Digital Energy

Settlements for Market Operators

SETTLEMENTS IS DEVELOPED BY THE WORLD'S LEADER OF ENERGY AND ELECTRICITY MARKET SYSTEMS

GE is a major player in the industry who offers a full solution from market-to-meter for the new digital grid. Energy markets and transmission systems are intricate entities with multiple products, customized business rules, and real-time delivery and operational needs.

BUSINESS CHALLENGES

Coordination
Safety
Reliability

Participants enter business critical market transactions or transmission contracts, and then rely on a settlement system to finalize the charges, credits, costs and fees associated with their financial transactions.

GE's Settlements is the solution you need to perform this objective effectively, efficiently, and with high accuracy for one or multiple markets. When using Settlements, you can rest assured that all the results are auditable and can be easily traced back step-by-step to their point of origin.

Settlements meets and anticipates the requirements of the ever-evolving energy markets or regulated activities, encompassing not only traditional products for multiple markets but also smart grid programs, such as demand response.

Customer Benefits

By leveraging the company's 20 years of energy markets experience and over 30 years in development of energy systems and markets software, GE has developed this field-proven settlements platform offering you:

- **A lower cost option to operate and support** your settlement solution that is user configurable and employs standards-based technology.

- **Highly adaptable solutions** that can be easily modified to meet any regulatory or market rules revisions for multiple products **without software changes.**

- **A flexible solution t**hat can manage multiple products in multiple markets or regulated environments simultaneously and be configured and automated to **match your business process.**

- **An intuitive user interface** that includes a graphical representation of the settlements equations and straightforward ways to get your data into familiar tools such as Microsoft Excel™.

- **Automatically generated documents** for settlements equations.

- **Easy comparisons of settlements statements** using graphical representations that identifies differences at a glance.

- **Easy submission of disputed charges.**

- **Fast computation cycles** to help you produce your settlements statements as soon as possible and support quick decisions making.

- **One central solution** that reduces the overhead and maintenance costs associated with storing data in multiple locations.

- **A high-performance, scalable, and open system** that can easily be integrated with other components of your IT system.

CUSTOMER PROFILE

- Market Participants
- Market Operators

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An advanced and task oriented user interface

The latest generation of Settlements uses powerful tools and visualization for analyzing data and operating the system, such as:

- Configurable and customizable dashboard
- Role-based user's "To Do" list
- Advanced drill-down analysis of the results
- Graphical representation of differences between settlements statements
- Graphical representation and editing capability of the settlements calculations' dependencies
- Interactive business process monitoring, control, and Auditing
- Text-based modeling for fast model editing.

A flexible configuration-based advanced calculation engine

Frequent updates of market rules by regulators are a fact of life. Settlements allows you to manage these changes in a seamless and timely manner. These changes are simply configured without software modifications by using the rule based calculation engine. Moreover, you have the possibility to link to your formulation equation the applicable section within the market protocols.

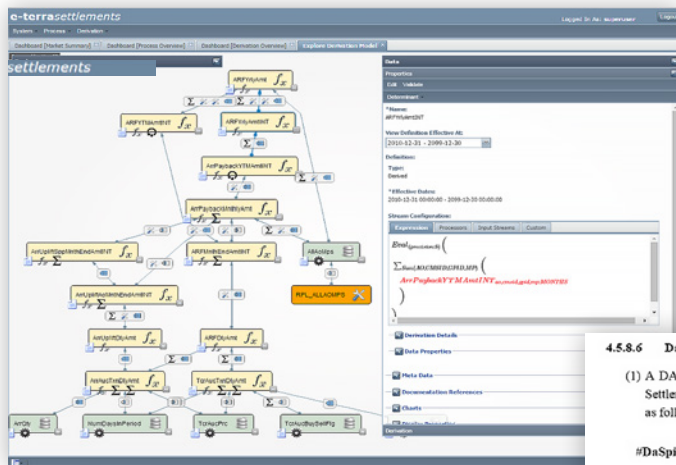Figure 1: *Graphical audit track of data and value*

Figure 2:
Intuitive graphical view providing formulation understanding at a glance with direct link to market protocols

4.5.8.6 Day-Ahead Spinning Reserve Amount

(1) A DA Market credit or charge[4] for cleared Spinning Reserve will be calculated at each Settlement Location for each Asset Owner for each hour. The amount will be calculated as follows:

$$\#DaSpinHrlyAmt_{o,s,h} = \sum_z (DaSpinMcpHrlyPrc_{z,h} * DaSpinHrlyQty_{o,z,s,h}) *(-1)$$

(2) For each Asset Owner, a daily amount is calculated at each Settlement Location. The daily amount is calculated as follows:

$$DaSpinDlyAmt_{o,s,d} = \sum_h DaSpinHrlyAmt_{o,s,h}$$

(3) For each Asset Owner associated with Market Participant *m*, a daily amount is calculated. The amount is calculated as follows:

$$DaSpinAoAmt_{o,m,d} = \sum_s DaSpinDlyAmt_{o,s,d}$$

(4) For each Market Participant, a daily amount is calculated representing the sum of Asset Owner amounts associated with that Market Participant. The daily amount is calculated

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A high performance settlements solution

Settlements leverages many years of experience in operating and settling energy markets around the world. Thus, our high-performance calculator is capable of handling large-scale, complex data and market rules for multiple markets and products simultaneously. This allows you to also run pre-settlements calculations without waiting for your market operator statement publication.

An open architecture with numerous integration points

Settlements uses a business process modeling and orchestration framework that allows the system to adapt to your real-world processes and not the other way around. Settlements also seamlessly integrates into your Enterprise IT through an open architecture with numerous points of integration:

• Established, well-documented open source frameworks enable you to easily integrate with third-party software
• Public APIs and message queues for external system Integration
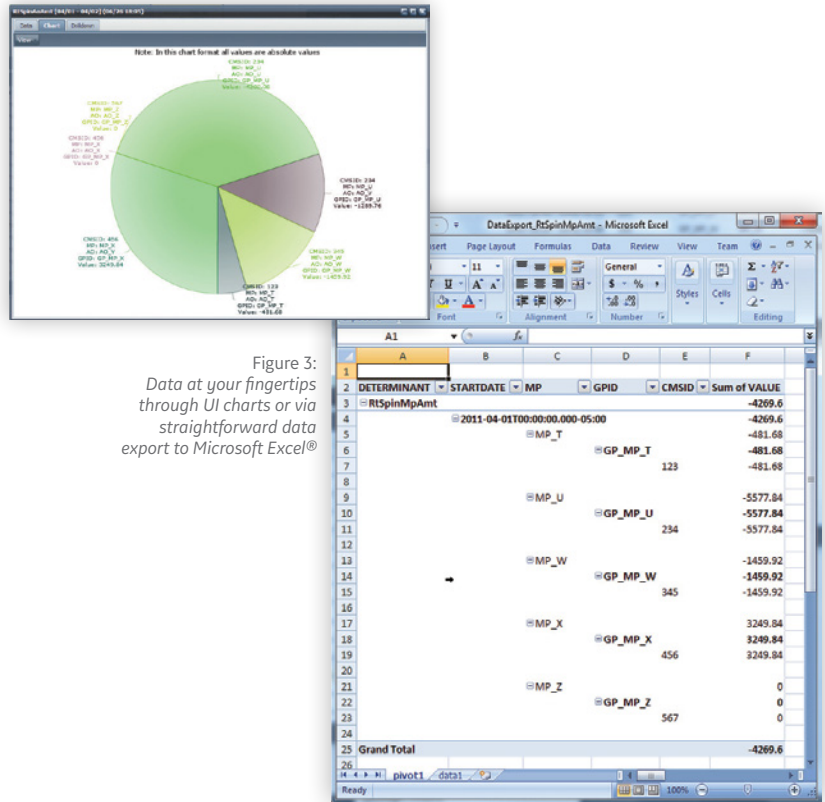
Figure 3:
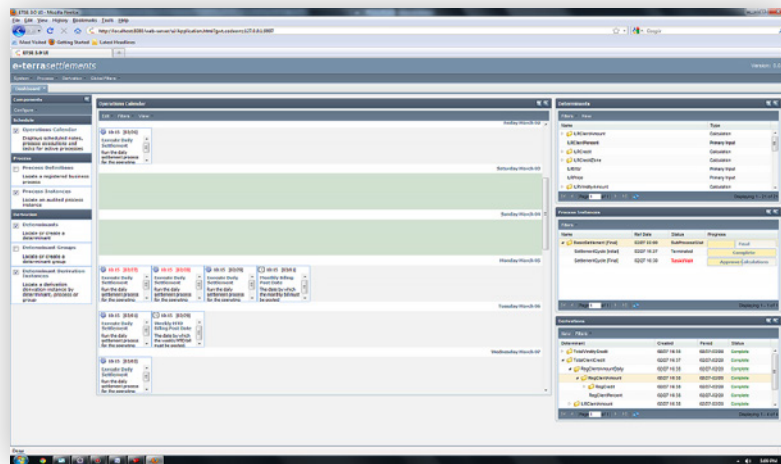*Data at your fingertips through UI charts or via straightforward data export to Microsoft Excel®*

Figure 4:
Settlements Dashboard

Contact Us
ge.com/digital/sales-contact-me