**Lancium Firm Load Whitepaper**

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To the Large Flexible Load Task Force (LFLTF):

Lancium, Inc., is an energy technology and infrastructure company headquartered in Texas. Our company builds and operates data centers that host large-scale Bitcoin mining and other energy-intensive, interruptible computing applications. The following represents our company’s view on several key topics on the LFLTF’s issues list.

**Background**

In recent months, there has been considerable discussion concerning the impact of new, large loads on Texas’ power grid. Because the loads associated with Bitcoin mining and certain other computing applications can be adjusted to support the stability of the power grid, the Texas Public Utilities Commission (PUC), Electric Reliability Council of Texas (ERCOT), utilities, and the stakeholder community are faced with a number of questions, including how best to define these loads as either “flexible” or “firm.”

Historically, ERCOT has treated all loads as firm. While large, traditional datacenters are typically reticent to curtail their operations, Bitcoin miners are willing to do so to a) minimize their costs and b) assist ERCOT by returning electricity to the grid during times of scarcity. The ability of Bitcoin miners to respond to dispatch instructions may impact various policies and procedures at ERCOT.

**Transmission Planning, Operational Schemes, and Interconnections**

The large loads moving to Texas create valuable economic activity for the state and the communities in which they are located. To continue to ensure affordable, reliable electricity remains available the current transmission system should be enhanced to accommodate this new demand. However, adopted policies should consider:

* Because upgrades to the transmission system upgrades can take years, doing so may not be feasible on the desired timeline.
* Therefore, in the near-term, the load may not be able to consume as much power as they would otherwise desire.
* During this initial window, ERCOT should consider remedial action schemes, congestion management plans, or, a new mechanism that achieves similar outcomes to get “command and control” over these new loads on an opt-in basis.
* For example, a load may be willing to opt-in to ERCOT control if it means a local contingency can be managed with redispatch of the load if the contingency actually occurs.
* Each of these operational mechanisms would have a clear exit plan identified in the interconnection study. This “carrot” approach to ERCOT resource registration may be attractive to many new loads.
* To the extent ERCOT has specific concerns about the structure of remedial action schemes, a new mechanism can be created in the nodal operating guides that targets this specific circumstance.

**Load Shed Obligations**

Following the passage of SB3, ERCOT and the PUC have an obligation to assist transmission operators in rehearsing load shed obligations on an annual basis. Each utility’s load shed obligation is based on peak loads from the prior year. As such, whether or not a flexible load responds to 4CP can have a significant impact on load shed planning.

While generally large flexible loads are incentivized to curtail during peak loads, they may not always do so. Failing to do so could have a significant impact on a year-over-year basis on the transmission operator and distribution utility. To help address this we recommend:

* ERCOT implement a voluntary program where loads that agree to be curtailed during emergency conditions for no compensation. These load amounts could be subtracted from peak loads used to update the ERCOT Load Shed Table.
* ERCOT and utilities should determine best practices through the LFLTF.
* Loads be required to monitor for EEA conditions, system frequency, or have a QSE that can receive dispatch instructions from ERCOT with a 24x7 hotline. This method would allow these loads to reduce year-over-year uncertainty on shifting load shed table obligations or load shed plans.

While other industrial loads may never want to curtail operations, by voluntarily doing so, flexible loads may be able to protect distribution customers and other large industrial loads.

**CDR/SARA**

The CDR and SARA are used by policymakers to get a general sense of expectations for upcoming years and seasons. This creates a regular opportunity for the press to “check in” on the health of the ERCOT grid.

These reports are inherently uncertain because they discuss the future. However, ERCOT can assume that the quantity of load that is carrying ancillary services will be offline if ERCOT needs it to be, and also loads what price they plan to be offline at. These surveys can be used until historic data is available. When using past performance for forward projections, the analysis should account for prices; if the prices over peak have been historically low, then they may not reflect what a load will do at high prices.

**Operational forecasts**

ERCOT’s short- and medium-term forecasts impact decisions around RUC as well as the need for additional ancillary services. Today, the RUC engine considers additional energy from a committed to be essentially “free.” As such, the RUC engine uses the available energy from committed generation before it considers committing an additional generator.

We believe this process should continue; however, we recommend an additional future consideration:

* At what price will a load come offline instead of a generator coming online? For example, if the actual costs of a generator are $50 and the opportunity cost to curtail for a large flexible load is $200, then it is economically optimal to commit additional generation to serve the load. To accommodate this, the RUC engine should consider bids to buy from Controllable Load Resources.