

A Report on Future Bulk Power Purchase Decisions

A Public Report to the Customers of the Northeast Nebraska Public Power District (NeNPPD) by the District's Board of Directors and Management

March, 2012

Purpose:

This report is to summarize trends which could change the risks and benefits of the present bulk power contract and describe possible options for different future purchase arrangements. Bulk power purchases represent 70% of all money paid by retail customers for electricity. Under present law the District's Board of Directors have the sole responsibility to purchase bulk power on behalf of all NeNPPD customers. This is the most significant decision they make considering the length of the typical contract (10 to 25 years) and the millions of dollars spent annually on power and energy. Cost alone isn't the determining factor in that our customers have come to expect a constant and uninterrupted supply available on demand. However, future customers may possibly want and could be afforded arrangements other than the traditional monopoly supply. Within the span of the next long term contract there appear significant probabilities that technology, price, politics and customer requirements could change the way customers choose to purchase and use the energy delivered by Northeast Nebraska Public Power District (NeNPPD).

This is the first of a series of papers intended to inform customers, elected officials, suppliers and the public about issues which could affect the Board's decision. Comments on this paper were asked for and have been received from others. NeNPPD's customers hold varied opinions and levels of understanding about the way electric power and energy is produced, delivered, priced and consumed. The one consistent quality expected by customers is low cost. While a constant supply 'on demand' is also a key attribute for today's customer there appears to be some adaptations customers would be willing to make in their consumption patterns. For example, NeNPPD sells nearly 100% of its power delivered for irrigation on a time of use pricing scheme that customers voluntarily adjust their use to avoid critical peak hours. There will always be some customers that need power on demand whatever the cost, but in the next 30 years (a planning horizon of a new bulk power purchase contract) there is very likely a whole array of pricing and supply options that might better permit customers to balance for themselves price and availability that aren't possible under the current style of purchase contract.

Summary:

The first event to trigger any thought about possible future wholesale options was the announcement by the Nebraska Public Power District (NPPD is our present wholesale supplier) that significant investments to install pollution control devices on existing power plants would very likely require new long term contracts from existing customers like NeNPPD within a few years. The existing 20 year contract with NPPD has served our customers well. There remains 10 years on the contract with the option of giving a notice of termination in 2016. The NeNPPD board, through a buyers group of other rural electric systems, contracted in 2001 the right to purchase any amount of power and energy required at anytime on demand. In return for securing this requirement for full supply, NeNPPD agreed to pay any price required of NPPD and to yield to other decisions at NPPD's sole discretion. This arrangement has worked because NPPD has historically provided abundant power at low prices. In 2012, NPPD wholesale prices have increased to where they are no longer below prices of some other producers. The past has not afforded customers any option but to pay what is asked. NPPD's recent membership in the Southwest Power Pool (SPP) which will regulate NPPD's high voltage transmission system may end NPPD's monopoly status and NeNPPD customers could receive power from other utility producers. There is much unknown about how the future will unfold and what political, economic and technical changes could be tipping points in any future power purchase decision. There also are natural laws of physics which will place some limitations on future supply options. Any decision (including the status quo) about how best to contract for bulk power supply has significant risk and careful study is required.

The possibilities for further study are:

- Competitively bid a new 'all requirements supply' contract very similar to the existing supply arrangement, but with other large electric generation companies like Mid-American Energy, Omaha Public Power District, Cooperatives in neighboring States or in-state companies like the Municipal Energy Authority of Nebraska or any number of large cities that operate a generating plant.
 - Risks include (each risk below has the ability to protect against another type of risk) :
 - Fuel risks are inflexible and predetermined by the mix of generating plants owned by the suppliers
 - Customers do not control the competency of management yet underwrite all decisions
 - Investments and contract terms are typically very long term and beyond anyone's ability to predict future circumstances.
 - Prices are not capped and prices increase substantially over time. Prices can exceed other supply options.
 - Makes supplier essentially a monopoly with few spending constraints.
- Negotiate with NPPD for a partial requirements supply and meet the additional power required by customers through shorter term arrangements like market purchases or a contract with a private merchant producer.

Risks include (each risk below has the ability to protect against another type of risk):

- Introduces monthly price volatility based on supply and demand
- NeNPPD would need assistance to manage
- Supply could be constricted and/or investments required to meet peak loads
- Purchase from a local wind producer that may be willing to ‘firm up’ the supply with natural gas fired generation when the wind doesn’t blow.

Risks include (each risk below has the ability to protect against another type of risk):

- Price is determined in part by the futures market for natural gas (could be volatile)
- Significant investment is required (that might be directly underwritten by local consumers)
- Gas delivery is an uncertain link in the supply chain
- No diversity of plants, equipment or fuels. Financial hedges as insurance would be required.
- Provide certain customers the ability to contract for their own power and energy to be delivered to their location by NeNPPD. Technology in metering and in self-generation with wind or other fuels may permit large industry or irrigation wells to schedule the purchase of power from large central generating plants at times that are the least cost and avoid some expense. The possibility of moving risk of purchase decision to the ultimate consumer has some appeal should it appear possible in the next 30 years.

Risks include (each risk below has the ability to protect against another type of risk):

- Assumes a retail market will be responsive with specialized products of value to customers
- Assumes the technology to meter use in real time will be available and cost effective. This is not the case at the present time.

The cost of wholesale power represents most of the typical electric bill. The only real means of controlling future price increases is to strike the best deal on purchased power. In 2012 a 3% reduction in the cost of purchased power would represent savings of \$500,000 (an average of \$60 per year per customer). This amount of savings isn’t possible by any amount of cost reduction at the local level as only 30% of electric revenue is retained for local operations. However, it is a concern that any future shift in risk/cost could outweigh the benefits to customers of this small percentage of savings. A savings of 8% to 10% could provide enough incentive to change suppliers. Today the region is awash in surplus power and conditions would be favorable to NeNPPD striking a competitive deal. Whether things favor the buyer in 5 to 10 years when the decision is to be made is a matter of speculation today, but the promise of savings is great enough to merit a thorough investigation.

It is the intent of NeNPPD’s management to examine all possible purchase arrangements to guarantee that options are well understood and that any future benefits can be obtained while limiting risks and costs. Periodic reports like this will be issued for the customers and the public.

NeNPPD Board hires ACES Power Marketing as a consultant

On September 16, 2011 the Board of NeNPPD retained ACES Power Marketing, a bulk power marketer, to make a presentation at an advertised meeting of the Board. To assist with balancing the information other power district Boards and management were invited as were representatives of NPPD. In general, ACES informed the Board that as of 2011 NeNPPD had a fair price from NPPD, but that the Board was correct to believe that changes are afoot that will make power production and purchasing in the future much different than in the past. ACES encouraged the Board to talk to a variety of producers about different ways to contract for power prior to signing any long term contract. The ACES presentation included nation-wide examples of small rural distribution systems like NeNPPD that:

- purchased from bulk energy markets run by organizations like the Southwest Power Pool,
- invested in local gas fired generation and/or wind generation
- became partners in a large generating station like a coal or nuclear steam plant or
- attempted competitive comparisons between suppliers for long term contracts

With each option ACES provided examples of a successful and unsuccessful outcome to illustrate the specific risk and benefits of each decision. Business decisions deliver the most value when the beliefs about the future that led to the decision are actually realized. ACES cautioned the Board that based on what we know today that NeNPPD has neither a fundamental need to quickly change the contract we now have with NPPD nor is there any apparent benefit to enter into a new one for a long term (if offered). The energy business in America is changing rapidly and in ways that are unpredictable. Long term contracts decrease flexibility to respond to future events.

Possible pressures for a new long term contract with NPPD

As noted in the opening Summary, NPPD has indicated that large investments in their Gerald Gentleman Steam Plant may be required in 2 to 5 years. NPPD has stated that their ability to borrow in the financial bond market was tied to the NPPD Board's ability to unilaterally raise rates in amounts sufficient to guarantee debt service over the life of the long-term bonds. NPPD's announcement seems to come at particular inopportune time because of developments like open transmission access, the loss of NPPD's distinct price advantage, great uncertainty in the nation's energy and environmental policies, an economic downturn, (which has contributed to a record surplus in power generating capacity), the creation of a surplus bulk energy market to be available in Nebraska beginning in 2014, growing distinctions between the demographics, politics, and economies of rural and urban areas in the state and how those differences have played out in NPPD's policies, all create long term uncertainty. NPPD's management has further stated that a new contract may contain provisions for an early cancellation, but only at a steep cost, essentially retaining for NPPD the ability to secure long term revenues for NPPD. Given the very large amounts of money at stake, there appears to be a likelihood

that NPPD will ask for a new long term contract from customers prior to the expiration of the existing contract. It has been stated by NPPD that possibly NeNPPD (and others) may get more favorable pricing by signing a new long-term contract, rather than maintain the existing contract. This kind of pressure to take short term benefits could result in greater cost over the long term, especially if NPPD continues to have major expenditures or a prolonged surplus of power. NeNPPD's management has voiced to NPPD that a new long term contract with NPPD may prove the best choice, but only after all other alternatives with promise are studied and rejected as optimum.

Trends that could affect costs to rural electric systems like NeNPPD:

Politics can affect electric rates.

There is beginning to appear some distinctions in the operating philosophies of rural electric systems and municipal utilities (including NPPD's retail sales division). NeNPPD for example states its mission is to deliver the lowest cost power possible. Municipal and other electric systems are becoming increasingly focused on using the assets of their electric system to fund general improvements to city government or society, including but not limited to: ventures and subsidies for activities labeled as 'economic development', the transfer of monies collected through electric rates to the city governments or colleges, funding certain projects to benefit alliances, for general projects, the funding of perceived popular electric ventures like wind and renewable energy projects for good will and political clout instead of an actual return on the investment. A sociologist or political scientist might conclude that when public power systems lose a clear cost advantage that they become more political as a means of finding support for why government ownership still has advantages. NPPD made substantial investments funded by ratepayers in transmission lines to aid the State of Nebraska's desire to site as many ethanol plants as possible, just as NPPD recently began a program of discounted power to help the State locate data centers. There is no direct accounting of the total cost of these kinds of decisions, which are not directly required to run the power system, but which can have definite and compounding and long term costs.

As the price of electricity rises, less will be used.

A rural electric system like NeNPPD only delivers energy produced elsewhere. Traditionally however, the charge of delivery isn't a set fixed monthly charge and a substantial portion of NeNPPD's local cost for wires and substations is recovered through energy sales. Higher prices for energy could speed the separation of local wires charges from the cost of energy. This process has begun at NeNPPD with showing the approximate cost of wholesale power on most residential bills. More importantly however, is that there is a surplus of energy capacity now at NPPD. Higher prices will mean less consumption and this could keep NPPD in a state of prolonged surplus which will be paid through a long term contract. All parties have to be careful that cost are allocated fairly and that a future contract has an appeals mechanism to avoid an assignment of a disproportionate amount of the fixed costs. At present, NPPD offerses favorable prices because their generating plants were built years ago at a lower cost than is available today.

Rural populations are on the decline and city populations on the rise.

In a system of socialized costs, (as electric rates currently are), there are more and more investments being made to serve urban loads. The cost of making and delivering power from central generating sources to rural areas will increasingly put pressure on rural customers to find ways to use energy more efficiently or during off peak hours. It will be increasingly difficult to negotiate against urban interest either with NPPD directly or with the state legislature on energy policy.

In the 1930's costs were averaged to make city populations bear some of the higher cost of providing service to the 'less economical and less populated' rural areas. This was done through taxation and socialized electric rate structures. Rural electrification was a great achievement and the entire nation benefitted. Whether the business and political climate permits further socialization of cost in the electric industry is questionable in the long term, because as public budgets decrease then benefits have to be assigned to each new cost. It is also unknown if socialized investments in future electric facilities in Nebraska will mean money flows into or away from rural areas. The 'all-power requirements' contract (like our present contract) is a perfect example of socializing the cost of new generating plants in a way that new loads that require the next increment of generation don't pay the cost of supply, but rather everyone does. This has worked well in the past because electric loads everywhere have grown. Should NeNPPD's future load growth be flat or declining then our customers would be subsidizing load growth elsewhere. Even without growth, pooling of the NeNPPD customer loads into a large pool may still offer advantages as a means of spreading risk.

Technology could change dramatically in the next 30 years.

While there may not be a practical or economic alternative for large loads like agricultural motors, industry or process heating, there could be substantial break-throughs in wind or solar energy or energy storage that could make it a viable option within the next contract period for rural single phase customers to generate. We would predict a dramatic increase in the ability of many smaller customers to meet their own needs for electricity. A tipping point likely will be the cost of replacing aging local wires and poles that will dramatically increase the cost of central generating power to sparsely populated rural areas. As delivered power becomes more costly, while at the same time the means of self-generation will become less costly then at some point in coming decades an intersect point could be reached. One of the future predictions required in a supply decision is whether the large central generating station will remain the least cost source of power well into the future or if new advances in technology make other forms of power production economical?

Markets vs. government is a debate started by policy makers.

The nightly news provides constant coverage of the sharp division between policy makers on the role of government in meeting daily needs of people. For utilities the question could be whether functioning markets or government ownership (and sanctioned monopolies) of the means of production are the most efficient long term allocators of resources. It is not the purpose of this paper to take a stand on this debate, but rather to acknowledge that bulk power markets are being created and that within a decade it is entirely possible that market arrangements to purchase power will be possible. The

decision then for the NeNPPD Board and the NeNPPD customer will be which vision of the future secures the best prices: 1) the current type of supply contract whereby all cost of operations are totaled (including required debt service and working cash) or 2) prices set by supply and demand. The weakness of cost based pricing is that the cost of production includes the cost of past mistakes, misallocation of resources, past expenditures on which mortgage payments are still being made, and there being no disincentive to spend money. The weakness in markets is that prices are more volatile as competing bids can drive prices up and the risk of profiteering. The ability of markets to trade electricity as a commodity is largely unproven and in some past cases has been mismanaged. This doesn't mean that well designed markets won't become a reality or a matter of public policy.

The NeNPPD Board has asked the rhetorical question that if competition for future supply from competing suppliers is available at any level: Should the Board preclude a customer's ability to select a supplier themselves, with NeNPPD doing its job of locally delivering power purchased directly by customers? Is there a better outcome with NeNPPD acting on behalf of some or all of its customers to make future purchase decisions? To date, available technology hasn't permitted retail customer choice, but sophisticated metering could make such choice by customers practical and even easy in the future. A monopoly supply at any level seems counterintuitive if it is believed markets will become increasingly viable in the future.

Timing

We expect NPPD to approach its contract customers with negotiations for a new long term contract within 2 to 3 years. By this time, a list of viable options will have to be developed and some communications with other possible suppliers established. NeNPPD has a valid contract with NPPD with an automatic renewal as long as both parties agree on the renewal. As mentioned NeNPPD has no short term reason to terminate this contract, but NPPD may. There also may be incentives or pressure applied that change the nature of the existing contract.

Conclusion

The Board and management of NeNPPD believes the decisions about power supply to be the single most significant decision to be made in 15 years. The decision will affect the next generation and yet the decision will likely be made in the next 3 to 5 years. The business climate and pace of change appears to be significantly different than was the case in 2001, when NPPD was the only entity from which power could be purchased. NeNPPD intends to perform careful study of all options in a manner that our customers, the public, policy makers and NPPD itself can comment, critique and respond.

NPPD has undertaken their own competitive analysis and has shared with its contract customers some important insights as to how it views the future. It is significant to note that long term contracts of more than 15 years may not be available in the future. We believe this supports our notion that the energy industry is in such transition that no one can bet on any very long outcome. Additionally, NPPD has confirmed that there are other utilities within the vicinity of northeast Nebraska that are competitive with NPPD on price. That NPPD (as with a lot of government entities) has a significant debt load that limits its future ability to lower prices in response to competition. NPPD faces increased environmental regulations that may drive up future borrowings and operating costs of large generating stations (although this could well be the case with all Midwestern suppliers).

It is completely unknown at this writing whether any competitive deals with mutual benefits can be struck with another supplier but NPPD. This paper is simply to alert our customers that other arrangements might be possible and that the Board and Management of NeNPPD intend to examine the possibilities and pursue any prospects that hold promise for our customers.