

OASIS II Staged Implementation

The ESC provided the NAESB WEQ with an OASIS II Use Case Specification to serve as a starting point for further elaboration and actual implementation of OASIS II. Due to the large scope of implementing OASIS II, it is suggested that OASIS II implementation be staged over time. The following descriptions provide guidance as to what functionality should be considered as part of each of three major stages of development. The Joint OASIS II Implementation Task Force will ultimately determine how OASIS II will be implemented and deployed to the Industry.

In the discussions that follow, certain Use Cases that were designated as “out of scope” for OASIS II are referenced in italics. They are included in each appropriate stage to insure that the associated processes and activities within these Use Cases are recognized and reviewed with regard to their interaction/impact on any “in scope” Use Cases. Also note that some Use Cases appear in multiple stages to reflect the successive addition of functionality necessary to support that particular stage of functionality.

Within each stage, the Use Cases to be implemented are grouped by their ESC assigned categories:

- Registration
- Operations
- Transmission Rights Market
- Energy Markets
- Bilateral and Self Schedules
- Coordination

Appendix A contains the OASIS II Use Case Specification’s Use Case Survey section for reference.

Stage 1

OASIS II Stage 1 specifically addresses the upgrading of current OASIS functionality to use the OASIS II technologies and interface standards, the incorporation of financial transmission rights market interfaces, and the integration of electronic scheduling for bilateral schedules involving two or more Market Operators and/or Transmission Service Providers.

- Registration
 - *Request User Credentials*
 - Login – provide OASIS II standard user login process
 - Submit Subscription – develop to the extent to support current OASIS dynamic notification functionality

- Modify Subscription– develop to the extent to support current OASIS dynamic notification functionality
- Notify Subscribers– develop to the extent to support current OASIS dynamic notification functionality
- *Post Market Services – develop to the extent of making publicly available information on services (e.g., transmission and ancillary products, etc.), facilities (e.g., flowgate names, etc.), and resources (e.g., PORs, PODs, etc.) available through OASIS II interface*
- View Registration – provide view to all pertinent information related to conduct of transmission markets or electronic scheduling (i.e., “list” template functionality in existing OASIS)
- Operations
 - *Determine Schedules – develop to the extent that can support electronic scheduling of bilateral schedules with all operational entities*
 - Post Schedule – develop to the extent that support real-time posting of bilateral schedules
 - Post Reliability Directive – develop to the extent that support current OASIS functionality to post TLRs, etc.
 - Post Operations Data – develop to the extent that support current OASIS functionality to post outages, schedules, curtailments, etc.
 - View Operations Data – develop to the extent that support all current operations type data currently made available on OASIS
- Transmission Rights Market
 - *Assess Transfer Capability*
 - *Create TR Allocation*
 - Post TR Auction Announcement
 - Submit TR Auction Offer
 - Modify TR Auction Offer
 - Submit TR Auction Bid
 - Modify TR Auction Bid
 - *Clear TR Auction*
 - Set TR Auction Bid/Offer State
 - Submit TR Proposal
 - Modify TR Proposal
 - Submit TR Deal
 - Modify TR Deal

- Set TR Deal State
- Post Transmission Rights
- Post Transfer Capability
- View TR Market
- *Monitor Market Compliance – develop to the extent that support the ability to monitor transmission market activities and comparable treatment of all transmission rights under OATT*
- Bilateral and Self Schedules
 - Submit Bilateral Schedule
 - Modify Bilateral Schedule
 - Adjust Bilateral Schedule
 - Set Bilateral Schedule State
 - Distribute Schedule
 - View Bilateral & Self Schedules – develop to the extent that can view bilateral schedules
- Coordination
 - Coordinate Interchange – develop to the extent that can support electronic scheduling of bilateral schedules between two or more market/operational entities

Stage 2

Stage 2 of OASIS II implementation incorporates a standard interface to SMD-like Energy Markets, including the electronic scheduling of self schedules and processing of internal financial bilateral contracts. This stage will require enhancements/extensions to several Use Cases implemented in Stage 1.

- Registration
 - Submit Subscription – extended to support dynamic notification of market clearing activities
 - Modify Subscription– extended to support dynamic notification of market clearing activities
 - Notify Subscribers– extended to support dynamic notification of market clearing activities
 - *Post Market Services – extended to support posting of energy market related service information, pricing nodes, generation and load facilities and resources, etc.*

- View Registration – extended to provide view to all pertinent information related to conduct of energy markets
- Operations
 - *Create System Load Forecast*
 - *Create Unit Commitment*
 - *Determine Schedules – extended to include determination of bid-based generation and load schedules*
 - Post Schedule – extended to include information of bid-based generation and load schedules as cleared in the energy markets
 - *Dispatch Generation*
 - *Follow Dispatch Orders*
 - *Declare Abnormal Condition*
 - Post Reliability Directive – extended to support energy market directives
 - Post Operations Data – extended to include posting of energy market operations data
 - View Operations Data – extended to provide view of all posted operations data
- Energy Markets
 - Submit Energy Market Offer
 - Modify Energy Market Offer
 - Submit Energy Market Bid
 - Modify Energy Market Bid
 - *Clear DAM*
 - *Clear RTM*
 - *Assess Resource Adequacy*
 - Post Market Results
 - View Energy Market Results
 - *Monitor Market Compliance*
 - *Invoke Market Mitigation Measures*
 - Post Market Mitigation Invocation
- Bilateral and Self Schedules
 - Submit Self Schedule
 - Modify Self Schedule
 - Adjust Self Schedule

- Set Self Schedule State
- Submit Bilateral Contract
- Modify Bilateral Contract
- Set Bilateral Contract State
- View Bilateral & Self Schedules – extended to provide view of all bilateral and self schedules, and financial bilateral contracts

Stage 3

The final stage of OASIS II implementation addresses all functionality that has not been incorporated into the previous stages. The OASIS II Joint Implementation Task Force will determine the priority and the Industry's need for standardization of many of these informational interfaces.

- Registration
 - Submit Participant Registration – support online registration of market participants
 - Modify Participant Registration
 - Set Participant Registration State
 - Submit User Registration – support online registration of users
 - Modify User Registration
 - Set User Registration State
 - Submit Facility Registration – support online registration of physical facilities (e.g., lines, generators, etc.) and their characteristics (e.g., limits, ratings, etc.)
 - Modify Facility Registration
 - Set Facility Registration State
 - Submit Resource Registration – support online registration of market resources
 - Modify Resource Registration
 - Set Resource Registration State
 - Submit Subscription – extended to implement a robust publish-subscribe capability
 - Modify Subscription - extended to implement a robust publish-subscribe capability
 - Notify Subscribers - extended to implement a robust publish-subscribe capability

- View Registration – extended to provide view to all registration information
- Operations
 - Submit Outage
 - Modify Outage
 - Set Outage State
 - Submit Load Forecast
 - Modify Load Forecast
 - Set Load Forecast State
 - Post Operations Data – extended to support posting of any newly required operations data
 - View Operations Data – extended to provide view to all operations data
- Coordination
 - *Coordinate Markets*
 - *Coordinate Reliability*

Appendix A

The following is an excerpt from the ESC's OASIS II Use Case Specification. This Use Case survey information provides an overview description of the scope of processes and activities performed in association with each Use Case.

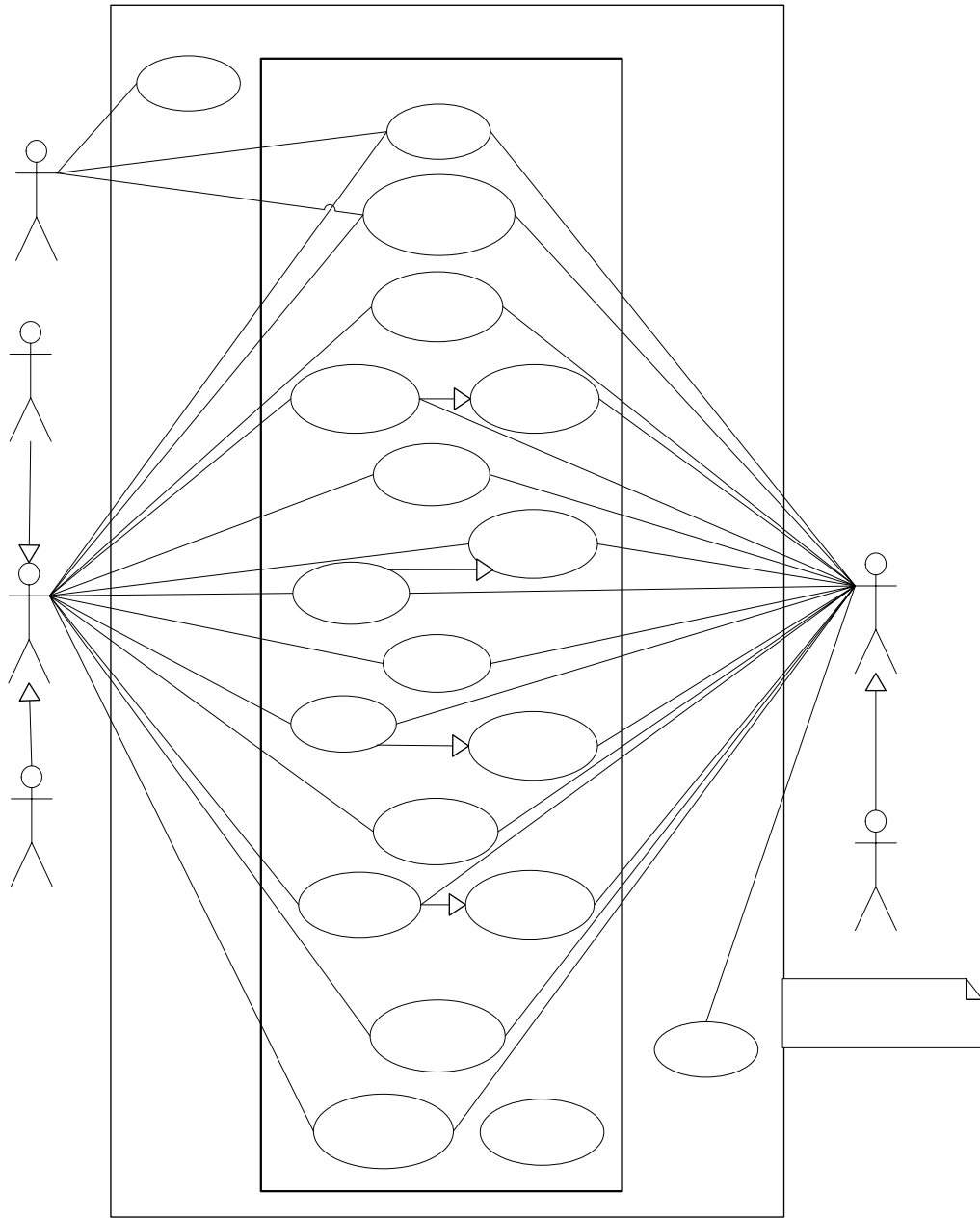
3 Use-Case Model Survey

The following subsections provide a brief overview of the Use Cases developed for each of the major categories of functions required for OASIS II.

3.1 *Registration*

The Registration Use Cases document the activities and processes required of Market Participants and Market Operators to define the base information associated with the market. This type of registration is market specific and should not be confused with NERC registration, which supports industry-wide data for North America. However, market registration procedures may be coordinated and integrated with the NERC registration process where applicable.

Market Participants are required to register their Companies, and identify each of the Company's employees and/or agents that will be users of the Market Systems. Market Participants, including Generation and Transmission Owners, must register and maintain facility names, ratings, and other parameters associated with physical assets within the scope of the Market Operator or Transmission Service Provider. Market Participants must also register information associated with the Generation, Load, and Transmission Resources. These resources are the "commercial" representation of physical assets which may be bid into markets or from/over which services may be procured. The Market Operator performs an oversight and approval function to ensure the appropriateness and accuracy of all information supplied. In all cases, the Market Operator and/or Transmission Service Provider may act on behalf of any Market Participant to register any information necessary for the conduct of their markets.



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Use Case 1.1 Request User Credentials

Prior to attempting access to any OASIS service or information, other than that information required to be made available to any individual for any reason, users (or programmatic interfaces) must obtain user authentication credentials in the form of x.509 V3 certificates as specified in the Energy Market Access and Reliability Certificate (e-MARC) policy. Possession of user credentials verifies that the identity and their need for access to OASIS have been certified by an Authorized Certification Authority.

User credentials are presented to the OASIS system as part of the mutual authentication process documented in the Login Use Case. Requesting user credentials does not confer any access rights to any OASIS system or information other than that required to be provided to electric energy industry professionals with a legitimate "need to know", i.e., the Public actor in these Use Cases. User access rights are managed through the Submit or Modify User Registration Use Cases.

This Use Case is out of the scope of OASIS II and is handled through e-MARC compliant processes and procedures established by the Authorized Certification Authority the user chooses to register with.

Use Case 1.2 Login

All users of the OASIS system, including programmatic interfaces, must execute the Login process to gain access to any of the systems implementing the business Use Cases specified for OASIS. Users must electronically present valid credentials which will be used by the OASIS systems to authenticate the identity of the user and establish the access controls which authorize or limit the user's access to information and ability to execute certain functions.

Use Case 1.3 Submit Participant Registration

Market Participants, or Market Operators acting on their behalf, submit registration information such as company name, address, contact information, proof of creditworthiness, etc., as an application to become a recognized participant in the market.

Use Case 1.4 Modify Participant Registration

Market Participants and Market Operators may make selective modification of existing participant registration information (e.g., credit credentials, etc.). MOs may also make changes to a registrant's information (e.g., credit watch,

activation/deactivation dates) based on actions taken in administration of the market.

Use Case 1.5 Set Participant Registration State

Market Operators may accept or deny applications or modifications to Market Participant's registration request.

Use Case 1.6 Submit User Registration

Market Participants, or Market Operators acting on their behalf, submit user registration information such as user name, contact information, roles to assume, etc., to become a recognized user in the market. A user must be mapped to a single registered Market Participant. A user may be an automated electronic application/interface that acts on behalf of the Market Participant.

Use Case 1.7 Modify User Registration

Market Participants and Market Operators may make selective modification of existing user registration information (e.g., security credentials, authorized roles etc.). MOs may also make changes to a user's information (e.g., activation/deactivation dates) based on actions taken in administration of the market.

Deactivation of a User registration is considered a permanent change to the User and will require a new User registration request to be initiated to reinstate the User. A temporary "suspension" of the User may be supported by the removal of all access rights associated with that User. This suspension may be lifted by modifying the User registration to reinstate the appropriate access rights.

Use Case 1.8 Set User Registration State

Market Operators, or suitable authorized Market Participant Users may accept or deny an application or modification to a User registration.

Use Case 1.9 Submit Facility Registration

Market Participants, or Market Operators acting on their behalf, submit facility information associated with physical generation, transmission, or metering facilities such as facility name, ratings, ownership, etc., as an application to become a registered facility. Facilities may be mapped to multiple participants designating joint ownership but must be mapped to a single participant designated

as the facility operator. The facility operator is the entity responsible for physical operation of the facility from the Market Operator's perspective.

Use Case 1.10 Modify Facility Registration

Market Participants and Market Operators may make selective modification of existing facility registration information (e.g., emergency limits, etc.).

Use Case 1.11 Set Facility Registration State

Market Operators may accept or deny an application or modification to a Facility registration.

Use Case 1.12 Submit Resource Registration

Market Participants, or Market Operators acting on their behalf, submit registration information associated with the following classes of "resources":

- Generation
- Load
- Transmission
- Pricing

Generation or Load Resource registration would include such information as resource name, operating limits, ownership, etc., in the application to become a recognized resource that may be offered/bid into the market. Generation or Load Resources must be mapped to one or more registered physical Facilities, i.e., a generating plant with 4 units (4 facilities) could be offered and operated in the market as a single resource. Conversely, a single Facility may map to multiple Resources, e.g., in the case of jointly owned facilities. Each Resource must be mapped to a single participant authorized to offer/bid the resource. Market participants may request the Market Operator to aggregate generation or load resources into appropriately weighted pricing zones or hubs. The registrant may supply information in connection with a generation or load resource to be used as default offer/bid information if that information is not explicitly established in submitted offers/bids (e.g., startup cost, no load cost, minimum run time, etc.).

Transmission Resources must be registered by Transmission Owners or the Transmission Service Provider. Transmission resources represent the commercial delivery and receipt points, transmission paths, and/or flowgates over which physical or financial transmission rights may be procured.

Pricing Resources must be registered by Market Operators. These represent the nodes, zones, hubs or interfaces used to establish energy and ancillary service

pricing in LMP-based markets. Market rules may allow Market Participants to register their own pricing resources as aggregations of elemental pricing nodes.

Use Case 1.13 Modify Resource Registration

Market Participants and Market Operators may make selective modification of existing resource registration information (e.g., startup cost, etc.).

Use Case 1.14 Set Resource Registration State

Transmission Service Providers and/or Market Operators may accept or deny an application or modification to a Resource registration.

Use Case 1.15 Submit Subscription

Market Participants and Market Operators may subscribe to various OASIS data elements (e.g., Transmission Rights Deals, Energy Market clearing results, etc.) and be notified on the addition of new information or modification of existing information associated with those data elements. The subscriber must identify the particular OASIS information to which they are subscribing and provide information to OASIS that identifies the electronic means to be used to notify the subscriber of any new or modified information associated with the subscribed data (i.e., Delivery address and method).

Use Case 1.16 Modify Subscription

Market Participants or Market Operators may modify or remove their current subscription to OASIS data. Market Operators may remove subscriptions of Market Participants whose access rights to the information have been changed (e.g., deactivated) or whose abuse of the subscription facility jeopardizes system performance.

Use Case 1.17 Notify Subscribers

The OASIS system must implement the Notify Subscribers Use Case to be triggered from any other OASIS II Use Cases that insert new or modify existing data within OASIS that are eligible to be published to Market Participants through a publish/subscribe model. Market Participants must provide an online, accessible computer system that is able to respond to the unsolicited notification messages generated by OASIS on execution of this Use Case.

Use Case 1.18 Post Market Services

Market Operators and/or Transmission Service Providers must post all pertinent information with regard to the markets operated. This includes all applicable tariffs, products offered (e.g., transmission, energy, ancillary, etc.), market rules, timing requirements, etc. Information must also be posted on the data communication services provided to the Market Participants to interface with the Market Operator (e.g., web services registration).

This information may take the form of embedded documents, images, etc., of which there may be no programmatic interpretation made of the information returned. Because of this varied form of the information required to be posted, this Use Case is outside of OASIS and may use proprietary interfaces. Where practicable, it is recommended that an OASIS interface using standardized technologies (e.g., web services) be developed.

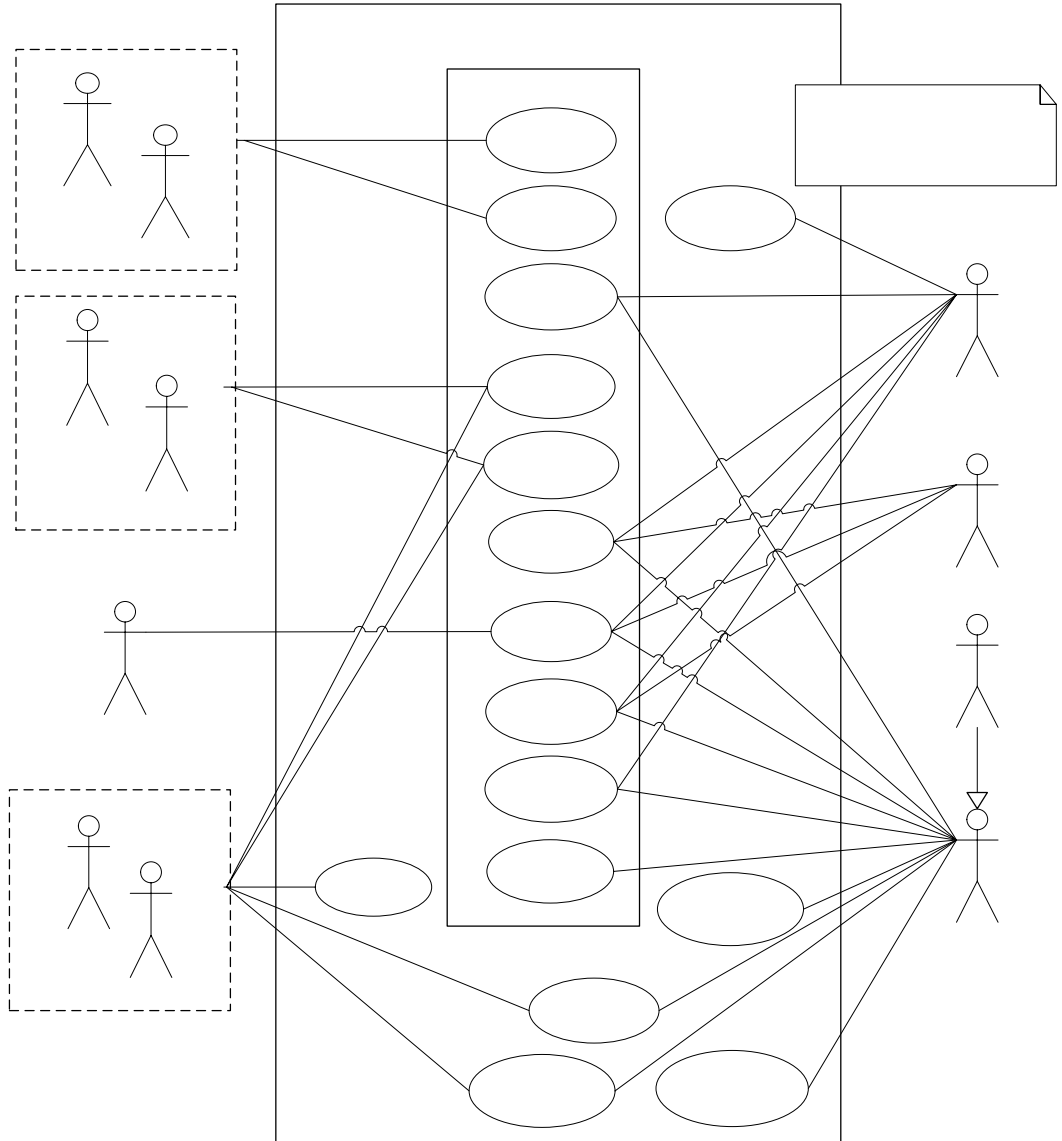
Use Case 1.19 View Registration

Market Participants, Market Operators, and the general Public may view registered information. Access control may limit a user's viewing of confidential or sensitive information (e.g., creditworthiness, login credentials, etc.).

3.2 Operations

The Operations Use Cases describe the various processes and interactions between Market Participants and those entities responsible for ensuring the reliable operation of the electrical system. Coordination for reliability is critical, and many Use Cases may involve the participation by all affected entities even if that involvement is not directly reflected in the Use Case diagram shown below. Collectively, the roles of Reliability Authority, Transmission Service Provider, Balancing Authority, and Market Operator are termed Operational Entities (OEs).

PSEs and LSEs submit load forecasts to OASIS. GPEs, dispatchable load LSEs, and TOs submit outage information to OASIS. RAs, BAs and MOs post operations data and reliability directives, etc., on OASIS. BAs and MOs post physical schedules for generation dispatch, load, and interchange based on unit commitment, bilateral and self schedules, and market clearing activities as appropriate. GPEs are responsible for following the generation dispatch orders from BAs and MOs. All entities are able to use the OASIS to view operations data based on their individual level of access control and the commercial sensitivity of the data.



Use Case 2.1 Submit Outage

GPEs (Generation Owners or Operators), Dispatchable Load LSEs, and Transmission Owners or Operators are responsible for informing the Reliability Authority, Market Operator, Balancing Authority, and Transmission Service Providers of planned outages, unplanned outages and facility deratings. In some areas this will be an advisory action. In others, a request is made with the understanding that subsequent approval is needed (see “Set Outage State”).

Use Case 2.2 Modify Outage

GPEs (Generation Owners or Operators), Dispatchable Load LSEs, and Transmission Owners or Operators may modify planned outages, unplanned outages, and facility deratings to reflect changing system conditions. Some modifications may be advisory in nature. Others may require review and approval by Reliability Authority, Market Operator, Balancing Authority, and/or Transmission Service Providers.

Use Case 2.3 Set Outage State

The Reliability Authority, Market Operator, Balancing Authority, and/or Transmission Service Provider may indicate their receipt and acknowledgement of facility outages or deratings. Certain of these parties may have the authority to approve or deny requests for facility outages based on operational security concerns.

Use Case 2.4 Submit Load Forecast

LSEs or their agents may be obligated to provide a forecast of its anticipated load to the Market Operator, Balancing Authority, Reliability Authority and/or Transmission Service Provider. Time horizon and granularity for submission of load forecast information may vary by market/region. The Reliability Authority, Market Operator, or Balancing Authority may indicate whether the LSEs load forecast is accepted and will be included in the creation of the system's total load forecast or whether other independent load forecast information will be used instead (see Set Load Forecast State).

Use Case 2.5 Modify Load Forecast

LSEs may be required to provide revised load forecasts to reflect changing system conditions. The Reliability Authority, Market Operator, or Balancing Authority may indicate whether the LSEs modified load forecast is accepted and will be

included in the creation of the system's total load forecast or whether other independent load forecast information will be used instead (see Set Load Forecast State). Time windows allowed for submission of revised load forecasts may vary by market/region.

Use Case 2.6 Set Load Forecast State

The Reliability Authority, Market Operator and/or Balancing Authority may be required to acknowledge receipt and acceptance of an LSE's load forecast. Depending on market rules, the Market Operators in coordination with the Balancing Authorities may be responsible for endorsing a given LSE's load forecast or in turn may post their own projection.

Use Case 2.7 Create System Load Forecast

The Market Operator in coordination with the Balancing Authorities are responsible for preparation of an accurate system load forecast including reserve requirements which may be based on LSE submitted load forecasts or their own internal assessments. The Reliability Authority has the responsibility to review this load forecast and operations plan for the next day.

Use Case 2.8 Create Unit Commitment

In a centralized market system, the Market Operator creates the unit commitment for all generation assets available to the market as part of its market clearing and resource adequacy assessment(s). The Balancing Authority and Reliability Authority are responsible for reviewing and refining unit commitment information to insure reliable operation. Generation Owners or Operators may be responsible for creating their own unit commitment (generator status and planned output) for their generation assets in regions where a centralized unit commitment/dispatch is not performed and communicating that commitment to the Balancing Authority (typically through the submission of self schedules).

Use Case 2.9 Determine Schedules

Market Operator or Balancing Authority is responsible for determining generation, load, and a net interchange schedules based on market clearing of bids and offers, Self Schedules, Bilateral Schedules, and unit commitments. Net interchange schedules are used in the Coordinate Interchange use case.

Determination of these schedules is performed outside of OASIS; however, most (if not all) of the input data comes from OASIS and the resulting schedules must be posted on OASIS. See Use Case 6.12 Post Schedules.

Schedules may be created or modified subsequent to market clearing. These schedules will be in the form of either generation schedules or load schedules. While generation and load schedules are not necessarily balanced by themselves, they may be combined into net interchange schedules which are balanced.

Any other type of schedule which may be required for operational reasons may also be determined through this use case. For instance schedules may be created to reflect the use of capacity and energy for ancillary commitments.

Use Case 2.10 Post Schedule

The Market Operator or Balancing Authority is responsible for posting all Schedules on OASIS by the time established for the market area. The Schedules posted on OASIS will be the source of dispatch instructions for the Market Participants (unless provided by real time telemetry or other automated mechanism). They will be used by the MO or BA for assessing energy imbalance, compliance with instructions, settlements, etc.

These Schedules are developed under Use Case 2.9 Determine Schedules, in which the MO or BA determines generation, load, and net interchange schedules based on market clearing of bids and offers, Self Schedules, and Bilateral Schedules. Net interchange schedules are used in Use Case x.1 Coordinate Interchange.

Use Case 2.11 Dispatch Generation

The Balancing Authority is responsible for balancing generation and load in real time for its metered area by direct telemetry/control of generating resources operating under the authority of the BA. Generators that are not under the authority of a Balancing Authority must have the necessary equipment to dispatch those resources based on dispatch orders from the Market Operator if applicable. Balancing Authorities operating within a market controlled by the Market Operator will typically receive economic dispatch targets from the Market Operator on a periodic basis as set by the Real Time Market clearing process. Between RTM clearing intervals, Automatic Generation Control (AGC) of regulating units is employed to maintain short-term balance.

Use Case 2.12 Follow Dispatch Orders

Generator owners or operators are responsible for following any dispatch orders directed by either the Balancing Authority or Market Operator. Base points may be telemetered to plants and automatically applied to units. Methods of communicating the dispatch and the format and content of the data will vary with area.

Use Case 2.13 Declare Abnormal Condition

The Reliability Authority in coordination with Balancing Authorities, Transmission Service Providers, Transmission Operators, Generation Operators, and Market Operators will determine the need for and declare any abnormal operating condition. Depending upon the nature and severity of this declaration, certain changes in market rules (or in fact the suspension of market activity) may take place.

Use Case 2.14 Post Reliability Directive

The Reliability Authority may issue directives during abnormal operating conditions or contingency conditions to direct the Balancing Authorities or Transmission Operators to take a particular action to ensure system reliability. Since these directives usually affect market operations to one degree or another, they are posted on OASIS for all to see. In addition, more direct non-OASIS means may be in place (such as direct ring-down telephone service) to notify critical facility operators of important reliability directives. Regional requirements may dictate that operational entities are automatically subscribed to receive electronic notifications (see Notify Subscribers) of each reliability directive issued.

Use Case 2.15 Post Operations Data

Various Operations Data may be posted during normal operations. This may include load forecasts, actual load history, current load, outages in effect, and other related material.

Use Case 2.16 View Operations Data

The Public (including Market Participants, Market Operators, Reliability Authorities, Balancing Authorities) may view Operations Data on OASIS consistent with their user access controls. Most data pertaining to current or past operations is generally available without restriction. Future outages, however, may be considered commercially sensitive and treated as proprietary information in order to prevent market gaming.

3.3 Transmission Rights Market

The Transmission Rights Market supports both financial rights and physical rights based models. The term Transmission Rights is used in this document to collectively represent either financial or physical rights dependent on market structure.

In general, financial rights markets are conducted through periodic auctions with congestion rents paid to rights holders based on differences in locational based marginal prices of energy. Physical rights markets have typically been conducted as a simple bilateral offer/purchase of transfer capability in the form of reservations (e.g., OASIS Phase I). Physical rights could also be auctioned under an appropriate set of market rules and tariff. Holders of physical transmission rights/reservations have the right to schedule energy transfers up to the amount of their reservations under the terms of the transmission rights purchased.

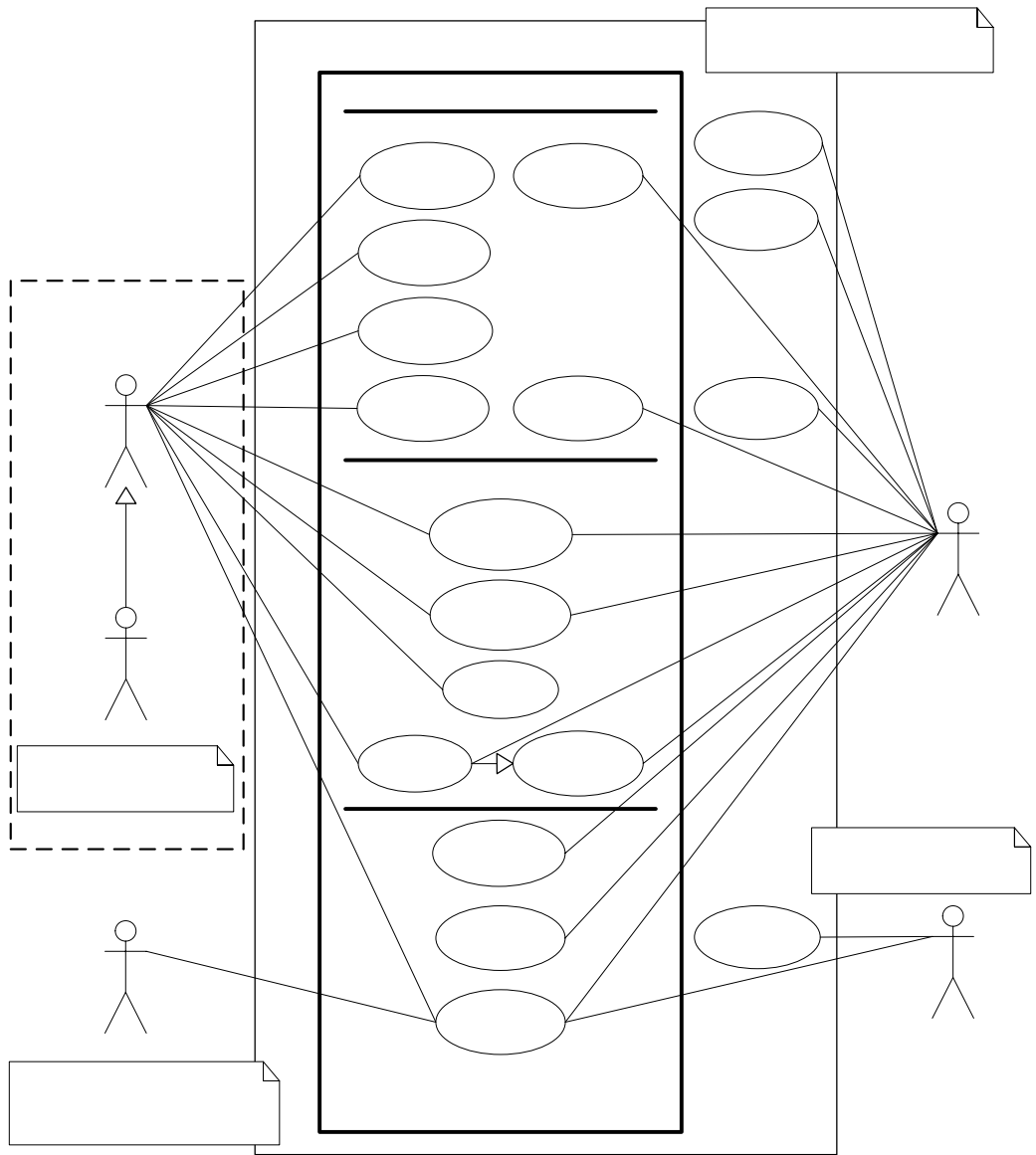
Both financial and physical transmission rights may be traded on the secondary market. This would be in the form of bilateral deals between any entity who holds transmission rights and the entity who desires to purchase those rights. However, there is no restriction on the conduct of a secondary market auction of transmission rights.

Based on the SMD Pro Forma Tariff, the following financial transmission rights in the form of Congestion Revenue Rights (CRRs) may be auctioned by the Market Operator for the term of the auction (e.g., seasonally, monthly, etc.). An initial allocation of transmission rights or allocation of auction revenue rights to Load-Serving Entities or their agents may be conducted by the Transmission Service Providers as Market Operator.

- Point-to-Point Congestion Revenue Right Obligations
- Point-to-Point Congestion Revenue Right Options
- Flowgate Congestion Revenue Right Options

Based on the Order 888 Pro Forma Tariff, the following physical transmission rights may be sold/purchased for various terms (e.g., hourly, daily, etc.).

- Firm Point-to-Point Transmission Service
- Non-Firm Point-to-Point Transmission Service
- Network Integration Transmission Service



Use Case 3.1 Assess Transfer Capability

The Transmission Service Provider is responsible for determining total and available transfer capability of the transmission system based on outages, forecasts, transmission rights, unit commitment, and market activity. Transfer capability must be updated in a timely fashion to reflect outages, sale of transmission rights and other special conditions. The results of this process must be posted on OASIS.

Purely financial transmission rights markets are typically only concerned with assessment of Total Transfer Capability. The concept of Available Transfer Capability has little meaning under such a market structure. Financial transmission rights markets will have less stringent requirements for the assessment, updating and posting of transfer capability for the transmission system than a physical transmission rights market.

This functionality is outside the scope of OASIS but is included here for completeness. The output of this function is required input to the Post Transfer Capability use case which is within the scope of OASIS.

Use Case 3.2 Create TR Allocation

Transmission Service Providers may perform an initial allocation of transmission rights or an allocation of auction revenue rights to Load-Serving Entities and/or Transmission Owners. Allocation may be based on such factors as historic usage, transmission asset investments, peak load, grandfathered contracts, etc. The results of any initial allocation of transmission rights or of auction revenue rights will be posted on OASIS (see Post Transmission Rights).

This functionality is outside the scope of OASIS but is included here for completeness. The output of this function is required input to the Post Transmission Rights use case which is within the scope of OASIS.

Use Case 3.3 Post TR Auction Announcement

Transmission Service Providers must post an announcement of any upcoming Transmission Rights Auction. This announcement typically includes information on the conduct of the auction, bid/offer data and timing requirements, any multi-tiered auction information, the types of rights to be auctioned, as well as any historic information related to congestion patterns, network model and assumptions to be used, and any pre-auction allocation of rights.

Use Case 3.4 Submit TR Auction Offer

Transmission Customers submit offers to sell transmission rights in the auction at any time from opening of the auction to closing of the auction. In some markets, participants are permitted to "exchange" their existing rights either for different types of rights or for rights on different facilities. This is accomplished by submitting an offer to sell the existing rights and a bid to purchase the desired rights in the auction. Clearing of these "exchange" offers/bids is contingent on each other; that is, they must both clear or neither clears. All submitted offers must pass validity checks including verification that the Transmission Customer actually holds the transmission rights being offered for sale.

Use Case 3.5 Modify TR Auction Offer

Up until the transmission rights auction is closed, Transmission Customers may modify their existing offers subject to any restrictions that may be enforced based on market rules specific to the auction being conducted.

Use Case 3.6 Submit TR Auction Bid

Transmission Customers submit bids to purchase transmission rights in the auction at any time from opening of the auction to closing of the auction. In some markets, participants are permitted to "exchange" their existing rights either for different types of rights or for rights on different facilities. This is accomplished by submitting an offer to sell the existing rights and a bid to purchase the desired rights in the auction. Clearing of these "exchange" offer/bids is contingent on each other; that is, they must both clear or neither clears. All submitted bids must pass basic validity checks.

Use Case 3.7 Modify TR Auction Bid

Up until the transmission rights auction is closed, Transmission Customers may modify their existing bids subject to any restrictions that may be enforced based on market rules specific to the auction being conducted. Existing bids may also be withdrawn from the market.

Use Case 3.8 Clear TR Auction

Transmission Service Providers clear the bids and offers for transmission rights at the close of the auction. Financial Congestion Revenue Rights are cleared using the objective function of maximizing auction revenue while meeting a simultaneous feasibility test to ensure revenue adequacy. Markets that conduct auctions for physical transmission rights may limit the amount of rights available in the auction process to an amount that can be physically accommodated by the

transmission system. All cleared transactions are subsequently posted for the Market Participants to view.

This functionality is outside the scope of OASIS but is included here for completeness. The output of this function is required input to the Set TR Auction Bid/Offer State and Post Transmission Rights use cases which are within the scope of OASIS.

Use Case 3.9 Set TR Auction Bid/Offer State

The Transmission Service Provider will update all bids and offers submitted into the TR Auction to indicate whether the particular bid or offer was cleared, in whole or in part, in the auction. This is in addition to the posting of the transmission rights granted to each auction participant.

Use Case 3.10 Submit TR Proposal

Transmission Service Providers and any holder of Transmission Rights may submit a "proposal" for the sale of Transmission Rights. Market Participants wishing to purchase Transmission Rights may submit a "proposal" to purchase those rights. There is no implied process or action taken to match proposals for sale with proposals for purchase. Market participants are required to review all such proposals and initiate the purchase or sale (deal) with their desired counterparty through the Submit TR Deal Use Case.

In the context of OASIS Phase I, the Submit TR Proposal is analogous to the TSPs posting of offers and the Transmission Customers posting of rights for resale on the secondary market. Proposals for purchase are analogous to a Transmission Customers use of the "want ads" to advertise their willingness to purchase rights on the secondary market.

Use Case 3.11 Modify TR Proposal

Transmission Service Providers and Transmission Customers may modify certain parameters (e.g., price, quantity, etc.) associated with their existing proposals of transmission rights for sale or purchase. Buyers and Sellers of transmission rights should update any posted TR Proposals as bilateral deals for sale/purchase of these rights are consummated.

Use Case 3.12 Submit TR Deal

Market Participants submit a "deal" 1) as buyer to request the purchase of transmission rights from either the Transmission Service Provider or another Market Participant (the seller), or 2) as seller to request the sale of transmission

rights to another Market Participant (the buyer). There is no requirement that there be a "proposal" (offer to sell or offer to purchase) posted to the market for a participant to submit a request to buy or sell transmission rights to a counter-party. Submission of a TR deal initiates the negotiation and confirmation process between the counter-parties. Note that a Market Participant may be negotiating deals for sale of a given set of transmission rights with multiple counter-parties for the same transmission rights simultaneously. Similarly, a Market Participant may be negotiating deals with multiple counter-parties for purchase of rights to meet a given portion of their needs.

Market Participants will be required to post information related to off-OASIS secondary market sales of their transmission rights using the Submit and Modify TR Deal Use Cases. Off-OASIS sales are still required to be accepted by the counter-party.

Existing physical transmission rights holders may request an "exchange" of those rights by submitting a "redirect" deal to the TSP.

In the context of OASIS Phase I, the Submit TR Deal is analogous to the Transmission Customers posting of a reservation request to either the TSP or to another Transmission Customer on the secondary market. OASIS Phase I did not support the concept of a seller initiating the reservation request or negotiation process.

Use Case 3.13 Modify TR Deal

Transmission Customer and Transmission Service Providers, as counter-parties to a deal for the bilateral sale/purchase of transmission rights, may change certain attributes of the deal as part of the negotiation and confirmation process to buy or sell transmission rights. These changes are limited to such actions as altering the MW quantity, adjusting purchase price, etc. The range of possible actions that may be taken on the deal is determined by the Participant's role (i.e., seller or buyer) in the deal. The Transmission Customers and Transmission Service Providers may also change the state of the deal (e.g., accepted or denied) as part of the Modify TR Deal process.

Use Case 3.14 Set TR Deal State

This use case is called by the Modify TR Deal use case to change the state of a TR Deal.

Transmission Service Providers may have limited approval rights over TR deals conducted through the bilateral market, and may change the state of a deal directly. One example would be the TSPs refusal to accept transfer of financial liability to the buyer of transmission rights if that buyer cannot meet the TSPs creditworthiness requirements. The TSP indicates their refusal to honor the terms

of the Deal CONFIRMED by the counter-parties by setting the Deal state to ANNULLED with an appropriate reason code and text.

Use Case 3.15 Post Transmission Rights

Transmission Service Providers must post pertinent information regarding ownership of transmission rights acquired through auctions, allocations, grandfathered agreements, secondary market sales, etc. for public and private viewing. Information determined to be commercially sensitive or of a confidential nature will be made accessible only to the party owning the transmission right and the Market Monitor.

In the context of OASIS Phase I, the Post Transmission Rights use case is analogous to the functionality of the "reduction" template. This template shows the original rights held by the Transmission Customer as well as any changes or reduction in those rights over time as a result of secondary market sales, redirection of rights to a different transmission path, TSP initiated recalls, etc.

Use Case 3.16 Post Transfer Capability

Transmission Service providers must post information reflecting the total and available transfer capability, and other pertinent attributes of the transmission system in accordance with market rules and regulatory orders.

In the context of OASIS Phase I, the Post Transfer Capability use case is analogous to the "systemdata" template which is used by Transmission Customers to view the TSPs assessment of transfer capability.

Use Case 3.17 View TR Market

The Public, Transmission Customers, Transmission Service Providers and Market Monitors have the ability to see pertinent information regarding all the physical and/or financial transmission rights procured from the transmission market including the ability for selective querying of information. Transmission Customers, Transmission Service Providers and Market Monitors will be able to view commercially sensitive information that may not otherwise be made available to the Public or prior to its being made available (e.g., 90 days after the fact) to the Public. Transmission Customer access to commercially sensitive information will be limited to only that information or transactions to which the Transmission Customer is a direct party.

Use Case 3.18 Monitor Market Compliance

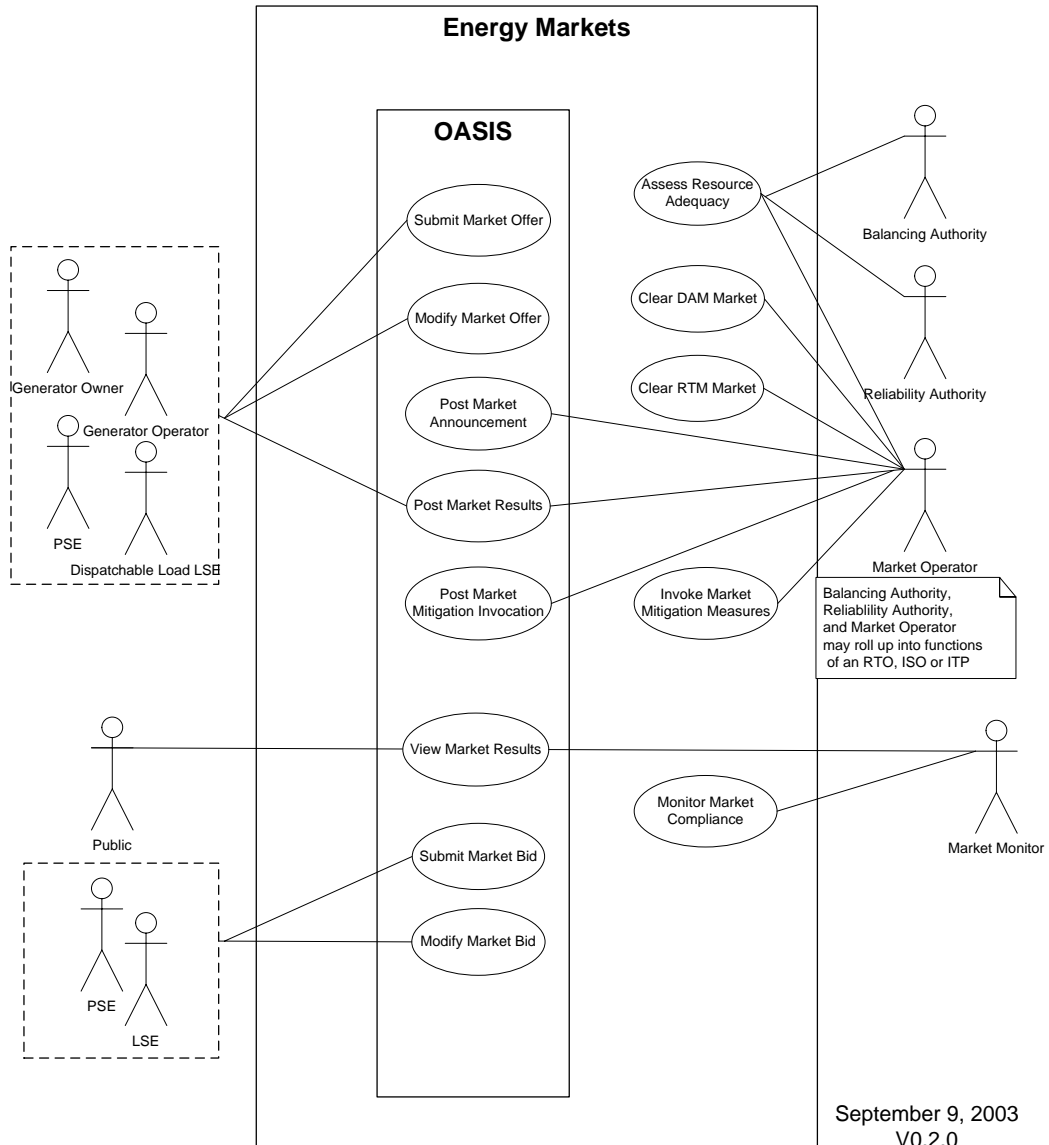
This activity is assumed to take place internally within an ITP, RTO, or ISO. It would most likely be performed by a Market Monitoring function. It is assumed to involve privileged access to any data needed to assure that the market is operating properly and that no market power or other abuses are taking place.

This functionality is outside the scope of OASIS but is included here for completeness.

3.4 *Energy Markets*

Use Cases for the Energy Markets describe the various processes and interactions taken by and between Market Participants, Market Operators, and various reliability and market oversight entities. The design of the Energy Markets is patterned after both existing and planned market designs. Regional variations in the data requirements and conduct of the Energy Markets are anticipated. Key components of the Energy Markets are the establishment of locational clearing prices for energy, ancillary services (e.g., regulation and operating reserves), congestion and marginal losses.

Energy Markets Use Case Diagram



Use Case 4.1 Submit Energy Market Offer

The purpose of this function is to allow generation-providing entities (owners, operators), LSEs or PSEs to inform the market operator of their desire to supply energy and related products from qualified resources (generation or dispatchable load) and to communicate the prices at which they are willing to sell these products. Energy Market offerings typically take the form of blocks of energy at a fixed price for a period of time (i.e. 50 MW at \$25/MW in hour X). The most general form includes a table of start-up prices as a function of down time, a price for running at minimum generation level, a piece-wise linear curve of incremental energy price as a function of output level, blocks of reserve capacity and prices, and blocks of regulation capacity with prices. For the Day-Ahead Market, the latter three products could each be different for each of the 24 hours of the following day. In addition, certain types of generators such as Gas Turbines will have a minimum run time and a minimum down time before restart. There may also be parameters unique to energy-limited resources such as pond-limited hydro generators or wind farms. The Energy Market may also support "virtual" supply offers to provide a financial tool to hedge against day ahead and real-time market clearing price differentials.

Use Case 4.2 Modify Energy Market Offer

The purpose of this function is to modify or withdraw an existing offer prior to market closing to the extent that such changes are permitted in a market. Business rules will govern what can be changed and when.

Use Case 4.3 Submit Energy Market Bid

The purpose of this function is to allow LSEs (or their agents) and PSEs to inform the market operator of their desire to purchase energy and the price they are willing to pay. In its simplest form, DAM bids consist of a profile by hour for the following day of the portion of their anticipated load to be purchased in the DAM. In the Real-Time Market, these bids typically indicate interruptible load available for the next hour. Blocks of energy bid into the market may have a strike price associated with them or may indicate the bidder's willingness to purchase energy at the market clearing price (price taker). For certain types of interruptible load, the option to purchase or shut down is available. The Energy Markets may also support "virtual" load bids to provide a financial tool to hedge against day ahead and real-time market clearing price differentials.

Use Case 4.4 Modify Energy Market Bid

The purpose of this function is to modify or withdraw an existing bid prior to market closing to the extent that such changes are permitted in a market. Business rules will govern what can be changed and when.

Use Case 4.5 Clear DAM

Immediately following the close of the DAM, the Market Operator is responsible for collecting all generation and transmission outage information, the system load forecast, all bilateral and self-schedules, and all valid bids and offers made into the DAM. The Market Operator in coordination with the Reliability Authority and Balancing Authority may then process this information to select and commit those units to run that meet all of the criteria for serving the load, loading the transmission system, providing reserves, providing regulation, and minimizing total production cost. Some markets may iterate through this process several times in order to arrive at a final Day Ahead Market settlement. The Day Ahead Market may then be cleared by dispatching those selected units against the load that was bid into the DAM for each hour of the following day and establishing the market clearing price for energy and related products (reserves, etc.) at each pricing location (node, zone, hub, etc.). All offers and bids cleared day ahead are financially binding. In some markets, the Market Operator is responsible for insuring that the solutions arrived at are the most economic for the given set of operational constraints. Results of the DAM clearing are posted to OASIS to notify all Market Participants and operational entities of the planned operation of the system.

Use Case 4.6 Clear RTM

The Market Operator, in coordination with the Balancing Authority and Reliability Authority, may be responsible for the clearing of the Real-Time Market, performed periodically throughout the hour. This process is designed to assure that the needs of the system are met with a set of resources that minimizes the incremental cost of the next increment of generation. RTM clearing may be accomplished through a security constrained economic dispatch that factors in current system operating conditions, new or revised bilateral and self schedules and all bids and offers submitted for the interval to be cleared. RTM clearing results in new unit target dispatch information and any applicable dispatchable load instructions along with market clearing prices at each pricing location (node, zone, hub, etc.). Generation Operators and LSEs may be notified of dispatch targets directly, or through their Balancing Authority dependent on market implementation. Results of the RTM clearing are also posted to OASIS to notify all Market Participants and operational entities of the actual operation of the system.

Use Case 4.7 Assess Resource Adequacy

The Market Operator, in coordination with the Reliability Authority and Balancing Authority, is responsible for insuring that all forecasted load may be reliably served. The Market Operator may direct generation resources not selected in the DAM clearing to come on-line as necessary based on DAM offers and/or offers submitted or modified subsequent to DAM clearing. Resource adequacy assessment may be performed earlier than day ahead based on the generator characteristics made available to the Market Operator. Resource adequacy assessment may be integrated and solved simultaneously in the DAM clearing process dependent on the market design/implementation. Resource adequacy assessment may be re-executed multiple times prior to the operating day based on changing circumstances, e.g., unplanned outages, revised load forecasts, etc. For those markets that operate a Security-Constrained Economic Dispatch in real time, the resources adequacy check is a continuous and integral part of the SCED solution. This function is typical not performed on OASIS.

Use Case 4.8 Post Market Results

The Market Operator will post the results of the Energy Markets clearing prices in OASIS. This information will be comprised of public data such as hourly Market prices for each pricing location (node, zone, hub, etc.) and Market Participant proprietary data such as bids and offers.

Use Case 4.9 View Energy Market Results

Market Participants may access Energy Market Clearing Results according to their unique permission profiles. Data such as market clearing prices are generally available without restriction. Access to Market Participant proprietary offer and bid data are generally restricted to that Market Participant. Regulatory agencies may also access data consistent with permission levels agreed to by the OASIS operator. Regulatory agencies may include FERC, Regional Reliability Organizations, NERC, and state Public Utility Commission personnel. Operational entities, e.g., Reliability Authority, Balancing Authority, Interchange Authority, etc., may also access market information as it relates to reliable operation of the interconnection.

Use Case 4.10 Monitor Market Compliance

Market monitoring will take place outside of OASIS II. Market Monitors will have privileged access to all OASIS data.

Use Case 4.11 Invoke Market Mitigation Measures

Where conditions may have created a market power situation, the Market Operator invokes certain pre-approved measures to mitigate the market power leverage that might otherwise exist. These measures may take the form of price caps on offers in a given geographic area, out of merit bid selection, penalty assessment, etc based on the filed tariff. This function takes place outside of OASIS II.

Use Case 4.12 Post Market Mitigation Invocation

Whenever Market Mitigation Measures are invoked, the Market Operator will post on OASIS the specific measures taken, including areas and time periods affected.

3.5 *Bilateral and Self Schedules*

Bilateral Schedules, Self Schedules, and Bilateral Contracts may be submitted by Market Participants. These are typically the result of forward market contracts entered into by GPEs, PSEs, and LSEs.

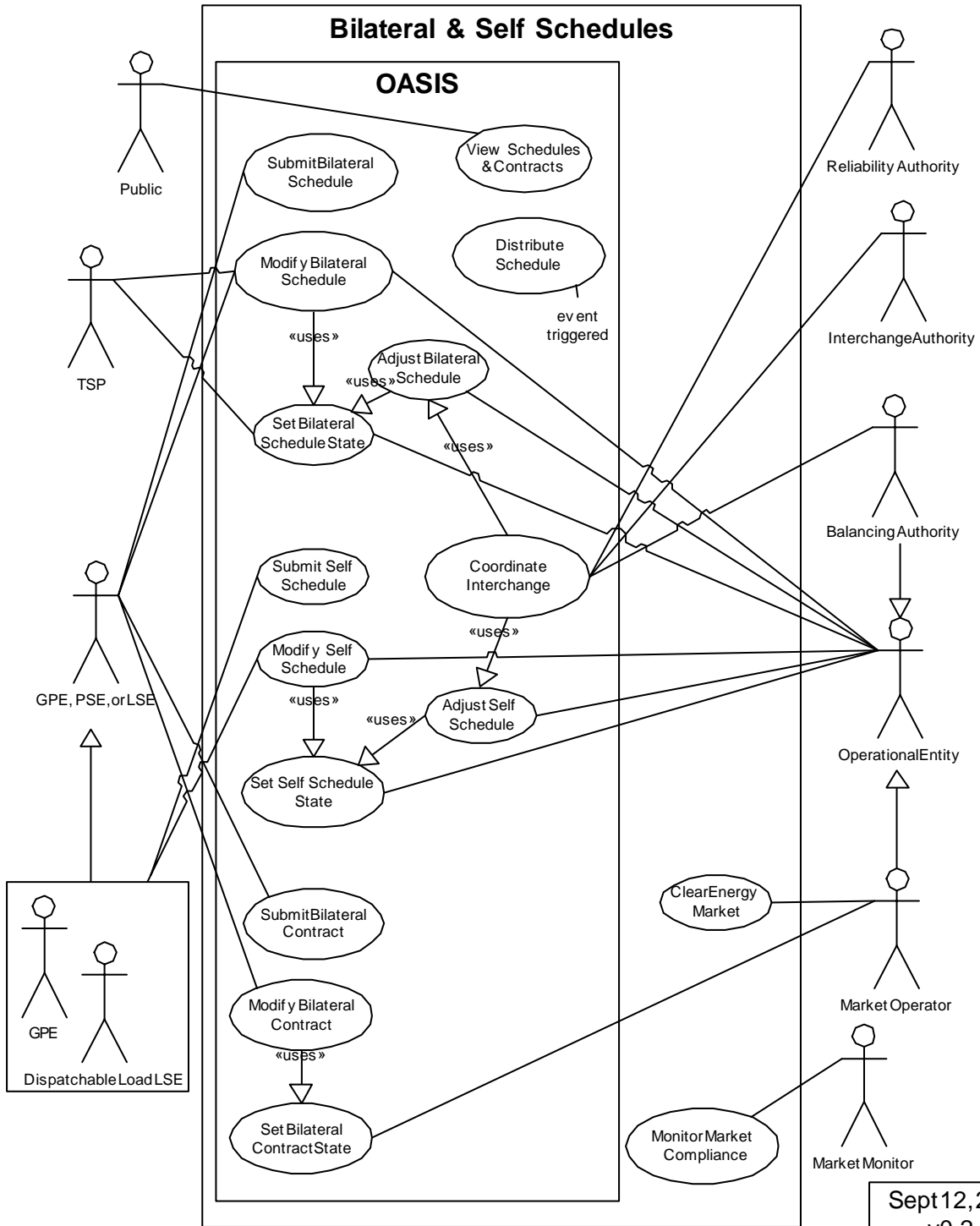
Bilateral Schedules reflect a balanced delivery of energy from generation resource(s) to load resource(s), either internal or external to the market area. They are submitted in order to schedule energy delivery for financial transactions, which were entered into outside of the Day Ahead or Real Time energy markets.

Bilateral Schedules may also be submitted to document the provision of certain ancillary services (e.g., operating reserves) contracted for between counter-parties. These Bilateral Schedules represent a commitment of capacity from qualified generation resources or dispatchable load resources to meet all or a portion of a Market Participant's ancillary service obligation.

Self Schedules reflect a generator's intent to inject energy into the system at a given location, or to notify the Market Operator of the provision of certain ancillary services (e.g., operating reserves) from qualified generation resources or dispatchable load resources. Self Schedules do not cross MO or BA boundaries and do not involve any other MPs. Self Schedules may be submitted to implement tariff or regulation obligations and may include price information. Where markets exist, Self Schedules that have no explicit bid information are considered to be "price takers" when they are considered in the market clearing processes. The resulting schedule is the same whether an entity submits a Self Schedule, or submits a "price taker" offer in the Energy Market. In some situations, entities may not be able to submit offers, either because of regulation or because Energy Markets do not exist. However, the entities must submit schedule requests. The Self Schedule use cases are intended to accommodate such scheduling needs.

Bilateral Contracts are purely financial transactions documented electronically for incorporation into the market settlement process. Bilateral Contracts have no implied relation to Bilateral Schedules or Self Schedules.

Bilateral & Self Schedules Use Case Diagram



Use Case 5.1 Submit Bilateral Schedule

Parties may enter into transactions to buy and sell energy outside of the Day Ahead and Real Time energy markets. The Market Operator is typically unaware of these transactions. Therefore, in order for a transaction to be scheduled, a Bilateral Schedule must be submitted. The data may be used for the Assess Resource Adequacy, Clear Market, Create Schedule, and/or reliability processes. Because the energy has already been bought and sold outside of the markets, Bilateral Schedules do not need to contain an energy price, but they may contain a bid price the parties are willing to pay for congestion charges and losses.

Market Participants submit Bilateral Schedules reflecting a balanced scheduled delivery of energy, either internal or external to the market area. Where markets are established, bilateral transactions submitted for the Day Ahead Market will be cleared as part of the DAM clearing process; bilateral transactions submitted subsequent to closing of the DAM will be cleared as part of the Real Time Market clearing process.

The Bilateral Schedule must be submitted to the OASIS designated by the sink BA. That OASIS will function as the IA for the Bilateral Schedule.

The specific generation and load resources used to satisfy the scheduled energy delivery may not need to be supplied with the initial schedule submittal. However, either the MP submitting the schedule or the respective GPE or LSE responsible for the generation and load, must modify the schedule to identify the specific generation resources and load resources associated with the scheduled energy delivery prior to market closing or defined time limits. When multiple generation resources are designated, they must all be owned/operated by a single named GPE and operated under the authority of a single Market Operator, or, where there is no MO, a single Balancing Authority. Likewise, all load resources must be owned/operated by a single named LSE and operated under the authority of a single MO or BA.

Transmission usage charges may apply to Bilateral Schedules so parties may have price sensitive bidding options. Transmission usage charges may include congestion charges and financial loss charges. Some markets allow profiling of the bids, i.e., the bid price may be different for each time interval. Some markets may also grant physical transmission rights, which exempt parties from paying congestion charges.

Examples of price sensitive bidding options that may be submitted with a Bilateral Schedule follow:

- Up-to Congestion — transaction will clear (be scheduled) in the market provided the transmission congestion charge from generation resources (or boundary interface for imports) to load resources (or boundary interface for exports) does not exceed the bid price.
- Up-to Congestion plus Losses — transaction will clear (be scheduled) in the market provided the total of both congestion charge and loss charge from generation resources (or boundary interface for imports) to load

resources (or boundary interface for exports) does not exceed the bid price.

- Parties may agree to pay any congestion or loss charges regardless of price.

Congestion/loss bidding options are typically not available in the Real Time Markets for Bilateral Schedules that cross multiple markets. This functionality is not envisioned to be supported by OASIS at the present time.

Provision of certain ancillary services (e.g., operating reserves) may also be communicated to the Market Operator through a special type of Bilateral Schedule called an ancillary commitment. Schedules would be created against the commitment only if and when the commitments are called on by the MO or BA. Ancillary commitment requests are typically restricted to being wholly within the footprint of the Market Operator but they may also involve more than one market. The basic handling of these bilateral ancillary commitments is identical to the handling of other Bilateral Schedules, except that the resulting commitment represents the obligation of the GPE or Dispatchable Load LSE to provide capacity for the ancillary service(s).

Use Case 5.2 Modify Bilateral Schedule

Market Participants, Transmission Service Providers, and Operational Entities, such as MOs or BAs, may submit select modifications of existing Bilateral Schedules subject to certain limitations, such as submittal time, etc. Each modification may require acknowledgement or approval by one or more entities.

Common modifications include:

- GPEs identifying or approving specific generation resources to be scheduled.
- LSEs identifying or approving the specific load resources to be served.
- MPs changing the bid price for congestion or financial losses.
- MPs or Operational Entities changing the MW profile of either an energy schedule or ancillary commitment. (Market rules may govern the amount by which an MP may change the MW profile.)
- MPs identifying or changing Transmission Right ID(s) or profiles.
- MPs or Operational Entities changing the profile date/times.
- TSPs entering data for Transmission Rights that support the energy schedule. These may be generated on behalf of the MP if they have not identified Transmission Rights they already own.

Use Case 5.3 Adjust Bilateral Schedule

Market Operators and Balancing Authorities may need to adjust existing Bilateral Schedules.

Adjust can only be used by Operational Entities and only at the point where a Market Participant no longer has the right to act on the schedule. If an MP still has the right to accept, modify, deny, or withdraw a Bilateral or Self Schedule, then the Operational Entity must use the Modify Bilateral Schedule use cases instead of the Adjust Bilateral Schedule use case to communicate with the MP.

Use Case 5.4 Set Bilateral Schedule State

Market Participants, Market Operators, Transmission Service Providers, and Balancing Authorities may be required to explicitly acknowledge and/or approve Bilateral Schedules and subsequent modifications depending on their role and the type of schedule or modification.

Market participants will access this use case through the Modify Bilateral Schedule use case. TSPs, Market Operators and Balancing Authorities may also access it through the Modify Bilateral Schedule or Adjust Bilateral Schedule use cases, or they may access it directly.

All Bilateral Schedule state changes are coordinated by OASIS.

Use Case 5.5 Distribute Schedule

OASIS, as the Interchange Authority (IA), is responsible for distributing each schedule to all entities involved, such as BAs, TSPs, MOs, GPEs, LSEs, and PSEs. Any modification to a schedule must also be distributed to all affected entities. Certain entities may have approval rights over schedules. OASIS is responsible for maintaining information related to each such entity's approval or denial of the schedule and distributing that information to all affected entities.

Use Case 5.6 Submit Self Schedule

Generation Providing Entities may submit Self Schedules for injection of energy at a given generation resource(s). Where energy markets exist, the Market Operator will typically treat all acknowledged Self Schedules as being "price takers" as part of the market clearing process.

GPEs and Dispatchable Load LSEs may also submit Self Schedules for ancillary commitments to meet all or a portion of the Market Participant's ancillary service obligation. These are a special type of Self Schedules for the provision of certain ancillary services (e.g., operating reserves). The basic handling of these ancillary commitments is identical to the handling of other Self Schedules, except that the

resulting commitment represents the obligation of the GPE or Dispatchable Load LSE to provide capacity for the ancillary service(s).

The Self Schedule must be submitted to the OASIS designated by the generator's BA.

Use Case 5.7 Modify Self Schedule

GPEs and Dispatchable Load LSEs may make selective modifications to existing Self Schedules subject to possible limitations on submittal times, modifiable fields, etc. Modifications may be made up until market clearing. Some modifications may require explicit acknowledgement or approval from the Market Operator.

Use Case 5.8 Adjust Self Schedule

Market Operators and Balancing Authorities may need to adjust existing Self Schedules.

Adjust can only be used by Operational Entities and only at the point where a Market Participant no longer has the right to act on the schedule. If an MP still has the right to accept, modify, deny, or withdraw a Self Schedule, then the Operational Entity must use the Modify Self Schedule use case instead of the Adjust Bilateral Schedule use case to communicate with the MP.

Use Case 5.9 Set Self Schedule State

Where energy markets exist, the Market Operator communicates the results of market clearing in Day Ahead and Real Time by setting the state of all submitted Self Schedules to indicate whether they are cleared. Where energy markets do not exist, Balancing Authorities set the state in order to acknowledge the Self Schedule.

Market participants will access this use case through the Modify Self Schedule use case. Market Operators and Balancing Authorities may also access it through the Modify Self Schedule or Adjust Self Schedule use cases, or they may access it directly.

All schedule state changes are coordinated by the OASIS.

Use Case 5.10 Clear Energy Market

This use case is out of scope for OASIS but is referenced for completeness.

See Use Case [Insert # link](#) Clear Energy Market

Use Case 5.11 Coordinate Interchange

This use case is documented in another area but is referenced here for completeness.

See Use Case [Insert # link](#) Coordinate Interchange

Use Case 5.12 Submit Bilateral Contract

Market Participants may submit Bilateral Contracts to document contracts, which were entered into outside of OASIS, for the market settlement process. Bilateral Contracts are purely financial instruments submitted to the Market Operator, and may be submitted after the fact as permitted by market business rules. The Bilateral Contract pricing information or other contractual terms and conditions between the counter-parties are not communicated to the Market Operator; the MO only requires contract information related to the financial responsibility of each counter-party as it relates to market settlements. The counter-party to a submitted Bilateral Contract may be required to approve or acknowledge the transaction. (See the Set Bilateral Contract State use case).

The data typically submitted in a Bilateral Contract is start/stop time, MW, source, sink, entities involved, designation of which entity is responsible for payment of which charges.

Use Case 5.13 Modify Bilateral Contract

Market Participants may make select modifications to existing Bilateral Contracts subject to possible limitations on submittal times, modifiable fields, etc. Some modifications may require explicit acknowledgement or approval from the Market Operator or other counter-parties.

Use Case 5.14 Set Bilateral Contract State

Market Participants (usually counter-parties) and Market Operators may be required to explicitly acknowledge and/or approve submission and subsequent modification of Bilateral Contracts depending on their role and the type of submission/modification performed.

Use Case 5.15 View Bilateral & Self Schedules

The public has the ability to see pertinent information regarding all physical and/or financial schedules and contracts, including the ability for selective querying of information.

The ability to view information is based on the viewer's identity and timing; business rules will govern who can see what information and when they can see it. Market Participants may always view their own data. Others may view select data after it has been made publicly available in accordance with regulatory requirements. Market Operators may view data necessary to operate the markets. Market Monitors will be able to view commercially sensitive information that may not otherwise be made publicly available or prior to this information being made publicly available.

Use Case 5.16 Monitor Market Compliance

This use case is out of scope for OASIS but is referenced for completeness.

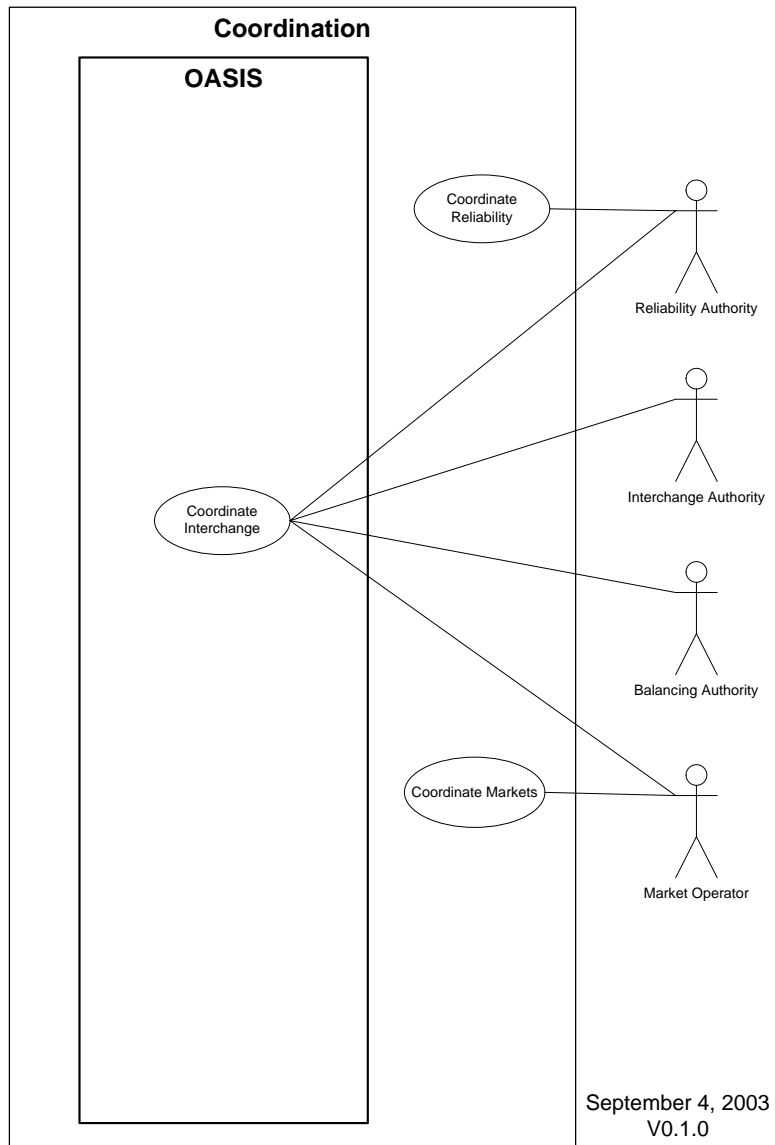
See Use Case [Insert # link](#) Monitor Market Compliance.

3.6 *Coordination*

The Coordination Use Cases document the activities and processes required to coordinate actions taken by Reliability Authorities, Interchange Authorities, Balancing Authorities and Market Operators. Most of these activities are outside the scope of OASIS and are only identified here for completeness and to recognize that effective coordination processes will need to be developed between the various Actors. The exception is Coordinate Interchange which will be developed as a standard OASIS II process due to its critical role in both reliable and commercial operation of the electrical system.

This category of Use Cases is likely to grow in time to reflect efforts underway to mitigate seams issues between adjacent markets/regions.

Coordination Use Case Diagram



Use Case 6.1 Coordinate Interchange

Reliability Authorities, Interchange Authorities, Balancing Authorities and Market Operators use Coordinate Interchange to exchange information regarding the set of final, confirmed interchange schedules that are expected to be included in each Balancing Authority's net scheduled interchange. Any party may execute this use case with any other party. However, the following interactions are envisioned to be the typical cases:

- Balancing Authorities coordinate interchange with their designated Interchange Authority.
- Interchange Authorities coordinate interchange with ALL other Interchange Authorities (i.e., the concept of "adjacent IAs" nor "intermediary BAs/IAs" is not part of current NERC Functional Model)
- Reliability Authorities verify interchange with all Interchange Authorities operating within their Reliability Area
- Market Operators verify interchange with all Interchange Authorities and Balancing Authorities within their Market Area

Use Case 6.2 Coordinate Markets

Market Operators should coordinate their markets with other Market Operators. This coordination may involve iterations on market clearing operations in order to recognize the impact of loop and parallel flows induced on one another's transmission systems as a result of security constrained unit commitment and economic dispatch solutions. Coordination may also allow for the automated bidding of generation not selected in one market to be offered into other markets that have a higher marginal clearing price subject to limitations on transmission transfer capability, etc.

This Use Case is outside the scope of OASIS II.

Use Case 6.3 Coordinate Reliability

Reliability Authorities must coordinate all actions with each other and all other operational entities under their direct authority. This includes the notification of any reliability directives issued to Market Operators or Balancing Authorities, execution of any line loading relief procedures, coordination of market redispatch, etc. (see Declare Abnormal Condition Use Case). The Operational Entities that are ultimately responsible for taking remedial action based on a declared abnormal condition may vary by market or region and by event/condition. For example, declaration of the Unscheduled Flow procedure in the Western Interconnection is mitigated by merchant entities adjusting scheduled interchange.

The Transmission Loading Relief procedure in the Eastern Interconnection is declared by the Reliability Authority who also directs the adjustment of scheduled interchange.

This Use Case is outside the scope of OASIS II.