central and State ABT regulations under the DSM mechanism.
- Share automatic detailed ABT Reports by email.
- Sends notifications and alerts in case of anomalies which incur huge penalties for quick response.

Benefits

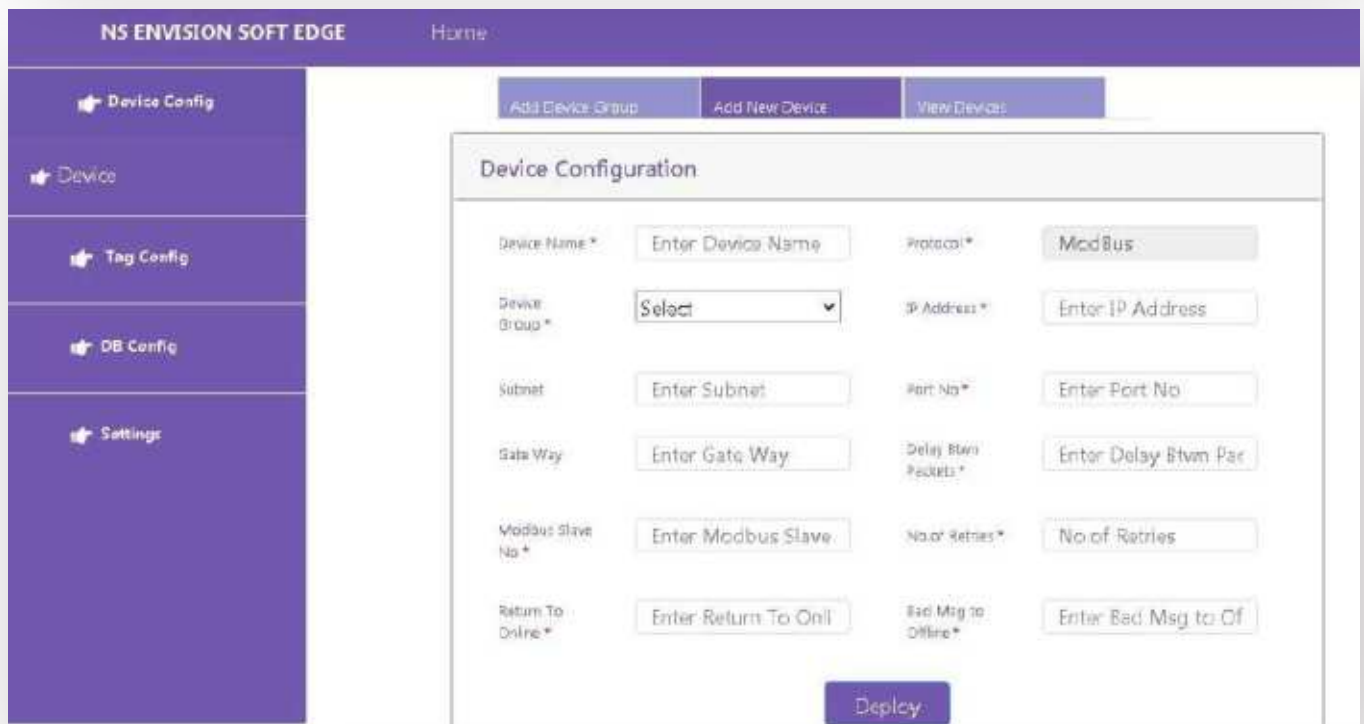
- Enables participants to avoid deviation penalties.
- Local sub-station and central control centre online monitoring through dashboards
- Facilitate verifying deviation bill charges
- Integrates main, check and standby meters
- Facility to update UI rules.

Stories

Before implementing the **NS Envision™** ABT Online Energy Management System, manual ABT calculations and reports required lots of effort. By bringing in **NS Envision™** ABT Online Energy Management System, we were able to create customized visualization of real-time Monitoring data, Instantaneous data, Day Data, Block Data, etc., automated reports, eliminating huge time spend on the reports.



Dashboard Overview



NS ENVISION SOFT EDGE Home

Device Config Device Tag Config DB Config Settings

Add Tag Group Add New Tag View Tags

Tag Configuration

Tag Name*	<input type="text" value="Enter Tag Name"/>	Data Type*	<input type="text" value="Select"/>
Group Name*	<input type="text" value="Select"/>	Device Name*	<input type="text" value="Select"/>
Table Name	<input type="text"/>	Address*	<input type="text" value="Enter Address"/>
Unit*	<input type="text" value="Enter Unit"/>	Quality	<input type="text"/>
Scan Time*	<input type="text"/>	Read/Write*	<input type="text" value="Select"/>
In Alarm	<input type="text" value="No"/>	Log as Event	<input type="text" value="No"/>

Add clear

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Device Config Device Tag Config DB Config Settings

Add Tag Group Add New Tag View Tags

Tag Group Configuration

Tag Group Name*	<input type="text" value="Tag Group Name"/>
Table Name*	<input type="text" value="Select"/>
Scan Time*	<input type="text" value="Scan Ti"/> <input type="text" value="Sec"/>
Choose Start Time*	<input type="text" value="2359"/>

Add



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