

## DOCKETED

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## **AB 1257 Staff Workshop on California's Natural Gas Infrastructure, Storage, and Supply**

### **Workshop Panel Questions**

The following questions have been posed to the panelists who will be participating in this staff workshop. The goal of this workshop is to collect, in the public record, stakeholder feedback, which will be used by the Energy Commission in the Assembly Bill 1257 (Chapter 749 of the 2013 statutes) "Natural Gas Act" report. The AB 1257 report is a legislatively mandated report that asks the Energy Commission to "identify strategies to maximize the benefits obtained from natural gas, including biomethane for purposes of this section [sic.], as an energy source, helping the state realize the environmental and cost benefits afforded by natural gas." The bill identifies ten areas of focus including natural gas infrastructure, storage, and supply. For more information about the report see the workshop notice in docket # 15-IEPR-04 at:

[http://www.energy.ca.gov/2015\\_energypolicy/](http://www.energy.ca.gov/2015_energypolicy/)

You will also find directions on how to e-file comments in the workshop notice. We encourage anybody who would like to answer any of the following questions to do so and e-file your answers to the docket.

### **Panel #1: Southern System Reliability Issues**

1. Under what circumstances of demand versus supply balance does the Southern System Minimum flow issue arise? To what extent has the system minimum flow issue affected reliability in SoCalGas' southern system? Under what circumstances would any reliability issues be exacerbated?
2. On December 20, 2013 Southern California Gas Company and San Diego Gas and Electric Company filed their application for authority to recover North-South Project revenue requirement in customer rates and for approval of related cost allocation and rate design proposals. Subsequently, two pipeline companies filed initial details of alternative pipelines and another filed comments alluding to a pipeline proposal that would be filed in the future. Could SoCalGas and each pipeline company at the table describe their proposed pipeline and explain what potential benefits their project presents? What are the potential drawbacks?
3. Are there other benefits that the proposed North-South pipeline could provide?

4. Can the Southern System Minimum flow issues be adequately addressed with non-physical solutions instead of a new pipeline? What are the non-physical solutions that could be used and what are their strengths and limitations?
5. Are there future plans or discussions about building natural gas pipelines to the coast near the site of the now shut down San Onofre Nuclear Generation Station (SONGS) in order to facilitate new gas-fired generation facilities for electric reliability in Southern California? What about to Baja-California to take advantage of energy reforms occurring in Mexico that will open up the electric power generation and gas sectors?
6. In constructing new natural gas pipelines, what risk factors in the Southern California Region, such as sea level rise impacts and seismic activity, are being considered in siting and engineering the pipelines? With the uncertainty posed by climate change, how are gas companies and suppliers accounting for that risk?
7. What opportunities for renewable natural gas and biogas can be taken advantage of in looking at reuse of existing pipelines or building sufficient capacity into new pipelines?

## **Panel #2: NG/Electricity Coordination and Effects on Natural Gas/Electricity System Reliability**

1. From the perspective of the panelists, in what areas has California successfully coordinated natural gas supply for use in power generation?
2. In what areas has California not been successful in coordinating natural gas supply for use in power generation?
3. The issue of synchronizing natural gas supply with demand from gas-fired power generation can vary based on regional circumstances. In the case of Southern California, the shutdown of the San Onofre Nuclear Generation Station (SONGS) in 2012, created a unique challenge. In light of this challenge, what do you see as the major issues facing Southern California with regards to the interface between natural gas supply and power generation?
4. California's current drought has reduced the role of hydroelectric power generation and increased the role of gas-fired electric generation to fill the gap. Are there upcoming challenges that Northern California will face when coordinating natural gas supply with gas-fired electric power generation? What services are provided to help with system imbalances and flexibility?

5. The polar vortex during the winter of 2013 – 2014 caused unseasonably cold weather outside of California and a subsequent rise in demand for gas to heat homes and businesses. Higher gas demand outside California resulted in higher prices in those markets, which prompted increased gas flows away from California. This led to gas supply shortages, and on one day in February of 2014, curtailments of electric generation facilities in California. These events highlighted possible problems with the way electric generation fuel costs are recovered and the way natural gas is purchased during extreme weather events. What could be done to avoid such risks in the future?
  
6. FERC has launched several efforts to address the issues caused by the polar vortex, such as their Notice of Proposed Rulemaking (NOPR) to make the gas day earlier and to have another opportunity for intraday gas nomination, or an electronic information and trading platform for natural gas that could facilitate the sale of both natural gas and pipeline capacity for receipt and delivery points across multiple pipeline systems. What are the panelist's opinions on FERC's proposed changes to the natural gas nomination schedule? Would a natural gas electronic trading platform be helpful?
  
7. In addition to the scheduling and coordination issues being addressed by FERC are there other types of transmission services and cost allocation schemes for interstate pipelines that would help to ensure reliable delivery of gas to generators?
  - a. Should tools like in-state curtailment policies be revisited, with electric generators having a higher priority than what currently exists?
  - b. Are there new procedural or market mechanisms that could be developed to identify critical generators and ensure that these generators have sufficient gas supplies during disruptions to gas systems such as extreme weather events?
  - c. We know the CAISO has changed their tariff to address the events of last winter triggered by the polar vortex, what other systemic changes do the panelists think would be beneficial to address these problems?
  
8. Intermittent, must-take, renewable energy sources – especially solar power – can result in net load reductions in the middle of the day when load is low and solar generation output is high. Load increases when people return home from work in the evening, and this coincides with solar generation reductions as the sun goes down. The result is a rapid ramp in energy demand, which is largely met with flexible capacity gas generation plants that can rapidly ramp to meet energy demand and can follow load to low levels without shutting down.

- a) What are the potential effects of this rapid ramping and load following on California's natural gas system?
  - b) Are there localized areas in California's natural gas system where quick ramping flexible capacity generation plants could pose a problem?
  - c) What are the effective ways to address this potential problem?
  - d) Are there localized areas, particularly where transmission is constrained, where flexible capacity generation plants can be a solution to reliability concerns even absent renewable integration issues?
9. Flexible capacity gas generation facilities are typically less efficient than conventional combined cycle generation. Will more frequent use of flexible capacity actually contribute to increased use of natural gas as a generation fuel overall for California? What would increased use of flexible capacity mean for particulate emissions, NO<sub>x</sub> and GHG emissions? Will flexible capacity generation facilities need to modify their permits for increased start and stop operations? Are there market signals or factors that would mitigate using these less efficient facilities?

### **Panel #3: California Natural Gas Supply and Production**

1. What technological advances have there been in conventional natural gas production that could benefit California's natural gas production industry? Are there current examples from the field?
2. From your perspective, what will future natural gas production look like in California?
3. Over the past several years, the US has undergone a well publicized shale gas boom that has been facilitated by the technical advances in seismic surveys combined with horizontal drilling and hydraulic fracturing. The resulting flood of new supply on the United States natural gas market has caused a number of companies to file for permits to build liquefied natural gas (LNG) export terminals, with the intention of exporting gas to foreign countries. Taking into account the economic and permitting hurdles related to building LNG export terminals, what is a realistic outlook for the impact of LNG exports on the US natural gas market? Under what circumstances would the US LNG export market result in US supply shortages and price increases? What jurisdictional issues arise in permitting LNG export terminals?
4. What would need to be done from a gas infrastructure perspective to switch the Costa Azul LNG facility from an import facility to an export facility?

5. California's natural gas utilities have made significant investments in gas storage facilities to provide additional supply for system reliability. Independent storage facilities provide additional natural gas supplies to California's system. Over the next ten years, how much additional natural gas storage is likely to be necessary to ensure system reliability in this evolving gas market? Who should develop this storage?
6. The polar vortex that led to gas supply shortages and curtailments of electric generation facilities in February of 2014 highlighted the fact that California, despite having a great deal of redundancy built into its natural gas infrastructure, is not immune to supply constraints. What is the outlook for the US, and California in particular, this coming winter in terms of gas storage availability, gas supply, and potential weather events?
7. Mexico has plans to convert many of its oil-fired electricity generation facilities to natural gas and to build many new natural gas-fired electricity generation plants. Although Mexico's recent energy reforms will encourage new natural gas exploration and production in Mexico, significant increases in domestic production are not expected for years to come. In the interim, Mexico will be importing more gas from the US over a number of new pipeline interconnects off of the same interstate pipeline that supplies Southern California Gas Company's southern system. What are the risks that these increasing natural gas exports to Mexico will cause supply shortfalls and price increases for Southern California?