5.5 Develop Common Specification for Price and Product Definition (PAP 03)

A common specification for price is critical for applications used across the Smart Grid [1]. The price and product specification development is proceeding on a rapid time scale [2]. A draft specification will be ready in April 2010 [3]. This definitive effort is drawing on input from a wide group of stakeholders as well as existing work [4]. It focuses on meeting the immediate needs of utilities and demand response program mandates while building an extensible foundation for a market-based Smart Grid [5].

What

Actions under this plan will result in a common specification for price and product definition [6]. This specification will be used in demand response applications, market transactions, distributed energy resource integration, meter communications, and many other inter-domain communications [7]. Businesses, homes, electric vehicles, and the power grid will benefit from automated and timely communication of energy prices, characteristics, quantities, and related information [8].

Price is a number associated with product characteristics, including delivery schedule, quality (reliability, power quality, source, etc.), and environmental and regulatory characteristics [9]. Price also is a common abstraction for abundance, scarcity, and other market conditions [10]. A common price model will define how to exchange data on energy characteristics, availability, and schedules to support efficient communication of information in any market [11].

Why

Coordination of energy supply and demand requires a common understanding of supply and demand [12]. A simple quotation of price, quantity, and characteristics in a consistent way across markets enables new markets and integration of distributed energy resources [13]. Price and product definition are key to transparent market accounting [14].

A consistent information model will reduce implementation costs [15]. A consistent model for market information exchange simplifies communication flow and improves the quality and efficiency of actions taken by energy providers, distributors, and consumers [16].

Better communication of actionable energy prices facilitates effective dynamic pricing and is necessary for net-zero-energy buildings, supply-demand integration, and other efficiency and sustainability initiatives [17]. Common, up-to-the-moment pricing information is also an enabler of local generation and storage of energy, such as electric-charging and thermal-storage technologies for homes and buildings [18].
Major Plan Objectives

- Develop a summary of power reliability and quality characteristics that affect price and availability (supply side) and desirability (demand side). [19]
- Survey existing price communications and develop harmonized specification (draft specification by April 2010). [20]
- Engage the broad group of stakeholders into the effort. [21]
- Build on existing work in financial energy markets and existing demand response programs. [22]
- Integrate with schedule and interval specifications under development. [23]