The Future of Electricity Markets

Can we Escape the electricity market's bureaucratic regulation obsession?

- Can we prevent energy crises and blackouts in the future?
- Could we change a natural monopoly into an oligopoly?
- What have we learned from the Texas Blackout of 2021?

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Supplying electricity is a core responsibility of public officials and is often advertised as a primary humanitarian agenda for all policymakers. However, the design of the U.S. electricity market reveals how monopolized markets can deplete aspirations for a better future for today's profits. A natural monopoly is acceptable until unnatural divergence of incentive creates inescapable social disruptions.

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Most electricity utilities are regulated and vertically integrated in southeastern and western United States. Owning generators and power line infrastructure, utilities in these parts of the U.S. participate in wholesale bilateral electricity trading with other FERC-regulated utilities. U.S. states outside the southeast and west promote deregulation for competitive pricing and independent energy suppliers who own generators.

For consumers, the state they live in will determine how regulated their electric markets are. Customers living in a regulated region will get their power only from regulated utilities in their area.

To prevent overcharging, the state's public utility commission approves utility rate requirements and pricing methods. If a regulated utility wants to develop power plants, it must demonstrate necessity through an integrated resource planning(IRP) process that the state commission approves. Nevertheless, the jurisdiction of retail electricity pricing does not fall under the regulated state's consumer judgment.

Arguments could be made that the state is the biggest electricity consumer giving them the right to process price approvals. However, individual consumers drive the funding for the political and social agenda so they should have a right to consumer choice within competitively priced markets.

Regulated utilities can trade electricity at wholesale prices with other regulated utilities, possibly in other states, if they find cheaper options.

However, their retail pricing is set based on the decision of the utility's residential state commission. Regulated utilities are allowed to trade for more affordable resources, while their consumers cannot compare prices. A big issue of regulated markets is how easy it is for utilities to recover costs through rates even when their power plants perform poorly. Customers bear a lot of risk of state energy investment in regulated markets. However, this doesn't necessarily mean that deregulated markets in the U.S. are much better.

The structural design of deregulated electricity markets in the U.S. contains intermingled restrictions that prevent authentic competitive price action. During the period of restructuring in the 1990s, electric utilities were required to sell their generating assets, which led to independent energy suppliers that owned generators. They were not required to sell their distribution and transmission systems.

The most important part of the electricity market is the distribution and transmission system because no one gets electricity without it. The suppliers who bought the generators did not have a cost-effective strategy to implement their own distribution infrastructure.

The big restructuring of the electric markets of the 90s was essentially a forced sale of regulated utilities' conditional assets to suppliers that didn't have the necessary equipment to capitalize on their investment. At least in the deregulated markets, there is competitive pricing where energy suppliers may benefit.

Should we plan for energy investment using an IRP or real-time market price signals? Deregulated markets contain multiple players, where energy generators supply power to load-serving entities like grid operators or energy service companies who sell electricity directly to consumers at retail prices. Consumers can now compare prices, contract structures, and service quality among energy retailers.

Consumers in deregulated markets can purchase renewable energy services that are currently less available in regulated markets but continue to grow.

A significant benefit of the deregulated markets is the risk of power investment isn't on the consumers since suppliers are responsible for their revenue strategies and can't enforce a uniform rate on poorly performing plants to recover costs.

With that being said, there are a lot of downsides to the deregulated markets. There isn't a consumer choice for utilities' distribution and transmission systems. Notably, consumers can only choose a retailer based on energy generation, which is only a small part of their electricity bill.

Without Federal oversight to ensure compliance with pricing mandates, RTO/ISO's can easily perform Enron-style electricity withholdings while price gouging its consumers. States such as Illinois and Connecticut have accused many power sellers of price-gauging in the past, but the FERC isn't interested in protecting consumer rights as much as they are interested in charging *market-based* rates.

There are pros and cons of the deregulated and regulated electricity markets in the U.S., and it's difficult to prove which one is better. It is 2023, and renewable energy is becoming more flexible, integrable, and cost-efficient. Electricity markets in the U.S. should be required to integrate more renewable energy into their systems, but the market's monopolization is preventing them from changing.

Suppose we were to undergo a second restructuring where we require utilities who own power-line infrastructure to set up limited partnerships with retailers and suppliers. Could there be a new system where the current market monopoly becomes an oligopoly?

Having more competitors in the wholesale market will decentralize its current pricing model. Under the regulated system, the same company controls wholesale and retail markets, which is a breeding ground for corruption.

There isn't much oversight over wholesale market pricing in the deregulated markets. No doubt having a uniform utility managing power generation and transmission is the more reliable route in terms of power system implementation since planning decisions are made by a small group of non-competing organizations. After California faced an energy Crisis in 2001, many states feared deregulation.

The Texas blackout of 2021 has taught us that power suppliers' are mainly concerned with providing the "cheapest" energy and lowering maintenance costs. These two things produce unreliable energy supply infrastructures making the state susceptible to blackouts. Unfortunately, we are faced with an inescapable trade-off between reliability and flexibility. We may be vulnerable to unreliable energy supply infrastructures if we want flexibility in renewable energy sources and pricing options.

A regulated market with deep political agendas won't consider the consumer's judgment as an essential criterion for market efficiency but you may end up with a more reliable system. At least historically, regulated markets faced fewer energy crises. Policymakers respond to cheap infrastructure by adding more market mechanisms to incentivize adherence. Still, it's hard to use forced compliance in deregulated markets where incentives to elude administrative rules are part of the culture.

Overall, the thirst for profits is unquenchable regardless of the regulation status of the electricity markets in the U.S. As stated by Economic sociologist Georg

Rillinger, "Even in an ideal electricity market, reliability is an elusive and precarious byproduct of companies' search for profits." Moving forward, an oligopoly of regulated and unregulated utilities working together to integrate renewable energy and individual consumer interest while creating a reliable, maintainable, and less political electricity market design would be a start toward improvement.

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