

RENEWABLE ENERGY BUYER ORGANIZED WHOLESALE MARKET DESIGN PRINCIPLES



Renewable Energy Buyer

Organized Wholesale Market Design Principles

BACKGROUND ON THE CLEAN ENERGY BUYERS ASSOCIATION

Commercial and industrial customers collectively use over half of the electricity generated in the U.S. and are driving significant demand for clean energy as more and more large energy customers of all sectors and sizes set ambitious goals to use clean or renewable energy to power their operations and facilities.ⁱ Roughly half of the Fortune 500 have climate and clean energy goals and over 250 businesses have committed to using 100% renewable energy.ⁱⁱ In 2019, corporate buyers announced new renewable energy contracts equal to 80% of all wind and solar installed in the U.S. in 2019 and have collectively deployed over 23 gigawatts (GW) of new renewable energy – equivalent to over 71 million solar photovoltaic panelsⁱⁱⁱ – over the last 5 years.^{iv} Fortune 1000 companies may represent as much as 85 GW of renewable energy demand through 2030.^v

Vision: The Clean Energy Buyers Association (CEBA) is a membership association for energy customers seeking to procure clean energy across the U.S. Today, our membership of nearly 300 includes stakeholders from across the commercial and industrial sector, non-profit organizations, as well as energy providers and service providers.^{vi} Our aspiration is to achieve a 90% carbon-free U.S. electricity system by 2030 and to cultivate a global community of energy customers driving clean energy.^{vii} Deep decarbonization can unleash incredible economic growth and opportunity, and well-designed and well-implemented organized wholesale markets are a critical lever in achieving this vision.

Approach: Organized wholesale electricity markets are fundamental to advancing CEBA’s vision and goals. By leveraging the power of wholesale competition, organized wholesale markets produce billions in customer savings annually and they are critical to efficient decarbonization and clean energy integration.^{viii}

BENEFITS OF ORGANIZED WHOLESALE MARKETS

Well-designed and well-implemented organized wholesale markets provide significant customer, societal and environmental benefits:

1. **Cost.** Wholesale markets unlock significant efficiencies and operational benefits, from improved resource capacity factors,^{ix} reduced reserve margins,^x dispatch across a broader footprint,^{xi} regional transmission planning,^{xii} and least-cost dispatch.^{xiii} These efficiency improvements provide significant savings to all customers, and because clean energy resources are better utilized over broader geographies and are increasingly the most affordable sources of electricity generation, they also result in greenhouse gas reduction.^{xiv}
2. **Reliability.** Wholesale markets centralize dispatch over larger regionalized balancing areas, which gives grid operators control over a more diverse resource mix to call upon to manage supply and demand.^{xv} Market operators also can use cutting-edge tools to improve grid reliability and operational flexibility.^{xvi} Together, these features are particularly valuable to cost-

effectively maintain reliability while optimizing and integrating^{xvii} significant amounts of clean, variable resources like wind and solar energy.

3. **Innovation.** Wholesale markets create competitive pressure upon firms to constantly innovate, iterate, and improve offerings. A drive to innovate has the potential to unleash clean energy solutions and accelerate the transformative change occurring in the electricity sector from demand response,^{xviii} energy storage,^{xix} and distributed energy resources.^{xx} Innovation ultimately lowers customer costs while supporting more rapid and cost-effective decarbonization.^{xxi}
4. **Customer Options.** Wholesale markets enable generation competition and greater clean energy integration, which translates to more options to meet customers' preference for clean energy. Roughly 80% of bilateral corporate power purchase agreements to date have occurred in organized wholesale markets, because they directly facilitate power purchase agreements to meet their clean energy goals.^{xxii} Additionally, by enabling faster integration of clean energy, organized markets can also increase customers' overall consumption of clean energy. A recent Clean Energy Buyers Institute commissioned study conducted by The Brattle Group supports that organized wholesale electricity markets facilitate customer options, reduce costs, and improve renewable energy integration.^{xxiii}

Organized wholesale markets can only deliver these benefits and decarbonization progress when they are well-designed and well-implemented.

As discussions continue about expanding the footprint of organized wholesale markets because of their broad benefits, a set of foundational principles should guide the development and improvement of organized wholesale markets.¹

CEBA supports ultimately instituting [organized wholesale markets](#) in all regions of the country, designed and implemented consistent with the principles outlined below, operated by an Independent System Operator/Regional Transmission Organization.

¹ These principles have been crafted with respect only to organized wholesale electricity markets. This document should not be read to extend more broadly, or as a general guide to state policymaking or action by federal agencies.

BUYERS' PRINCIPLES ON WHOLESALE MARKET DESIGN

I. UNLOCK WHOLESALE MARKET COMPETITION TO CATALYZE CLEAN ENERGY

Well-designed and well-implemented organized wholesale markets catalyze clean energy resources. And those markets work best when founded on competitive forces, which include ensuring:

1. **An open and level playing field.** All generation, storage, demand, and other resources should be permitted to provide all services they are technically capable of providing. Decision-makers and market operators should pave the way for innovative resources to participate by removing any artificial or legacy barriers that limit resource participation.

Organized markets should:

- Utilize centralized regional markets with efficient, least-cost dispatch.
- Remove barriers to entry by taking full account of all the capabilities and system benefits that supply and demand resources provide.
- Guard against undue discrimination and preference by procuring on the basis of technology neutral services rather than particular resource attributes.
- Ensure the services the markets procure are defined to be resource inclusive rather than merely designed around operational characteristics of legacy resources.

2. **A role for demand participation.** Customer demand is neither immovable nor inflexible. Meaningful avenues for demand to participate, as well as incentives for responsiveness to the time and geographic-specific costs of electricity use, can reduce system costs for customers and incentivize efficient and emission-reducing investments. This includes ensuring a level playing field for resources such as demand response and allowing behind-the-meter resources to meaningfully engage in wholesale markets, which can provide substantial reliability, environmental, and cost-savings benefits. In addition to the opportunity to engage and receive compensation, cost of entry should be considered and mitigated commensurate with the benefits received from these resources. Large interconnection, transmission, or other costs can limit the ability for resources to engage.

- Efforts, like the Federal Energy Regulatory Commission (FERC) Order 745 that requires grid operators to compensate demand response at prices commensurate to other resources, should be taken to encourage demand participation beyond demand response as currently structured.
- Efforts to support innovative technologies, such as FERC Order 841 and Order 2222, which are designed to provide participation pathways for energy storage and distributed energy resources respectively, should be encouraged.

3. **Services that provide actual value to customers.** Customers should only pay for services that provide value. Organized wholesale market design should be based on market pricing, cost causation, and supply and demand principles, which allow a market price for services needed by demand.
 - Market-based mechanisms should be favored over administratively crafted ones.
 - Market design should be flexible enough to anticipate future needs, not to encase legacy resources, technologies, and system practices.

II. SAFEGUARD MARKET INTEGRITY

Markets best deliver durable benefits when rules, operation, and governance are conducted clearly, consistently, and fairly. This is achieved through:

4. **Independent and responsive grid governance, management, and operation.** Governance structures should ensure that grid operators are independent and incentivized to achieve reliable, cost-effective delivery of energy services without favoring or discriminating against particular resources or stakeholders.
 - The behavior of market participants should be monitored to ensure competitive outcomes. Regional markets should employ professional independent market monitors, providing an extra level of protection to market participants and consumers that is not replicated elsewhere. Monitoring provides all stakeholders and consumers with confidence that market participants are acting in compliance with market rules.
 - An independent system operator should conduct all market operation functions.
 - FERC should conduct regular audit and governance reviews.
 - Market operators should guard against market power, market manipulation, unnecessary over-procurement, and double payment.
5. **Transparency.** Transparency improves decision-making processes for all stakeholders and should thus be prioritized. Market participants, stakeholders, and interested parties should be provided the robust availability and access to data, key personnel, and decision-making processes that Regional Transmission Organizations are capable of providing.
 - Transparent, liquid nodal energy prices should be utilized to support price transparency and are critical to enabling large customers to directly contract for the purchase of renewable energy through corporate power purchase agreements. Transparent nodal prices are not a feature in vertically integrated markets and thus comparatively makes it more difficult for customers to contract for clean energy.
6. **Broad stakeholder engagement and representation.** Careful attention should be paid to ensure that governance provides all participants, including customers, with robust pathways to meaningfully participate in decision-making and the stakeholder process.
 - No one firm or sector should have the ability to exert outsized votes or roles in the stakeholder process.

- End-use customers should be ensured access, a stake, and a role commensurate to that provided to other stakeholders.

III. DESIGN TO SCALE TO THE FUTURE

Markets should be designed with recognition that the grid, resource mix, and suite of technologies available are rapidly evolving. Market design should be constructed in recognition of the increasingly flexible, decentralized, and clean energy generation of the future, built to secure:

7. **Largest efficient operational scale available.** Because markets function more efficiently on larger scales, single larger geographic market footprints are preferred over multiple smaller ones. An independent operator should provide organized wholesale electricity services through competitive organized markets and oversee transmission operation and planning.
 - Markets should be organized and operated regionally in every section of the country. Because large regional markets leverage larger power pools with multiple and varied generation and demand response, single operator dispatch, and market-based rates, they generally improve cost, reliability, resource variability, and greater renewable energy integration, as well as improved operational outcomes.
 - Markets should leverage large regional scope, fair rules, transparent prices, and non-discriminatory dispatch to attract renewable resources, storage, and other clean energy resources to meet demand efficiently and to unlock a wider set of options for state and federal policymakers to achieve decarbonization goals.
 - A region-wide grid operator should also conduct region-wide transmission planning that incentivizes new and upgraded transmission to allow low-cost renewables access to customers and reduce both congestion and curtailment.
 - The organization should also provide coordinated planning of the bulk power transmission system, to find efficiencies in transmission access across a broader region and avoid unnecessary and duplicate investments that occur when utilities plan and operate independent of one another.
8. **Options for customers.** Markets should have mechanisms that permit customers to meet decarbonization commitments and facilitate efficient bilateral contracting.
 - Market structures should provide efficient products and pricing that support end-users seeking to rapidly decarbonize their energy usage.
 - Market structures should support orderly long-term bilateral contracting.
 - Markets should support a low transaction cost environment.
9. **Respect for federal and state public policy.** Markets should facilitate and harmonize with other federal and state policy choices.
 - How decisions should be evaluated by state and other federal entities is outside the scope of these principles. However, state and federal policies should be respected to the extent that those decisions interact with organized wholesale markets.

10. Predictable investment decisions. Market rules should be designed with durability and predictability in mind. Market rules may need updating over time, but changes should be minimized and avoided without a clear showing of need.

- When administrative interventions are necessary, they should be crafted to emulate competitive mechanisms to the extent possible.
- When market interventions are necessary, they should be crafted with a goal of minimizing the potential for future market interventions.
- Market rules should be implementable, clear, consistent, and durable.
- Market rules should be readily available and understandable by all stakeholders and market participants, including customers.
- Market design should not be modified due to price volatility alone.

Further Reading

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End Notes

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