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COMMISSION PROCEEDING TO ENSURE §
RESOURCE ADEQUACY IN TEXAS §
§

PUBLIC UTILITY COMMISSION
OF TEXAS

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CITIGROUP ENERGY INC COMMENTS FOR WORKSHOP

Citigroup Energy Inc. ("CEI") is a Delaware corporation with its principal place of business in Houston, Texas. CEI registered as a power marketer in Texas on July 13, 2005, pursuant to P.U.C. Subst. R. 25.105, and updated its registration on September 8, 2009, April 11, 2012 and May 24, 2012. CEI does not own or operate any electric facilities. CEI is a direct, wholly-owned subsidiary of Citigroup Inc. (Citigroup).

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I. SUMMARY OF COMMENTS

CEI appreciates the opportunity to discuss good market design for the ERCOT market. Fundamentally, CEI does not take a position which market design ERCOT must have – an energy only market or a capacity market can both achieve resource adequacy if allowed to send proper price signals. An energy-only market must have significant opportunity for elastic demand response to high spot market prices to value energy when it is scarce. A capacity market must allow a generator to recover its full costs if the generator's capacity is required. As such, CEI believes that the details and incentive structures of the market design matter more than the broad scope of a particular market

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construct. However, CEI will propose an alternative market design that may meet the Commission's objectives in this filing. In doing so, CEI will provide its view on how energy and capacity markets should (and shouldn't) be structured.

II. THE TEXAS DILEMMA

CEI appreciates the dilemma currently facing the State of Texas and the Public Utility Commission. Texas' economy is growing and will continue to do so as immigration increases and productivity is improved. Industrial facilities responding to high crude prices and low natural gas prices are helping to drive investment and job growth that will keep Texas' economic outlook bright. Electric reliability is an essential component of the robust economic picture in Texas, but comes at a cost. When seen as a commodity input into Texas' economic engine, rising energy costs can slow growth of the Texas industrial sector, despite other low commodity prices, such as natural gas. Simply put, energy costs that are too high can put the brakes on the Texas economic growth. To achieve this balance of cost and reliability, CEI recommends that the Commission maintain the energy market as the primary incentive for generation investment – but provide a backstop against extremely low reliability outcomes by having a capacity market that clears below the target reserve margin. For example, ERCOT may determine that a one in ten year standard requires a 14% margin, but then only clear a capacity market at 11% or 12% - thus only giving value to a centralized capacity market if the reserve margin drops too low. Otherwise, the energy market will provide an economic equilibrium where willing buyers and willing sellers meet.

An energy market with a capacity market backstop has several advantages. First and foremost, it preserves the incentives that the Commission has stated a preference for in the past, such as scarcity pricing. A capacity market on its own may be unlikely to frequently send scarcity pricing signals – because it is intended to provide sufficient capacity. Secondly, the backstop capacity market won't damage these incentives – the cost of being short will still be very high. The backstop capacity market will protect the State, however. If unexpected market conditions lead to a lower reserve margin than is

tenable, then the pre-established capacity market can step in to save the day. With a well-designed energy market *and* a well-designed capacity market, the Commission has the rare opportunity to have its cake and eat it too.

III. A WELL-DESIGNED ENERGY MARKET

A well-designed energy market must have scarcity prices set by consumers' willingness to curtail power, reliability commitments and decisions integrated with incentive aligned outcomes, and sufficient opportunities for prices to solve reliability problems before ERCOT needs to take action.

The potential for high energy prices set by loads or the cost of reserves create a natural incentive to hedge power. Although somewhat hindered by the short-term nature of the retail market, an energy market that allows demand response to be active in price formation will lead to more rational outcomes for generation investment. Generation owners will fear the cost of being short and hedge against the risk of outages. Consumers will make decisions on when and how to consume power. This critical component of an energy market is simply missing from today's market design and the energy-only market won't work without it. Of course, substitutes can be found, like demand curves, power balance penalty curves, and the like, but these alternatives can work against the efficiency objectives of the energy-only market.

CEI strongly urges the Commission to take every rational action to increase the quantity of price responsive demand and transition existing demand response to be price responsive in the near term. To do this, the Commission should more closely integrate ERS, Load Resources, energy efficiency demand management programs, and advanced metering infrastructure into the energy market. ERS, Load Resources, and energy efficiency programs could be turned into "must offer" programs that lead to economic deployment instead of reliability deployment. To even more rapidly expand demand response, the Commission can convert ERS into something like a demand response portfolio standard to be fulfilled either directly by the load serving entity or through some sort of tradable option contract that could be fulfilled by curtailment service providers. Advanced meters could be better integrated by allowing utilities with advanced meter

infrastructure to provide HAN gateway devices to customers who request them, bringing the total cost of deployment for retail electric providers down by perhaps one third. A gateway device is a piece of equipment that allows smart appliances and thermostats to communicate over the Internet instead of the AMS communication system. The wide availability of these devices would demonstrate the clear value of smart meters to consumers that is already apparent to policymakers. Gateways would also allow retailers to monitor the aggregate usage of their customers in real-time, leading to more efficient procurement and energy management. Finally, the Commission should significantly raise the offer caps to further encourage demand response. Higher offer caps will incent demand with higher values of lost load to participate in the energy market. The Commission should specifically explore what options exist to rapidly expand economic demand response in the near term.

In a well-designed energy market, the cost of committing generation should be reflected in the price of energy. The best way to do this is with look-ahead SCED. Look-ahead SCED will commit generation based on price, and is an important component of the energy market design. However, ERCOT's current implementation of price forecasting to facilitate the development of a commitment is currently fundamentally flawed, leading to consistent errors. ERCOT simply cannot use the existing price forecast to commit generation without significant testing and development. ERCOT needs this testing to be fully integrated with generation assets, similarly to how ERCOT tested the nodal market go-live. If the look-ahead technique was working well and replaced the non-spin reliability commitment process, ERCOT could commit generation *and* reflect the cost of that commitment in the energy price – avoiding the inefficient pricing outcomes that exist today.

IV. A WELL-DESIGNED CAPACITY MARKET

Fortunately, the Commission and its staff already know many of the specifics of a well-designed energy market. Good design for a capacity market may be more obscure. Generally, CEI recommends that ERCOT have as few administrative mechanisms as possible in any future capacity market. As an organizing principle, the Commission should rely on market forces to the greatest extent it can in a capacity market. When

well-designed, a capacity market is the most efficient way to procure more capacity to meet an objective. Key components of a capacity market include looking several years ahead of the current year, centralized auctions, and transparent price signals.

A centralized capacity market should avoid an administratively determined cost of new entry (CONE) and demand curve. Administratively determined CONEs and demand curve only invite useless litigation and delay. CONEs in other markets can create reference prices and demand curves allow the purchase of additional capacity at declining prices. A better methodology is to only buy as much capacity as is required (as is done for ancillary services) and to allow market forces to determine the marginal cost of an additional MW of capacity. For example, if ERCOT determines that 72,000 MW of capacity are required to meet a particular reserve margin minimum, then ERCOT would only pay for the cheapest capacity to meet that threshold and not pay for any capacity above that. Why buy something you don't need? Megawatts available from additional generators may remain despite a capacity payment to cover outage risk or because the opportunity cost of mothballing is too great for some other reason. The clearing price of capacity should be determined by the missing money estimations for each generator. For example, a potentially new generator would bid the difference between expected energy revenue and the annualized cost of their own new entry. An existing generator that is old or outdated could bid the desired revenue they would require to remain in the market to determine if mothballing is economic or could bid the cost of upgrading capacity to meet environmental requirements or add additional megawatts on the margin. Meanwhile, generators that expect to be in the money from the energy market would bid zero into the capacity market because no additional revenue is required. Arranged in merit order, the cost of meeting the reserve margin could be efficiently determined in a centralized way, leading to the lowest overall cost for the Texas' desired level of reliability.

In addition to these market-friendly measures, a capacity market will create some additional headaches to overcome. First and foremost, there will be market power possibilities that will need to be monitored – both on the buy side and the sell side. Verifiable cost methodologies and bid component disclosures will need to be developed. This shouldn't be an opportunity to pay less than the full costs for generators, but it may be required to deal with market power opportunities. Buyers could also have the

opportunity to influence market outcomes by requiring PPA holders to bid zero into the capacity market to reduce the price of capacity. This will need to be avoided through a well thought-out minimum offer price rule.

These modifications may seem to preclude merely copying the PJM market design. This is true (and perhaps desirable) – but many of the core concepts are the same. CEI is merely highlighting where there is room for improvement. After all, this is Texas. Why not do it better?

Finally, in any capacity market or similar “energy plus” market, CEI urges the Commission to set a policy of rewarding good behavior. In today’s uncertain market, many loads and load serving entities are purchasing power to cover risk for the next several years. These decisions should be rewarded, and those who have purchased physical power shouldn’t risk an additional capacity cost or load obligation cost of some form. We request that the Commission recognize this as it develops rules around market design in the future.

V. SYNTHESIZING ENERGY AND CAPACITY MARKETS

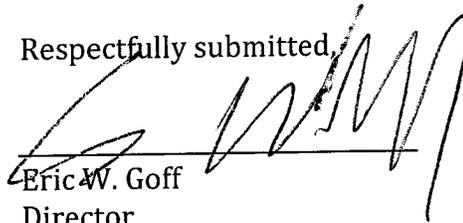
As mentioned above, CEI believes that ERCOT and the PUCT can maintain all of the advantages of the energy-only market while still have the protection of a capacity market against the potential for extremely low reliability. We recommend that the Commission explore this option if it considers other alternatives as part of a compromise, such as a load obligation of some form. If well done, this approach will continue to allow the energy market to find economic equilibrium. If market conditions shift, then the capacity market can procure needed capacity to meet demand. Low reserve margins that would trigger a capacity market-clearing price above zero could also create the conditions for scarcity pricing, so the missing money in these situations that would be reflected in the value of the capacity market may be relatively low.

VI. SUMMARY & CONCLUSION

CEI is neutral on whether ERCOT has an energy market or capacity market and believes that either market design can work for Texas, if it is well-considered and

designed. Energy prices formed from demand response are integral to an energy-only market. Market forces, rather than administrative ones, lead to good outcomes from capacity markets. The commission may want to consider several alternatives if a compromise is reached, and solicit comments on specific alternatives between the workshop and the next Open Meeting. Primarily, CEI reminds the Commission of the cost of regulatory uncertainty around these key issues.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Eric W. Goff', is written over a horizontal line.

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