



Bitcoin Mining, Megawatts and the Making of Rates

SUMMARY: While Chelan County PUD ponders whether to charge bitcoin miners and other high-density load customers a higher rate than more traditional users of electricity, the bitcoin industry is dealing with some problems of its own—an indication that disruptive industries aren't immune to disruption. That doesn't keep them from disrupting the utility industry, but this isn't the first time. High-density loads were also an issue in 2000, but back then they were associated with the dot-com industry.

According to a recent [article](#) posted on *The Verge*, “Bitcoin’s nightmare scenario has come to pass,” and the network’s “capacity to process transactions has maxed out.” This has resulted in a competition between two bitcoin codes and a debate over whether bitcoin blocks should be increased in size.

The March 2 article, by Ben Popper, concludes that “Many in the U.S. Bitcoin community had hoped that hitting this crisis point—a network maxed out, transactions faltering—would result in closure, with miners quickly moving to adopt whichever chain proved more valuable to their economic interests. But so far the debate is dragging on without one side claiming a clear victory, leaving tens of thousands of consumer transactions stranded in limbo.”

Oh no! Just as Chelan is getting close to a decision on how to treat it, the fledgling bitcoin industry could be in crisis! I guess disruptive industries aren't immune to disruption. In the meantime, however, bitcoin mining—and other high-density load endeavors, such as data centers and indoor cannabis farms—have the potential to disrupt the utility industry, if they haven't done so already.

An example is Chelan County PUD, which has been struggling for more than a year to decide whether these new high-density loads, with their sudden and intense pressure on system infrastructure and electricity demand, ought to be covered by a specific rate class that reflects the extra expenses the utility incurs in serving them.

At this point, the PUD, like most utilities, spreads out these costs of service and doesn't necessarily charge a particular class for all of its specific costs. Chelan is also in a somewhat special position, in that it has set a specific goal to use the public power benefits that the PUD's hydro generation assets provide to the county for “the best, for the most, for the longest”—to carry the county's “legacy of care for the common good forward for future generations,” as its strategic plan says. That means if high-density loads are causing ill effects on other customers or the PUD territory's overall quality of life, they can be called out for it. Investor-owned utilities and other publics with different asset and resource mixes may not have as much flexibility as Chelan in dealing with this issue.

But that didn't keep them from trying in the past. In fact, back in 2000, both Puget Sound Energy and Seattle City Light seriously considered implementing special rates for high-density loads. Coverage from that time sounds eerily familiar today. Here's an excerpt from an article I wrote for our Aug. 28, 2000, issue of *Clearing Up* (CU No. 944 [14]):

In response to “sudden inquiries from prospective customers all planning similar ventures,” PSE has developed a proposed tariff that charges this new, unique class of customers a market-based electric rate and requires advance payment for any new facilities PSE would have to build to meet either the customer's increased load or its reliability requirements . . . The proposed Schedule 300 . . . would apply to new large single loads that use 10 to 20 times more electricity per square foot than other customers occupying similar structures. Such customers are primarily hi-tech companies, such as internet service providers, with facilities full of computer servers that run 24 hours a day, requiring constant air conditioning and exceptional power reliability . . . As PSE's tariff filing indicates, “service to such

customers was not contemplated by the region or the company in its least-cost resource planning efforts. For this reason, the attached tariffs have been developed to integrate these loads in a manner that benefits these and all other customers.”

Part of PSE’s concern, the tariff filing continues, is that while these firms expect to thrive, “these Customers are in highly competitive, technology-driven ventures, which may not prove to be successful. These customers require infrastructure investments to meet their unique, energy intensive loads. In the absence of the protections provided in this filing, other classes of customers would be put at economic risk due to the potential for ‘stranded’ facilities and energy supply commitments in the event that the customers’ ventures do not prove successful.”

PSE’s tariff would have applied to customers with loads of more than 50 watts per square foot or 2 MW; Chelan’s current proposal applies to loads of 250 kWh per square foot or more. Seattle City Light also proposed a large-load rate schedule in 2000. In October of that year, the muni received City Council approval for a proposed tariff that grandfathered existing loads but required new customers to pay in advance for system infrastructure improvements City Light would have to make to provide them with service (CU No. 951 [10]). Electricity commodity rates would be individually negotiated, and the new rate schedule applied to new customers who had used 10 aMW of power per month for 12 consecutive months.

PSE ended up pulling its tariff proposal less than two months after filing it, saying it would “pursue more expeditious resolution of the issues” with potential customers, and then file a revised tariff. That never happened; and City Light had few takers for the new rate—probably because both utilities came up with their tariffs at about the same time as the dot-com bubble burst. The region also became embroiled in the infamous Western electricity crisis of 2000-2001, so PSE, City Light and the rest of the region’s utilities had more important issues to deal with than how best to serve a group of customers that was quickly diminishing in size.

The problems facing Northwest utilities today are nowhere near as grave as those of the Western electricity crisis; and since the collapse of the (first?) dot-com bubble, server farms have become important and welcome customers, as well as more efficient users of electricity.

Still, it’s interesting to note how descriptions of those server farms mirror what’s been said recently about bitcoin-mining operations. Again, from a 2000 *Clearing Up* article (CU No. 948 [20]): Seattle City Light officials refer to them as internet hotels . . . “They’re the companies that host the dotcoms,” one source explained, renting their hundreds of server computers to a variety of clients that rely on the internet.

“This is all incredibly attractive to developers, who are looking at buying up buildings to use as sites for these things,” the source added. An old warehouse that might otherwise have been suitable for grocery storage, for example, can be remodeled to serve as a data warehouse instead.

And more than 15 years later, the issues associated with serving new, unfamiliar types of loads remain the same: Questions are also being raised about whether such customers are covered by the utility’s traditional obligation to serve. While it’s usually interpreted to mean providing electricity to all who request such service, what happens when a customer requests amounts of electricity beyond the utility’s current ability to provide? Does the obligation to serve cover only basic uses of electricity, or all uses? And who makes that determination?

We’re still trying to come up with the answers. [*Jude Noland*].