

Illinois NextGrid Study
Electricity Markets Working Group

Final Report Outline – revised
August 28, 2018

1. Introduction

- WG5's remit: This working group will consider methods to increase customer access to new technologies and stimulate distribution-level market participation. It will explore market-based platform transactions that the grid can enable and will also study ways to enhance consumer access to Illinois' competitive retail markets.
- Current state of retail in Illinois to provide context – previous successes, price declines relative to counterfactual & better matching of price and cost as a consequence of restructuring 1.0
- Overview of design thinking
- Focus on a functional model of retail markets and not on which entities can or should perform what roles in performing those functions, noting that which entity performs which roles will have an impact on the ultimate cost of the project, because if a utility makes an expenditure, it is guaranteed recovery of that cost through rates, but if a retail supplier or innovator outside of the industry places a bet to create a novel energy market, those entities that are not regulated monopolies aren't guaranteed recovery of their costs.

2. Why Retail Markets?

- Restructuring 1.0 created substantial value and benefits, want to continue that trend in light of subsequent changes in digital technologies and DERs
- Implications for economic growth in Illinois – a modern, efficient electricity industry with choice, opportunities, experimentation and dynamism would contribute to a more dynamic state economy and encourage well-being and economic growth
- Benefits of change must be weighed against the cost of program – the Energy Infrastructure Modernization Act (EIMA) of 2011 set in motion smart grid investments in IL, which is the roll-out of smart meters to virtually all ratepayers, at a cost of \$2.6 billion state-wide
- Consumer-driven focus, enabling equal access and opportunity
- Cost-effective decarbonization – how will cost-effective be defined? This was not a topic of discussion in our working groups, and is inevitably a topic groups would disagree on. Recall the working group discussion on the topic indicated that decarbonization wasn't a primary design principle, and therefore expenditures towards this outcome alone would have a lower threshold of being termed "cost-effective". As a motivation of why we are exploring NextGrid, certainly reduction in reliance on brown power from utilities and from the grid is a possible by-product, but no means a given.

- Technological change is inevitable, and can be quick and unexpected; retail markets can enable adaptation to unknown and changing conditions while retaining resilience and access requirements

3. Background and Relevant Literature

- Definitions – wholesale/retail, centralized/decentralized/distributed, etc.
- Consumer information, consumer behavior
- Transactive energy
- Platforms
- Summarize working group discussions and highlight insights from the literature relevant to our remit

4. Market Functionality Requirements and Design Principles

- Define and discuss
- Summarize working group discussions

5. Conclusion: Guidance to the Commission

- Start with a vision, an idealized proposition of desired outcomes, one of which is an expanded domain of value creation for and by customers via retail markets
- Develop a roadmap, which will happen incrementally, with specified high-level endpoints that correspond to the vision
- Develop functionality requirements and design principles based on those explored here
- Evaluate those functionality requirements and design principles with a view toward optionality – do not settle on “the answer” too early in the roadmap process
- Conduct a cost/benefit analysis of the incremental steps on the roadmap, and of the overall roadmap end goal, in order to inform the Commission of the net benefits to customers
- From these inputs, develop a draft market design
- Testing and learning: apply lessons from other states and countries and their successes and mistakes in retail market design
- Testing and learning: use computer simulation, agent-based models, and laboratory experiments to test and refine the draft market design