

PROPOSED ENERGY STRATEGY POSITIONS

For CALIFORNIA

Prepared By:

Distributed Energy Strategies, Inc.

Steven A. Greenberg

BASIS

California faces electricity shortages, unprecedented natural gas prices, potential electricity price increases, and potential natural shortages.

There are 2 main areas:

Electricity and Natural Gas

Within each area we can further segment into the following sub-areas:

- Generation (Elec) / Production (Natural Gas)
- Transmission
- Distribution
- Markets
- Customer Side Measures

It is important to understand that while there are discreet solutions in each of the areas, all of the areas are connected and measures in any one area will have impacts on the other areas.

We must further look at the short, medium and long term as we look to policy and implementation of specific measures.

Here then are our recommendations and rationale for specific policies, positions and measures.

I. ELECTRICITY

A. Generation

We believe that topic of generation applies to any resource, whether it is powered by fossil fuel or renewable fuel. Hence we have not described issues by fuel type. There is an abundance of literature regarding the particular issues of different fuel types. In the long run, with clear and transparent price signals (including externalities) fuel choice should be driven by the market.

1. Aging Power Plants (short term). Repowering existing power is quicker and cheaper than building new plants. By combining repowering tax credits with creating an allowance for old plants that commit, (by placing a non refundable deposit into an escrow account) to repower in 2006, to run with limited air permit exemptions during Summer 2005, we would help our short, medium and long term positions. While there might slight negative environmental impacts in 2005, in the long run we will realize environmental benefits by cleaning up plants that would otherwise not be refurbished.

- Associated Bills.

•

2. New Power Plants (mid to long term). New power plants will be built, without increasing utility tariff rates for capital recovery, once we have established four things:

- a. an open and competitive process for wholesale electricity procurement by the IOUs
 - b. an open and competitive direct access market for electric commodity procurement
 - c. a clear policy and process for improving the transmission system that includes new transmission investment and locational based pricing
 - d. a clear policy on natural gas supply specifically including LNG.
- Associated Bills.

•

3. Distributed Generation (short, mid and long term). DG provides several benefits that place it at the top of the priority list. It is installed quickly, it is installed at the expense of the customer that owns the DG, not ratepayers at large, it can be sited at the area of greatest need, it is environmentally friendly. There are several things can increase the rate of DG implementation.

a. Regulatory uncertainty (short, mid, and long term). There are many specific areas to which this topic applies, in the interest of brevity, we have lumped them all together. There continues to be a patchwork of statutes and regulations that make DG investment difficult. For every measure that has been implemented to support DG, the utilities have countered with something to thwart DG. Once and for all establish policy and law that removes disincentives from installing DG.

b. Natural Gas (short, mid and long term). The ability of relatively small natural gas consumers to manage natural gas supply and price risk is very limited. This applies to all small to medium natural gas consumers, not just DG. We should establish a tax credit or other incentives for natural gas suppliers that offer price and risk management services to small to mid-size users.

- Associated Bills.

•

B. Electric Transmission

1. New Infrastructure (mid to long term). It is imperative to increase the transmission capacity within the State. It is very difficult to get transmission permitted one and attract private investment two. We need to create public / private consortiums, backed with regulatory certainty and perhaps even tax credit incentives to bring new transmission to California. Participation in the consortiums should be an open and competitive process. There are five geographic areas that should be treated discreetly. These are: northern CA, central CA, southern CA LA; southern CA SD; and southern CA MX.

- Associated Bills.

•

2. Locational Pricing (short, mid, and long term). While this could also be considered a market topic, this topic is perhaps most important not for the transmission system per se, but its impact on other measures. Without locational marginal pricing there can not be economic efficiency. There must be an economic signal that forms a basis for making investment decisions. Whether these are transmission, distribution, generation, or customer siting decisions, without locational marginal pricing there can not be good and efficient investment decisions. This a critical short as well as mid term topic. Without quick resolution, investments that are made today could be subject to becoming stranded or uneconomic when this issue is subsequently resolved.

- Associated Bills.

•

3. Transmission System Integration (mid to long term). Currently, CA exists with a patchwork transmission system. There are CAISO controlled wires, muni owned wires, and the wires in the surrounding state. Moving to a system that is regional in nature and under the control of a single entity to that can balance the power flows and provide accurate economic signals is critical to maintaining a reliable and economically efficient power grid. We should pass legislation that supports moving to this model as quickly as possible; understanding that sending the market the right signals at this point is as important as actually getting the end result.

- Associated Bills.

•

C. Electric Distribution

1. The distribution system is one of the most important energy assets within the State. However, it was created both physically and regulatorally, during a time when an entirely different economic and technological paradigm existed. Utilities must be able to operate the distribution system for the benefit of all, in a manner that provides them an adequate return on their investment, but also takes into account their performance in operating the system. Many utilities throughout the country have successfully managed the transition from a vertically integrated monopoly to an unbundled service provider. We do not need to reinvent the wheel in CA, we can learn form other areas of the country just as they learned from us in the late 90's and early 2000's. To guide the operation and investment in the distribution system for the next several decades, we must create new paradigms and regulatory compacts in the following areas:

a. Establish new rates (mid to long term). Choice for time differentiated or blended. Much depends on establishment of direct access. Without direct access, a rate class is unfairly burdened if they are not given options. Eliminate monthly ratcheting demand charges. Either no demand or daily demand. Eliminate unfair cross subsidization. Allow for an adequate transition period, five years.

- Associated Bills.

•

i. Critical Peak Pricing (short term). There is currently a strong push to make the voluntary Critical Peak Pricing Program mandatory. The CPP requires severe penalties for customers with demand over 200 kW that do not curtail their load

on “Critical Peak” days. The rationale behind this move to a mandatory CPP program is that it will cause these customers to reduce their demand and avoid stage alerts and rolling black outs. The fallacy in this rationale is that most large customers do not have the opportunity to shift their electric demand. Hence what will likely result is rolling black outs and IOUs with very full coffers.

The theory behind critical peak pricing is not unsound. Until we have a viable market, it is an attempt to enforce what would otherwise be real market signals. It is the implementation that is flawed. There needs to be a phased in approach that allows 2 to 3 years for customers to prepare. Those customers that can not shift their operations, need to be given time and clear economic signals to install, DG and demand response technologies such as automated load reduction software along with compatible hardware. These types of changes take time.

In the interim, the correct course is an optional program or even better is a very real and meaningful demand response market with economic signals that are substantial enough to make it worthwhile to customers in the short term to change behavior without making substantial capital investments. Such a program is described in the Market Participation section below.

❑ Associated Bills.

•

b. Adopt alternatives to “revenue requirement” based rates (mid to long term). These alternatives must create incentives to improve business processes, efficiency and customer service. And not provide the utilities incentives to thwart customer, market and competitive choice opportunities. The revenue requirement focus currently provides no incentive for utilities to focus on customer service or to invest to continually improve their operating and service practices. Revenue requirement based regulation also transfers all risk (100%) to the customer. Utility returns on investment (ROI) based on the risk they face, are extraordinarily high compared to competitive businesses, resulting in excessive rewards.

❑ Associated Bills.

•

c. Revise the utilities “Obligation to Serve” Assumption (mid to long term). The obligation to serve must be revised if customer choice options are to be implemented. We must require the CPUC and CEC to study and revise the assumptions underlying the 'obligation to serve' as it affects utility service requirements (reliability, quality, billing, etc.). Focus on defining electric service needs based on 21st century technology usage, which results in extraordinary outage costs. Current utility service practices (quality of electric service, billing practices, information provided to customers, etc.) are based on assumptions originally developed 80 years ago. Technology is not being used effectively or in ways comparative to other for-profit unregulated businesses.

❑ Associated Bills.

•

d. Appropriate Use of Ratepayer Funds (short, mid and long term). Currently the utilities can use ratepayer funds for their lobbying and advocacy efforts. Furthermore, there is no accountability regarding their use of funds for these efforts. This creates a grossly unfair playing field for any party(s) seeking to change the current system. We should pass legislation that utilities can only use shareholder funds for their lobbying and advocacy efforts.

- Associated Bills.

•

D. Electric Markets

1. Wholesale Markets (short, mid and long term). A viable wholesale market will only exist when there are multiple opportunities to buy and sell electricity and ancillary services. This means moving to direct access and creating a regional and unified transmission control area with locational pricing. We should establish a commission, with a limited shelf life, to provide leadership and oversee the transition to this model.

- Associated Bills.

•

a. Market Participation (short, mid and long term). The dynamics of the grid have changed. 80% of customer load is an unknown entity to the transmission control entities. This customer load represents perhaps the greatest short term resource for reliability and power quality management. To see this resource better utilized, demand response and participating load programs must be made simple, easy, and reflect the true value for the service provided. They must also allow for aggregation and the blending of technologies, such as DG, storage, and energy management systems across multiple facilities. The progress made on the East Coast with similar programs provides ample opportunities to implement measures quickly without reinventing the wheel.

- Associated Bills.

•

b. Resource Adequacy (short, mid and long term). There must be one set of resource adequacy requirements with great flexibility allowed in meeting those requirements. There must be a transparent and readily available market for resource adequacy units.

- i. The debate on resource adequacy has focused on generating assets, but in truth it is a systemic discussion. Generation capacity does nothing if there are congestion problems. The only way to ensure that resource adequacy is addressed in a reliable and efficient manner is through the creation of a regional grid control operator.

c. Locational Pricing (short, mid and long term). As mentioned previously, without locational pricing, inefficient investment or no investment will occur.

- Associated Bills.

•

2. Retail Markets (short, mid and long term. We must reinstitute competitive retail choice. Our previously failed experiment should be used as an example of what not to do. We can look to successful competitive choice markets on the East coast and Midwest for examples of what to do right. The key is a slow and deliberate transition process, with adequate check points to make course corrections and safeguards to prevent the imbalances we experienced in 2000 and 2001.

- Associated Bills.

•

3. Renewable Markets (short, mid, and long term) wholesale and retail markets. The key areas is the ownership and tradability of the Renewable Energy Credits (RECs). There is currently not an established market or guiding principles for the RECs in CA. It is important to view renewables within the context of their impact on the grid as well as the environment. For instance, as non natural gas sources of electricity come on line they reduce pressure on natural gas prices. It is time for the republicans to become key players in the renewable industry and guide it to support the overall effectiveness of the grid, not be an end unto itself.

- Associated Bills.

•

E. Customer Side Measures

1. Distributed Generation. See the discussion under the Generation section above.

a. Solar PV (short to mid term). Solar PV is a form of DG, due to the current efforts it deserves some attention. There is viable way to achieve the results without incurring any additional costs or subsidies. It doesn't need a rate surcharge.

b. A 3 k W solar system will save the average ratepayer \$150 - 300 per month. This money could be directly used to pay for the system. When purchasing a house, if a \$15,000 solar system price was added to the mortgage, the slight increase in monthly mortgage payments could easily be made up in the reduced utility payment. Now there is no reason to finance the solar system over 30 years, if it can be paid for in 10. Or even better, go to 15 years and allow the home owner to realize a net monthly savings. So the solution is to break out the solar system cost, have the State back the installation and financing with a low interest loan insurance program and have the payments made as part of the monthly payment. The State's protection is a lien on the property until the loan is paid off. With this type of program, many homeowners and small business would jump at the chance. This increase in demand should eliminate the drawback of imposing a requirement on builders and allow for a voluntary program. However, as an incentive to builders to promote the program, we should hold the threat of going to mandatory program if targets are not met for more 3 years in a row. This should keep the builders engaged in actively promoting the program.

- Associated Bills.

•

2. Demand Response and Participating Load (short, mid to long term). See the discussion in Markets, Market Participation above. This could be the most cost and

performance effective measure in the short and long term. The current patchwork of programs from the various utilities, agencies, and CAISO is not effective. We need one simple program. We have drafted a demonstration program and can provide details upon request.

- Associated Bills.

•

3. State Leadership (short, mid and long term). The State and other government facilities present 2 huge opportunities. First to save money on the State's operating budgets and second to lead by example. State facilities should be required to participate in the programs we have discussed. This will result in tens of millions of dollars of savings in various government budgets. It will also help move the transition to new markets through quicker by generating critical mass and help make certain that the State understands the developments that occur in the dynamic market place.

- Associated Bills.

•

II. NATURAL GAS

A. Production

1. California is a producer of natural gas. California also has the potential to import large quantities of natural gas in the form of liquefied natural gas (LNG). For the purposes of this discussion, we will look at LNG as a production measure. Natural gas is the backbone of California's electric generation industry. Many large industrial and commercial enterprises rely on natural gas for the core business processes. Most businesses, institutions, and homes use natural gas for space and water heating.

a. Low Btu wells and stranded wells (short, mid and long term). There is a large untapped resource in CA that is low Btu and stranded wells. This gas can be converted to electricity at the well head. We should remove barriers and provide incentives to producers and generators that join forces to turn these wasted resources into valuable energy producing assets.

b. LNG (long term). Without LNG facilities in CA, we will lose access to much of the world's available supply of natural gas. LNG processing requires extreme care and safety measures. When carried out with the appropriate care, LNG is an environmentally relatively benign enterprise. There is a major LNG facility located at the mouth of Boston harbor. If that facility operates cleanly and safely, there is no reason why the same can not be made to happen here. The Administration should work with the Legislature to sponsor a bill that provides a clear responsibility, mandate, and direction to appropriate State agencies to expedite the competitive development of LNG processing facilities and assure access to the natural gas backbone transmission system. The market needs this type of signals to respond to the growing demand. I also would not rule out a private/public partnership to share in the development risk.

- Associated Bills.

•

B. Transmission

1. Interstate Transmission. While regulated by the FERC, the interstate pipeline capacity (including Mexico) is the primary source of natural gas for CA. We must do everything possible to monitor the commercial activity that occurs on this system to 1) prevent market manipulation and 2) determine when capacity increases are needed.

a. Increased competition (short, mid and long term). California must be aware that competition for natural gas supplies is increasing. Just as the economic growth in AZ, NV, WA and OR is increasing demand therein and consequently reducing the availability of electricity for import into California, so too is the impact on natural gas.

b. Increased capacity (mid to long term). When capacity increases are needed, developers, owners and operators of pipelines must be given clear signals that California will provide an appropriate regulatory environment that will support the competitive delivery of natural gas to customers. Without that reasonable regulatory certainty, pipeline developers will be faced with the risk of having a stranded asset and will be reluctant to build new capacity.

2. Intrastate Transmission. Inside California, we face physical and regulatory bottlenecks when it comes to insuring that there is sufficient natural gas transmission capacity.

a. Physical bottlenecks (mid to long term). The physical bottlenecks can be resolved in either of two ways, through new privately owned and operated pipelines or through new regulated utility pipelines.

i. While large industrial customers stand to gain most from privately developed pipelines, smaller consumers may be saddled with higher rates if the result of large industrials leaving the IOUs results in too much excess capacity on the IOU's pipelines. However, transmission competition should result in lower prices in the long run.

ii. It is timely to study the costs and benefits of intrastate gas transmission pipeline disaggregation from the gas distribution business.

b. Regulatory bottlenecks (mid to long term). The regulatory bottlenecks can be resolved by adopting a common policy throughout the State. The current regulatory fragmenting between PG&E and SoCal has resulted in a lack of infrastructure investment in southern California. Natural gas should be able to move freely from north to south and east to west without incurring varying regulation and cost.

□ Associated Bills.

•

C. Distribution

1. Regulatory change (short, medium and long term). California enjoys a robust and reliable natural gas distribution infrastructure. However, while California supposedly deregulated the natural gas industry some time ago, the gas distribution utilities act as anything but disinterested providers of transportation services. The utilities incentives should be to operate their systems efficiently, reliably and cost effectively and be

rewarded for good performance. The utilities behavior in terms of advocating for current rate structures and consequently capital investment do not reflect this premise.

- Associated Bills.

•

D. Natural Gas Markets

1. As mentioned above, while California opened the natural gas commodity business to competition some time ago, we do not have a robust retail natural gas market. There are few suppliers and the utilities act as direct competitors not disinterested providers of transportation.

2. Retail Markets (short, mid and long term). Small to mid size businesses are particularly at risk. The lack of competitive suppliers results in a lack of services to manage price and reliability risk. We must provide regulatory certainty and if necessary incentives to create a robust retail market. The Northeast enjoys such a market, it is doable in the near term. At the same time, we must provide the utilities carrots and sticks to reward them for good performance, including the facilitation of a robust market and penalize them when they don't.

- Associated Bills.

•

E. Customer Side Measures

1. Fuel switching (short, mid and long term). California has a wonderful that we have yet to take advantage of: the ability to fuel switch based on seasonality. In general, natural gas is relatively cheap and available during the late summer when hydro resources have become depleted. Conversely, natural gas is costly and supplies can be tight during the late winter when hydro is plentiful. Yet we have done very little to have a focused program of fuel switching.

a. California should encourage price mechanisms that provide positive economic signals to switch from electricity to natural gas cooling and pumping during summer critical peak days.

2. Natural gas conservation measures (short, mid and long term). Many large industrial and commercial customers employ old and inefficient heaters. Replacing old heaters with newer more efficient heaters will reduce the use of natural gas overall and improve the environment. Replacing older heaters and installing heat recovery coils would effectively reduce the consumption of natural gas by 20 to 30 percent. California should institute an incentive program to encourage business to replace older heaters as quickly as possible.

- Associated Bills.

•

III. CONCLUSION

Outside of energy circles, most Californians have been lulled into an apathetic state of complacency in the last 2-3 years. Most Californians assumed the system was fixed when rolling black outs and wild price swings ended in 2002. However, those in the

industry know that our energy infrastructure has been anything but fixed. We were saved by an economic downturn and now that the economy is rebounding we are faced with potentially even greater disruptions than we did in 2000 and 2001.

That is why those of us in the industry must stand up and not only bring awareness of the current dire situation into the limelight, we must also strive to find short, mid and long term solutions. This paper has attempted to achieve both ends. One may not agree with our findings or our recommendations, but if we have raised your awareness and stimulated your thought process to consider other solutions then we have been effective. We may not have all or any of the right answers, but one thing is certain, by combining the talent that exists in California with thoughtful leadership and the opportunity to work together, we can solve the problems.