

OpenECA

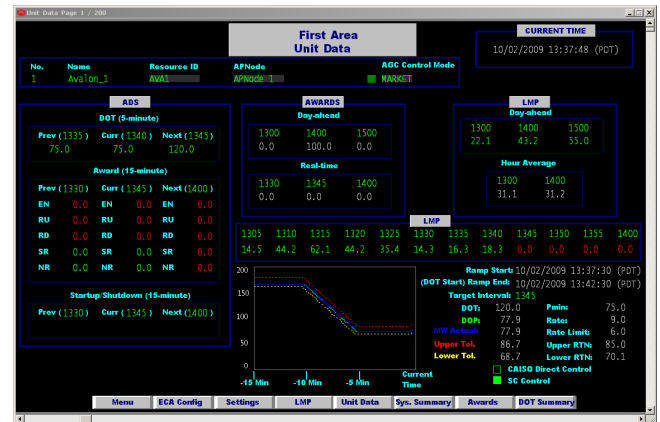
Energy Market Control Algorithm

The ability for control areas, transmission providers and scheduling entities to interface with a centralized energy trading market has become a significant challenge in the electrical system operational environment of today. In all market groups, the ability to interface in real-time through XML and ICCP protocols is mandatory for participation. Further complicating matters, the diverse data required for effective communications, deployment implementation and after-the-fact settlement can reside on separate systems (real-time data, planning schedules and financial information).

OSI's **OpenECA™** (Energy Market Control Algorithm) reads deployment instructions received from Energy Markets and automatically implements them within OSI's **OpenAGC™** (Automatic Generation Control and Dispatch) product. **OpenECA** eliminates the need for manual review of instructions by operators, offering a more reliable and efficient means of data interfacing, as opposed to the more error prone process of manual calculation and entry. In an override mode, **OpenECA** supports operator intervention with manual override and adjustment of the received market data.

Deployment instructions from Energy Markets are normally delivered through XML and ICCP communications. XML instructions are parsed and archived within an RDBMS by a Market Operations System, such as OSI's **OpenMOS** product. **OpenECA** actively queries these instructions to determine the near-term deployments and creates equivalent instructions for direct delivery to **OpenAGC**. ICCP instructions are accessed from SCADA points and are available for immediate use within **OpenECA** and **OpenAGC**. Supported RDBMS's by **OpenECA** include Oracle, MS SQL and MySQL.

As required by the specific markets, **OpenECA** is also responsible for sending real-time signals back to the Market via ICCP. In addition to interpreting deployments for delivery to **OpenAGC**, **OpenECA** applies market rules associated with data receipt and confirmation, as well as calculated indicators, for return to the Market.



Unit	Resource ID	Ramp	Amount Offset	0230	0230	0235						
No.	Name	MW Actual	Effective Rate	Final	High	Low	Final	High	Low	Final	High	Low
1	Avalon_1	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Avalon_2	100.0	1.0	200.0	200.0	900.0	100.0	240.0	900.0	100.0	100.0	900.0
3	Avalon_3	150.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Avalon_4	150.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Avalon_5	130.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

OpenECA supports all major energy markets including MISO, SPP, ERCOT, CAISO and IESO. **OpenECA** is also capable of supporting multiple markets simultaneously, as well as multiple participants within the same market.

Other industry solutions may not separate their AGC and ECA products to handle market functionality, therefore creating a tightly coupled solution that lacks the ability to easily evolve and change along with market rules. OSI believes that it is beneficial to have AGC specialize in controlling generators (load frequency control and economic dispatch) and have ECA specialize in any market-specific functionality, providing a more dynamic platform for implementing market rule changes.

Product specifications in this document are subject to change without notice.