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California Energy Market: Success or Failure?

What has happened to the California energy market? Why did it sound so good and why are we at this junction, with investor owned utilities on the edge of bankruptcy and utility rates soaring? Something is definitely wrong!

The first step is to identify the issues. They are not quite as simplistic as some would have us believe. The signs have been here and growing more visible for a year. The concept of the energy market does, in fact, work. Californians have options to purchase energy from others, rather than from the investor owned utility. The transmission grid has been opened up for others to use, because the investor owned utilities (IOUs) have turned over the operation of their transmission lines to the California Independent System Operator (ISO).

There are many things that did work as expected:

1. The transmission grid formerly operated by Southern California Edison Company (SCE), San Diego Gas & Electric Company (SDGE) and Pacific Gas & Electric Company (PG&E) is no longer under the control of those investor owned utilities;
2. The market mechanisms placed in service functioned dependably and almost flawlessly without serious market system interruptions at the ISO or the California Power Exchange (PX);
3. The IOUs' sale of thermal generating facilities to others "broke the perceived market power and IOU energy production monopoly;"
4. Large industrial and commercial consumers were able to select their own energy suppliers, not being limited to the IOUs;
5. All consumers, including residential class IOU customers, have the right of selecting their energy supplier;
6. The electric (transmission) grid and distribution services provided by the IOUs continued with the same quality of service and reliability;
7. The grid charges assessed by the ISO have been largely kept under control, with reasonable increases in the grid maintenance charge (GMC) and costs of ISO operation;

8. The grid reliability remains high and the professional and technical services provided by the ISO, PX, and other Scheduling Coordinators has been very good.

What Is Wrong?

What has gone wrong? Energy prices have soared and availability of energy to California has diminished sharply. Prices have been rising, with sharp increases felt during the summer of 2000 with average PX prices climbing to \$750/MWh during some hours. Average PX prices climbed in 2000: \$47/MWh in May, \$120/MWh in June, \$106/MWh in July, and \$166/MWh in August. Prices and availability have become monumental problems for Californians and these problems continue through the Winter!

Who Is Impacted?

The customers in SDGE (San Diego) felt the price increases, with utility bills skyrocketing. SDGE customers had the energy cost increases passed through to them, because it was allowed under provisions of an initial agreement with the California Public Utilities Commission (CPUC). SDGE was the first to fully divest itself of the required generation facilities mandated by the CPUC and therefore could pass through the energy cost increases.

SCE and PG&E, however, have not reached the step in the process that they are allowed to pass through energy cost increases, and were mandated to maintain a 10% reduction. Customers in SCE and PG&E territories did not see the sky-rocketing electricity bills, but the increasing market prices forced these IOUs to pay more for the energy, exacerbating the financial deficit. The two giant IOUs stand on the edge of bankruptcy.

Who Is Responsible?

It is important to understand that there are no easy answers. The ISO operates the grid and administers the market mechanisms. The ISO was never designed to become a state supplier to end use customers. In this case, the IOUs are not a fault, as they were complying with a mandated course of action. Let us not look for some entity to punish!

The deregulation was mandated by the CPUC and overwhelmingly voted into law by AB1890. Have our legislators forgotten this act or the responsibility for taking these actions? The CPUC cannot be surprised. The IOUs, Scheduling Coordinators, and ISO appear, to this author, to be operating fully within the rules filed with and approved by the Federal Energy Regulatory Commission (FERC). We cannot look for some "evil empire" that has cause it, but certainly the regulators and legislators must accept a high level of responsibility.

What Are The True Contributing Factors

Energy markets work and continue to work in other places. Why not here, in California? There are a number of contributing factors. A methodical look at causes must precede the search for answers.

Some factors that follow may be subjective in nature, but are offered herein as considerations for achieving better understanding of the contributory factors, those “drivers” that got us into big trouble.

1. The idea that the free market for electricity needs no “price caps” and no, regulation is not a realistic concept. Electricity is an instantaneous commodity, it is produced by a limited number of suppliers, and it is a critical requirement for human services and commerce.
2. The requirement for IOUs to divest a significant portion of their generation (power plants) was aimed at limiting IOU market power, but it also removed that portion of resource supply from regulatory control.
3. Efficiencies were lost in power plant operation. The hydro-thermal coordination that previously took place between the hydro and thermal generating plants within an IOU utility (SCE and PG&E) were essentially lost with the advent of the new market.
4. The “supply and demand” theory of economics might well be applied in the long term, and power plants may be built to eventually lower the energy prices. However, California has steadfastly rejected proposed power plants and it requires years to secure approvals and complete such facilities. Neither the economy, nor the people could sustain such a wait. The assurance for adequate energy supply must be assumed by some entity, since removing it from the IOUs. The market cannot do this in the short term.
5. California has long been energy deficient, relying upon nearly continuous import of energy from the Northwest, Nevada, and Arizona. As those economies grow, the surplus available for delivery to California is steadily being reduced.
6. There are constraints in the transmission grid that restrict the flow of energy over certain electrical paths within the grid. There are constraints on magnitude of energy (a) transfer simultaneously across the sum of all paths into California, (b) transfer across individual paths into California, and (c) transfer across paths within the California ISO grid. Under the present tariff there are no incentives for any entity to build transmission to mitigate the constraints.
7. As the financial deficit for SCE and PG&E increases, and the IOUs are more unable to borrow in order to pay for energy from others, less energy is offered for sale to those utilities, further exacerbating the spiral towards increasing numbers of ISO-declared emergencies and rolling black-outs.
8. All entities in California were not mandated to “join the ISO” and relinquish generation ownership or transmission operation as were the IOUs. The municipal utilities, power agencies, California Department of Water Resources, and federal facilities (Western Area Power Administration) were not under the same requirements as were the IOUs. This provided for honoring “existing contracts” of all entities in

California, except the IOUs. There was not equity in risk or participation for all California utilities.

9. No entity should be “mandated” to sell to California if there is no assurance of payment to the seller.
10. Thermal power plants in California are heavily reliant upon natural gas as the fuel for their boilers. Gas prices have increased.
11. The IOU financial condition and the customers’ plight are both direct results from compliance with State law and FERC tariff.

There Is No Turning Back!

There is no turning back. The power plants that were sold are gone. The efficiencies are lost. The market, ISO, PX, and Scheduling Coordinators exist. It is impossible to return to the “good old days.” Remember why we Californians started this journey. Now we must complete the journey. To do that there will be various plans, but the plans must address the cited causes or it will be a Band-Aid on a fatal wound.

Why continue on? We must because we cannot put “Humpty Dumpty” back together again. Whether we like it or not, it was done and we must make the best of it. The real question must be, “What do we do from here?”

How Do We Fix It?

The time of economists espousing theories and deep thinkers presenting schemes has past. It is time for immediate, certain action. The actions taken now must be positive and focused upon long term effects, as well as short term effects.

The solutions must address the causes previously outlined and the following suggested actions are worthy of consideration:

1. State and federal funds must be provided to alleviate the accumulated financial deficit of PG&E and SCE that resulted in their compliance with State law and FERC tariff, making the IOUs worthy of credit and viable purchasers of energy, excluding any portion attributable to imprudence;
2. Free the IOUs to enter into long term bilateral contracts, nurturing the market to respond with lower spot prices in the hour-ahead market;
3. Create a California State Scheduling Coordinator, perhaps designating CDWR (Department of Water Resources), to enter into long term contracts to provide an incremental energy supply whenever triggered by a specified price or Stage 1 Emergency declaration;
4. Create incentives for others, not excluding present transmission owners, to build new transmission in order to mitigate grid constraints within California, especially “Path 15” between Los Banos and Bakersfield areas.

5. Mandate a formula for calculating maximum price caps for “balancing energy” and ancillary services purchased by the ISO considering natural gas prices and thermal production costs;
6. Place greater authority with the ISO over actions by California generator owners, allowing substantial penalties for actions taken by generator owners explicitly carried out for the purpose of increasing prices;
7. Dismiss the requirement for divestiture of remaining IOU generation resources, allowing defined reasonable profits in their market participation;
8. Establish new rates for large numbers of customers who are willing to accept full power interruptions for up to a certain specified time each day in order to participate in the operating reserve allowed under the tariff for firm load interruption;
9. Create a requirement, and secure FERC approval, for all California utilities to operate under the same transmission grid rules, eliminating the observance of “existing transmission rights” for those non-IOU California utilities;
10. Streamline the processes and approval times for new power plant construction and transmission line construction, passing new laws (if necessary) to allow a “fast track” process, not excluding nuclear power;
11. Create tax incentives, not penalties, for locating generation in California within the ISO control area connecting to IOU transmission;
12. Create greater accountability to regulators by IOUs for the justification of costs associated with the (distribution and transmission) “wires business;”
13. Increase incentives for conservation of natural gas and electricity;
14. Consider ways of increasing supplies in California through State action with regard to natural gas and gasoline (the latter being an unrelated area Californians are impacted).

Will Californians stand by and fiddle as the infrastructure burns? Will we continue to resist efforts to build generation in California or dismiss the idea that energy shortage is indeed real? Will we continue to seek some entity to punish or blame? Let us fix it.