This is a *DRAFT CHARTER* for discussion and review, William Cox, *wtcox@CoxSoftwareArchitects.com*, editor.

While this proposal is not confidential, the names and affiliations of sponsors will be until nearly time for submission to the formal OASIS review process.

If you would like to support this proposal, send email to the editor.

Comments to the mailing list

***smartgrid-interest@lists.oasis-open.org*.**

To subscribe to the smartgrid-interest list, either send a message to the list address, smargrid-interest@lists.oasis-open.org with "subscribe" in the subject line, or go to http://www.oasis-open.org/mlmanage/ , enter your email address, and click Manage Subscriptions. Smartgrid-interest is half way down the right hand column on the next page.

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The mailing list is open to anyone, OASIS Member or not.

If you would like to support this proposal, please send email to the editor.

OASIS Energy Market Information Exchange Technical Committee Charter

Draft of March 30, 2009

1) The Charter of the TC, which includes only the following items:

(1)(a) The name of the TC

OASIS Energy Market Information Exchange TC

(1)(b) A statement of purpose, including a definition of the problem to be solved.

Energy markets have been characterized by poor coordination of supply and demand. This failing has exacerbated the problems caused by rising energy demand. In particular, poor communications concerning times of peak use cause economic loss to energy suppliers and consumers. There are today a limited number of high demand periods (roughly ten days a year, and only a portion of those days) when the failure to manage peak demand causes immense costs to the provider of energy; and, if the demand cannot be met, expensive degradations of service to the consumer of energy. As the proportion of alternative energies on the grid rises, and more energy comes from unreliable sources, the frequency and scale of these problems will increase.

Energy consumers can use a variety of technologies and strategies to shift energy use to times of lower demand and also to reduce use during peak periods. This shifting and reduction can reduce the need for new power plants, and transmission and distribution systems. These changes will reduce the overall costs of energy through greater economic efficiency. This process is called various names, including Demand Response (DR), demand shaping, and load shaping.

Distributed energy generation now challenges the traditional hierarchical relationship of supplier and consumer. Alternative and renewable energy sources may be placed closer to the end nodes of the grid. Wind and solar generation, as well as industrial co-generation, allow end nodes to sometimes be energy suppliers. Energy storage, particularly in plug-in hybrid vehicles, means that the same device may be sometimes a supplier, sometime a consumer. As these sources are all intermittent, they increase the challenge of coordinating supply and demand to maintain the reliability of the electric grid.

Better communication of energy prices addresses growing needs for lower-carbon, lower-energy buildings, net zero-energy systems, and supply-demand integration that take advantage of dynamic pricing. Local generation and local storage require that the consumer (in today's situation) make investments in technology and infrastructure including electric charging and thermal storage systems. Buildings and businesses and the power grid will benefit from automated and timely communication of energy pricing, capacity information, and other grid information.

A consistent model for market information exchange can be applied, perhaps with elaboration or subsetting, to allow essentially the same information exchange for homes, individual appliances, small businesses, commercial buildings, office parks,

neighborhood grids, and industrial facilities, simplifying communication flow across the broad range of energy providers, distributors, and consumers, and reducing costs for implementation.

These communications will involve energy consumers, producers, transmission and distribution systems, and must enable aggregation for both consumption and curtailment resources. Market makers, such as Independent System Operators (ISOs), Regional Transmission Operators (RTOs), utilities, and other evolving mechanisms need to deliver actionable information in consistent formats as the Smart Grid evolves. With information in consistent formats, building and facility agents can make decisions on energy sale, purchase, and use that fit the goals and requirements of their home, business, or industrial facility.

The new symmetry of energy transactions demands symmetry of interface. A net consumer of energy may be a producer when the sun is shining, the wind is blowing, or a facility is producing co-generated energy. Each information exchange must support symmetry as well, with energy and economic transactions flowing each way.

In addition to architectural symmetry, this work should create composed and composable solutions that leverage existing technologies (such as OASIS fine-grained web services security standards) rather than reinventing.

To gain the economic and societal benefits promised by Smart Buildings/Facilities and Enterprises as aspects of Smart Grids, dynamic pricing, reliability, and emergency signals must be communicated through interoperability mechanisms that meet business needs, scale, use a variety of communication technologies, maintain security and privacy, and are reliable.

As technology evolves, we must try to define interoperability in a manner that will work with anticipated changes as well as those we cannot predict. Automated and timely communication of price, bid, and characteristics of energy are important to growing and increasing the efficiency of energy markets.

The Technical Committee will focus on means of exchanging market information consistent with the OASIS BLUE approach (see http://www.oasis-open.org/resources/white-papers/blue/), including consistency, transparency, and security.

The data exchanged is critical information for dynamic pricing and determining the characteristics of what is purchased and sold.

(1)(c) The scope of the work of the TC.

This TC will leverage existing work wherever feasible, and will produce specifications for interoperation consistent with architectural principles including symmetry, composability, service orientation, and aggregation.

The TC will develop a data model and XML vocabulary to enable collaborative and transactive use of energy. Web services definitions, service definitions consistent with the OASIS SOA Reference Model, and XML vocabularies will be developed as needed for interoperable and standard exchange of:

- Dynamic price information
- Bid information
- Time for use or availability
- Units and quantity to be traded
- Characteristics of what is to be traded
- Deal/Bid/Acceptance confirmations

This work will be done to facilitate interaction with energy markets, including but not limited to:

- Take advantage of lower energy costs by deferring or accelerating usage
- Enable trading of curtailment and generation
- Enable futures markets and specific contracted time of use and provision
- Enable market decisions based on characteristics of energy traded, including but not limited to source (e.g. renewable) and carbon characteristics
- Enable auditing of transactions and characteristics of that which is traded
- Support symmetry of interaction between providers and consumers of energy
- Provide for aggregation of provision, curtailment, and use

The definition of a price and of other market information exchanged depends in part on the market context in which it exists. It is not in scope for this TC to define specifications for markets or for interoperation, but the TC will coordinate with others to ensure that commonly used market and communication models are supported.

The data models and XML vocabularies defined by this TC will address issues in energy markets and the Smart Grid, but may be defined so as to support requirements for other markets.

This work is intended to be usable by the OASIS Energy Interoperation TC and other Smart Grid standardization.

Models and requirements for cybersecurity and privacy will be addressed in the TC's work.

Specific work with which the TC intends to coordinate is listed in Section (2)(a).

(1)(d) A list of deliverables, with projected completion dates.

Projected times are from inception, the date of the initial TC meeting.

Insofar as possible the TC will coordinate its schedules with the OASIS Energy Interoperation TC, UCAIug and other initiatives including those supported by NIST and related regulatory agencies.

TBD

(1)(e) Specification of the IPR Mode under which the TC will operate.

The TC shall operate under RF on Limited Terms.

(1)(f) The anticipated audience or users of the work.

Anticipated users of this work include:

- Implementers of facility agents, embedded controllers, decision management systems, and gateways
- Market makers such as Independent System Operators and Regional Transmission Operators
- Participants in energy markets at all levels (e.g. retail, wholesale, curtailment, and forward/futures energy trading)
- Aggregators of energy provision, curtailment, and use
- Generators
- Energy storage facilities
- Consumers of energy, for acquiring energy in a cost-effective manner consistent with their business and/or personal activities

(1)(g) The language in which the TC shall conduct business.

The TC will use English as the language for conducting its operations.

(2) Non-normative information regarding the startup of the TC:

(2)(a) Identification of similar or applicable work that is being done in other OASIS TCs or by other organizations, why there is a need for another effort in this area and how this proposed TC will be different, and what level of liaison will be pursued with these other organizations.

There are many means for market information exchange of bids and prices, including XML vocabularies. The characteristics of energy, such as source (geothermal, hydroelectric, natural gas generation, hard coal, soft coal generators with stack scrubbers, carbon characteristics) are of present and future interest. Today's energy markets command a premium for renewable energy, but no means of consistently tagging energy with its source or characteristics.

The intention of this work is to define data models and vocabularies that express critical needs for energy market information exchange, and may permit extensibility to similar markets in the future.

We believe that close coordination and balancing among the full range of stakeholders is essential to ensure that a single, technology independent requirements specification and abstract information model can be developed that can be implemented by the OASIS TC and any other entities that may develop non-XML profiles, thus assuring interoperation at the model level in the future.

The utilities, Independent System Operators (ISOs), Regional Transmission Operators (RTOs), energy market makers, and wholesale energy market participants have defined models and XML vocabularies that could support and contribute to this TC's work. We welcome them as stakeholders and contributors.

We anticipate input from technology, policy and business stakeholders and organizations, including but not limited to NIST Domain Expert Working Groups (NIST DEWG) and Task Groups (http://www.nist.gov/smartgrid/), The Federal Energy Regulatory Commission (FERC http://www.ferc.gov), the National Association of Regulatory Utility Commissioners (NARUC http://naruc.org/) and the Electric Power Research Institute (EPRI http://www.epri.com).

The development of open, transactive energy is a goal of the GridWise Architecture Council (http://www.gridwiseac.org/). We expect to engage the members throughout

the lifecycle of the TC, as well as with emerging Smart Grid Architecture efforts from NIST.

The definition of a market is a required context for understanding prices, pricing, and bids. Market definition is outside the scope of this TC; we expect to interact with work developing out of the 2009 GridEcon conference (http://www.gridecon.com/2009/), NIST, and the evolving Smart Grid Framework Roadmap.

European markets have an additional area of interface, between Transmission and Distribution (in American terminology), as these are typically under separate ownership. As time allows, or in a future update, the TC may address those needs as well.

Work on defining business attributes of a service, being developed by the OASIS Service Oriented Architecture End-to-End Resource Planning TC (SOA-EERP TC), may apply to define attributes of energy.

The (proposed, in formation) OASIS WS-Calendaring Technical Committee will be creating an interoperable XML vocabulary and model for time that is applicable to energy pricing and automated building management. We expect to coordinate with that TC when it is formed.

Composability with the WS-Transaction family of OASIS Standards may be beneficial for consistent distributed outcomes, particularly across enterprises with diverse ownership.

Service definitions and the approach of the TC should be consistent with the OASIS Service Oriented Architecture Reference Model (http://www.oasis-open.org/specs/#soa-rmv1.0) and industry practice in that area.

Other work TBD.

(2)(b) The date, time, and location of the first meeting, whether it will be held in person or by phone, and who will sponsor this first meeting. The first meeting of a TC shall occur no less than 30 days after the announcement of its formation in the case of a telephone or other electronic meeting, and no less than 45 days after the announcement of its formation in the case of a face-to-face meeting.

TBD

(2)(c) The projected on-going meeting schedule for the year following the formation of the TC, or until the projected date of the final deliverable, whichever comes first, and who will be expected to sponsor these meetings.

The TC will conduct its business via weekly teleconference calls. The time of the call will be determined during the first meeting of the TC. The TC will conduct face-to-face meetings as needed and determined by the TC. The TC participants will sponsor teleconference facilities and face-to-face meetings.

Under OASIS procedures, a Chair or co-Chairs will be elected at the first meeting.

Time zone difference of participants may require flexibility in meeting times, quorum, and subcommittees (if any).

(2)(d) The names, electronic mail addresses, and membership affiliations of at least Minimum Membership who support this proposal and are committed to the Charter and projected meeting schedule.

Note: need a minimum of 5, of which at least two of which must work for OASIS Organizational Members.

PENDING. Contact wtcox@CoxSoftwareArchitects.com if you are interested in supporting this work.

(2)(e) The name of the Convener who must be an Eligible Person.

TBD

(2)(f) The name of the Member Section with which the TC intends to affiliate

The Energy Market Information Exchange TC intends to affiliate with the OASIS BLUE Member Section.

(2)(g) Optionally, a list of contributions of existing technical work that the proposers anticipate will be made to this TC.

TBD

(2)(h) Optionally, a draft Frequently Asked Questions (FAQ) document regarding the planned scope of the TC, for posting on the TC's website.

TBD

(2)(i) Optionally, a proposed working title and acronym for the specification(s) to be developed by the TC.

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