**NAESB GAS-ELECTRIC HARMONIZATION FORUM Meeting**

**Monday, May 5, 2014 – 8:00 a.m. to 5:00 p.m. Central**

**May 5, 2014 Discussion of Issues and Possible Voting**

Gas Day Start

Intraday Nominations 3 vs. 4

Cycle Times / Overlap / Reaction / Impact on Workday

| **Speaker** | **Comments** |
| --- | --- |
| Skipping Stone: | Premise – staring point is the ramping cycle of electrics – then that backs into the gas time lines– that reasons (for electric) call for the # of cycles, nom’s, etc. Why 2 bites on gas apple in advance of next day? |
| PJM: | Prefer 1) gas day ahead of morning ramp  2) single gas day to cover both daily electric ramps so: 6 a.m. = too late for gas day |
| CAISO: | Renewables in West mean gas day electric day timing (different ramping periods) for make up gas |
| HEM: | Moving gas day earlier will undercut end-of-gas day gas market issues. Less liquidity in early a.m. |
| Skipping Stone: | Why 2 electric ramps within 1 single gas day? |
| PJM: | Morning ramp is steep and want to avoid an end-of-gas-day hitting mid ramp. |
| SW Customer Coalition:  | Firm gas customers Day = function of the last bumpable period. The renewables output pattern is key. Current gas day is split in morning ramp; more challenges in afternoon ramp. |
| AGA: | Acknowledge the electric ramping challenges, but they occur at different times across different time zones. |
| Puget Sound: | Gas industry accommodates gas day in middle of gas customers’ ramp. Problem isn’t gas day, but rather an issue of electrics managing their gas nominations and use. |
| HEM: | Agree that issue is management of gas by electrics. Gas day isn’t’ the core issue. |
| Northern Natural Gas: | Agree that early a.m. end of das day allows a lot of accommodation to customers’ needs. |
| CAISO: | No position of having a single gas day cover 2 electric ramps.Timing issues are important for renewables integration and getting gas to cover fast ramps down and up. |
| ISO-NE: | CommitmentCommit enough to be able to meet afternoon peak (and ramp). Want morning commitment to reflect full day commitment. Want generator to get its gas in timely nomination. |
| PG&E: | Status quo works best for California. Prefer to have gas trading early enough to allow gas price certainty (in the CAISO bid process)Gas infrastructure is robust enough to accommodate intra-day changes. So flows can follow price certainty.If delay timely cycle – potential consequence is lack of price certainty. |
| ISO-NE: | Timely nomination is affected by gas day.Want more timely information on gas prices for electric day.Relationship between availability of delivery capacity and price certainty.West: lots of pipe, so want price of gasEast: pipeline constraints, so want information on flows before price of gas |
| AEP: | Price is important, but volume is critical.Have to accommodate coal plant retirements, and need the flexibility of additional cycles. |
| Washington Gas Light Co: | Question: Is gas availability a problem in p.m. ramp? |
| IRC: | Mainly challenges in morning ramp (i.e., at end of gas day when may be running out of gas due to more use in prior day). |
| AEP: | Sudden changes in electric system op’s conditions lead to the situation of not having enough gas. |
|  | Question re: timing of nominations and “clean up” services. How to address these end-of-day clean up? |
| PSEG: | NGC preserves the clean-up opportunities. Don’t want to lose the flexibility and services, even if staffing and other costs increase. End of gas day now (pre 9 a.m.) allows for flexibility to clean up. |
| Skipping Stone: | These pipeline service offerings are offered by some pipes. To accommodate over/under burns across customers. |
| ACES: | The fact that some pipes don’t offer clean up services leads to less flexibility for some electrics. ? Maybe standardize (Discuss) |
| National Grid: | Need clean-up cycles at end of day. |
| PSEG: | 2 clean up services (both useful)* Full stop cycle (at end)

- Before end of gas day |
| DSPS: | Northeast peak period – a.m.Southwest peak period – 7-11 p.m. (Central)Timely nomination won’t fix later. So need 7 p.m. (Central) bumping cycle. |
| BP: | Running out of gas in a.m. electrics at end of gas day.So wouldn’t the change in gas day just shift the problem to evening electric ramp? |
| ISO-NE: | Want both ramps into single nomination for gas day. |
| New Jersey Natural: | 2 clean ups- change considered part of current gas day (post)- change for nextNomination today for tomorrow, at end of gas flows day: 1) acquire before end of day; 2) or retro-nom that impacts prior day. |
| NRG Energy: | The question of shifting gas day just shifting the rampIt’s the question of gas trading market periods |
| ACES: | On peak days, mismatch of the full-on-demand with spreading gas across 24 hours. |
| Williams: | Some pipes in Northeast have 7-9 (Central) clean up. [Flow’s physical]Others have it after (9-10)Others have a retro (could go way out)These may be to clean up imbalances.Each pipe system may or may not have the flexibility. |
|  | Character of gas loads (e.g. LDC):Electric Op’sOn electric side, outages cause an impact that’s immediate and can be large. Gas demand is pulled.LDC loads aren’t that different than electric loads (in East, for Spectra).Bigger issue – contracting by customersCommercial reality is try to do things instantaneously.Pressure = speed of sound v. speed of lightIn aggregate, scope + speed of LDC and electric ramps = similarBaseload coal may need to be replaced with baseload gas (with delivery implications)Solar day causes very steep ramps |
| DSPS: | Not just solar day. Also problems of unexpected cloud or wind.“We’ve bought a corvette, but can’t get gas. Storage not available to provide that flexibility. |
| ACES: | In true peak conditions, even if you have Firm gas, may not be able to use it when needed.The challenge is the unexpected event in either gas or electric. |
|  | At high level, LDC ramp looks the same as electric ramp. But at more granular issue, various challenges –- forecasting the day- adjustments based on unexpectedQuestion: should every cycle be bumpable? |
| DTE Gas Co: | Support making every cycle bumpable. Want to meet firm needs with firm rights (+ bumps) |
| Puget Sound: | Ditto - issue seems to be the fact that in organized RTO’s, generators can’t recover costs of firm transportation. |
| DSPS: | Agree on removing ‘no bump’ rule better incentives.Interruptible shippers can put in/out of park and loan services. |
| Consumers Energy: | Supports HEM then NGC as back-up (?)Don’t support later bumping cycle |
| AEP: | Opposed to complete elimination of “no bump’ rules (esp. at end of year).Peakers need at least one ‘no bump’ because their capacity factor doesn’t support firm transportation. |
| Offshore perspective: | BumpingOffshore producer can’t support firm transportation so they buy it on the offshore pipe, and FT onshore. |
|  | If ‘no bump’ is eliminated in all cycles, then industrial customers will not find it reliable. They need some portion of the day when they won’t be bumped. |
| PG&E: | Agree that there are limitations (physically) on park and loan services.For a system with lots of infrastructure and flexibility, requiring all FT is not efficient. |
| National Fuel Gas Distribution: | “Teachable moment” Prefers changes in capacity release. But that, along with bumping, is a small thing!Focus on the big issues in limited time. |
|  | Question: Why can New Jersey Natural use clean up, but N.E. Generators and PJM, ISO-NE can’t? |
| ACES: | Not every pipe offers it.They used to, but stopped. Some pipes say that it’s an infrastructure issue. |
| SCGC: | Clean up / true-up to account for what happened physically. |
| Kinder Morgan: | Availability of clean upsome = actual flow changes some = accounting to minimum imbalance charges |
|  | Question RE: Capacity release? |
| BP Energy: | I.T. service – keeps FT lower cost.At some point in the day, customers need to know they won’t be bumped.Capacity release: sometimes seasonal or for days. But less focused on 2-3 hour period.This forum isn’t the place to address it. |
| DSPS: | Capacity release could add to more services.But the more that capacity release is real time, the less need for I.T. |
| Skipping Stone: | New capacity release (day-of and day-ahead) will help buyers and sellers; but doing that will work against I.T. because the capacity that’s released tends to be firm. |
| HEM: | If the industry (gas and electric) think there’s something to dismiss but no time? |
| Rae McQuade: | Not eager (loathe) to ask for more time. |
| National Fuel Gas Distribution: | Agree Day-of and Day-ahead capacity release = useful. Need to change bidding rules. But also need to simplify the administrative details. |
| New Jersey Natural: | At some point, want delivery certainty |
| NJR Energy Services: | Ditto |
| NRG Energy: | Ditto |
| Spectra: | Already provide intra-day capacity release (posting of willingness to sell)So this discussion of capacity release is about Biddable Capacity Release. |
|  | Question: Why New England and Mid-Atlantic electrics don’t use clean up? |
| National Grid: | LDC’s in Northeast do; they have the assets to do it. |
| Texas Gas Transmission: | There aren’t “standardized clean-up services” |
| ACES: | Ditto |
| Calpine: | DittoLove it, but not standardizedMany generators in PJM are served off of LDC systems; they don’t provide clean-up services. |
| SCGS: | Offered in So. Cal. |
|  | Question: Will LDCs change their gas days, etc., if FERC does? |
| PG&E: | Can’t imagine not following FERC’s 4 basic cycles |
| Southern California Gas: | Have a 5th cycle for imbalances of usage storage |
| National Grid: | In NY and NE, we provide balancing and hourly nomination rights. Flexibility depends on assets of LDC. |
| Calpine: | Even if LDCs have followed FERC’s cycles, their tariffs look very different. |
| National Fuel Gas Distribution: | State PUCs generally seek to align (or move in that direction) |
| Puget Sound: | On own system, we honor piped timing, etc. But it’s a big cost. |
| New Jersey Natural: | We’d change timelines to match. |
|  | Question: Work day – sacred? Or will it follow? |
| DSPS: | It’ll follow whatever standards are set. Work days will transition. Swing shifts accommodate it.1 degree difference in weather change = 300 MW of load. |
| Chevron: | Expect work day to change, but expect trading to be a market event, so it’ll extend it beyond business hours. 7 a.m. – 4 p.m. – then drop in liquidity. |
| Skipping Stone: | Expect trading business to shift early a.m. – 4 p.m.4 p.m. - end of day |
| Devon: | Goal to market all production each day. Start trading at 7 a.m. Would expect that late-day (late cycle) nominations would be met by storage and pipe, less by production. |
| New Jersey Natural: | To add more capability in different periods, need to add shifts. |
| PCS Nitrogen: | Have FT; most nominations in timely cycle. Other cycles are for small things. Adding another shift is not cost effective, and also am concerned about the supply chain passing along the costs of many having to add new shifts. So add cycles, not stretch out the whole thing. |
| NRG Energy: | Will need to do a lot to deal with changes. |
| Southern Star: | As a pipeline, it’s 24/7. There’ll be incremental costs. But if change start of gas day, much bigger costs (to get operating work force to shift ahead). |
| Targa Resources: | Need an evening cycle?It’s needed to clean up mistakes before start of next day cycle. The further you move from timely cycle, the more difficult it is to fix things (especially in obscure hours) |
| Wisconsin Public Service: | If cycles change and then RTO times change, the generators then have to change (domino effect) |
| Chevron: | Storage is who makes money on availability of later cycles. |
| Macquarie Energy: | Gas and power marketing and trading. Will ICE and NYMEX move to 24 hour operations? If so, big changes. |
| Williams: | Time focus need to allow for pipes to keep computer systems maintained. |
| PG&E: | 14 hour staff for scheduling.Evening cycle = critical for clean-up.Market will continue to trade in morning, as now. |
| Skipping Stone: | Expect marketers/customers to find each other. Not sure whether NYMEX and ICE would extend. Mostly electronic |
| Northern Natural Gas: | Computer maintenance window is key.We would need lawyers to have shift. |
| CAISO: | ISO = 24-hr. market system. Upgrades occur while market is operating. |
|  | Question RE: Hourly nominations? |
| Offshore: | The pipes that have a need, do it. We do that offshore to provide services. |
| Piedmont: | Scheduling cost; IT cost ($1.8 million in programming costs) and metering; testing |
| APS: | Waiting for hourly nominationsThey have 24/7 manned desk that the pipes asked for |
| ACES: | Would love to have hourly nominations, but can’t get it. |
| MGA of Georgia: | Strongly oppose hourly. Large number of cities and industrials (I.T.) |
| HEM: | Hourly could help provide flexibility even if a party didn’t choose to participate. |
| Tenaska: | Keep cost in mind as consider changes (and whether worth it)The more disruptive, the bigger hurdle. |
| National Fuel Gas Distribution: | Hourly nomination –If it’s opportunity for lots of options, for a time of gas flows perhaps many hours laterBut to consider 1 hour between nomination and gas flow, too fast.One thing to allow hourly (ok) but not to require hourly. |
| DTE Gas Co: | If some want hourly, they should pay for it. |
| Offshore: | Consider hourly profiles, versus being able to change each hour. |
| Skipping Stone: | 1) advanced hourly profile; 2) change hourly; 3) submit hourly |
| AEP: | Want ability to submit changes each hour |
| APS: | Ditto |
|  | **Commonalities**Given last meetings proposals, seems like there’s common- Timely Cycle (1-2 P.M. (Central) time frame) *Some opposition – need to discuss more*- Evening Cycle Proposals (6-6:30 P.M. (Central) time frame) |
| BP: | Don’t want to vote piecemealWant to vote on full packages of alternative |
| Skipping Stone: | Lots for the several areas of agreement |
| DSPS: | Agree on several key packagesTake straw votes |
| Oglethorpe: | Hard to consider packages if single main issue isn’t addressed. |
| Texas Gas Transmission: | Take non-binding straw man votes only now |
| HEM: | Ditto |
| Williams: | Ditto |
| National Grid: | Do straw votes to move toward items |
| AEP: | So straw poll on some simple things and then design packages. |

**Motion**: to take straw poll (vote) on:

A - timely (1-2 P.M. CT) – no earlier than 1 or later than 2

B - evening (6-6:30 P.M. CT)

1st = A & B

2nd = A

3rd = B

4th = 11:30 A.M. Timely + B

Tomorrow Motion: Straw Vote on Reaction Time

1 hour or 1.5 hour

Between:

Scheduled quantity for timely cycle and nomination deadline for evening cycle

|  |  |
| --- | --- |
| **Speaker** | **Discussion** |
| So Cal Gas: | Decision on reaction time interacts with view on minimum processing time |

TODAY + ?straw vote tomorrow

Intraday 3 versus Intraday 4 combined with time of last bumping cycle

(Also discuss real challenges associated with FERC’s NOPRs intraday schedule)

Also combine with reaction time

Issues

\* minimum processing time per cycle

\*start time and number of intraday cycles

Discussion of Intraday

| **Speaker** | **Discussion** |
| --- | --- |
| Skipping Stone: | 3 = driven by DSPS4= driven by a final cycle within which no bumpingso: 10 P.M. CT flow would constitute a bumpable cycle, and a no-bump would be after thatand: Minimum reaction time would take you to around 2 a.m.What if:I.T. puts in 2 nominations, 1st, if accepted is OK; if not then 2nd is new nomination.This would keep that last 10 p.m. as providing review of the 1st and 2nd nomination, with second contingent on first.If 3 is mutually exclusive with 4, then only one. If both possible, then both could be accepted. |
| BP: | Reaction times in NOPR |
| PG&E: | View that there is still a minimum processing time. |
| DSPS: | Idea of contingent nominations is helpful. The possibility of simultaneous nominations in multiple successive cycles could make a final cycle possible. |
| PG&E: | Allow ‘ranking’ of nominations and if you can’t make one, it then goes to the higher ranked nomination. |
| DTE Gas Co: | If can’t remove the no bump, want it to be as late as possible. |
| Southern Star: | Agnostic on bump / no bump. But if you move gas day to 4 a.m., then ok with 3 cycles. If leave day where it is, then late no bump. |
| Chevron: | 3 cycles = preferred (later v. earlier)Prepare to be bumped earlier, so can respondTiming is important in order to plan. If it happens late, then you have fewer options if bumped. Then the user also has fewer options to get gas. |
| BP: | If DSW has a reliability issue, what are barriers to schedule firm for worst case and then release if don’t need it. |
| DSPS: | It’s reliability and scheduling issue. Assume hot days; solar’s great, but then cloudy; and if she’d scheduled for worst, but then doesn’t need it, then there’s nowhere to put it.If there’s one day that’s hot, and we can’t bump, wouldn’t have enough gas. |
| Kinder Morgan: | Bumping is small fraction of time and small amount. So the DSPS hypothetical is unlikely. If pipeline is full, little IT scheduled. If pipe isn’t full, then it can be scheduled and not likely bumped. |
| DSPS: | Feb 2014: DSPS firm gas couldn’t flow due ti IT flow. Physical problemSolar is so significant that coal is backed out, and then only gas can respond if the solar goes away. |
|  | Question: Could contingent nomination work for El Paso and DSPS? |
| Kinder Morgan: | Supports eliminating the no bump cycle. |
| Skipping Stone: | The DSPS issues are real there in southwest. But other regions will also get this challenge.People who want to bump feel that way because the pipes are getting full and people have been used to having the ability to schedule IT and not risk being bumped. The situation is changing in Southwest and elsewhere lately.Northeast: No extra capacity anywayMidwest: plenty of capacity |
| Washington Gas Light Co: | DSPS not necessarily the canary- West has capacity- MW has capacity |
| DSPS: | Yes: no storage in Arizona area (desert aquifers issues) |
| Exelon: | If FERC says it’s ok to bump up to the last cycle, would it work for El Paso if last cycle is after 7 p.m.? |
| DSPS: | OK with us, as long as last no bump cycle is at 8 p.m. |
| BP: | Is it necessary to have a new national standard to address DSPS? |
| DSPS: | We straddle two zones (West, Mid-west) and the lack of liquidity would be a problem if we have an isolated local solution. |
| Skipping Stone: | The duck curve will show up in NY, PJM, other areas. Not just DSPS.The certainty of a last bump interacts positively with early start of gas day. |
| Devon: | If we get bumped late, it’s less liquid outside of normal business hours. Response time is longer.So if bumped, then what happened to supply that’s flowing? Where does it go in periods when the market is illiquid? Otherwise the gas gets shut in. |
| DSPS: | Want creative solutions for places for that flowing gas to go. |
| ACES: | If producers are flowing 100 % than why don’t they arrange for FT? |

**NAESB GAS-ELECTRIC HARMONIZATION FORUM Meeting**

**Tuesday, May 6, 2014 – 8:00 a.m. to 2:00 p.m. Central**

**May 6, 2014 Discussion of Issues and Possible Voting**

| **Speaker** | **Discussion** |
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| SRP: | RE: primary firm & secondary out of path.In bumping, IT can prevent access to FT. In practice, sometimes secondary moves ahead of primary firm. Electrics need to be able to access FT. |
| Xcel: | Agree: proposed solution would be to reserve firm path in timely nomination, and reserve it ahead of secondary out of path. |
| Colorado: | Have to buy secondary in Rockies, even with FT. |
| DSPS: | Issue of concern: some parties by FT path, and then later move to FT. All of this is to beat IT.We’ve tried to develop Long-term FT versus Short-term FT, as a way to send proper $ incentives to support infrastructure investment. Long-term = 1 year +. |
| NRG Energy: | Some delivered zones are highly liquid paths. Much of capacity is filled with secondary. If required to assure primary firm, it should be ok. |
| National Fuel Gas Distribution: | “primary’ means something different across pipes. This is a FERC policy issue because of economic issues. Not a NAESB issues. |
| NW Industrials: | Keep status quo. Bumping of firm shouldn’t occur. But firm should nominate in timely cycle. |
| DTE Gas Co: | We work within regulators |
| Piedmont: | Secondary out of path versus primary in path. Agree it’s an issue but, agree this is FERC issue. |
| National Grid: | Agree: FERC issue. But maybe super-firm reservation fee concept could be an approach for primary path. |
| New Jersey Natural: | Totally against the idea, and don’t think NAESB is place to deal with this issue. Need benefit and cost data on who it helps vs. who it hurts. |
| Piedmont: | Is the problem (in the Northeast) the situation where parties buy FT but get bumped by IT. |
| AEP: | Not just Northeast infrastructure issue. Midwest issues associated with retirement of coal fleet. |
| DSPS: | Although problems in Northeast are key, problems in Southwest are too. These issues relating to renewables will be coming up elsewhere. National issue. |
| HEM: | If policy issue, then move to next topics:Electric clearing timesEnergy day |
| National Fuel Gas Distribution: | If bumping rules change, then you could get a more chaotic scheduling process. So may be useful to have that super-capacity reservation. FERC issue. |
| ACES: | Gas is critically important to electric. But today’s discussion needs to focus on gas processing issues. Let’s assume that electric standards and processes will follow. This gas/electric issue is strategic issue for U.S.Could we take NOPR, assume there’ll be a single energy day, and focus on gas schedule and then let electrics follow suit. Maybe East West energy day? |
| Skipping Stone: | Think of the demarcation as aligned with Eastern and Western interconnections. |
| Valerie Crockett: | Electric Timelines?Energy Day (Single day)? |
| Macquarie Energy: | Want to talk about ISO activities re: gas/electric issues, to inform what we need to consider on gas side. |
| ISO-NE: | Hourly bids and offers: participants allowed to pattern bids to hourly gas issues. Pricing flexibility will be implemented by end of year.Pay for performance (PIP): still before FERC. 3-year lead time because it’s for capacity market. “Jump Ball” alternative proposal.Day ahead market moved earlier in day (in terms of scheduling). Tried to get in squeezed by trading and timely nomination. Couldn’t squeeze it in; though.NE’s physical load (starts at 2-3 a.m. Central Time) so perfect synch for us would be closer to National Grid’s proposal. This physical day isn’t discretionary. |
| PJM: | Market closes after timely nomination but we’re committed to working with stakeholders to follow gas changes. Agree with ISO-NE |
| CAISO: | For California, then 2-3 a.m. Central Time would mean 12-1 a.m. California time. Too early for us to shift to 2-3 a.m. Central TimeTimely Nom = 9 a.m.10 a.m. DA market start for CAISORetirement of coal: California essentially has no coal; 2/3 gas. Already had a 33% renewables day. Need sustainable solution to accommodate changes ahead in electric industry. |
| PG&E: | Regional solutions are critical. Ok with timely nomination before bid cycle. Open to considering multiple days. |
| Colorado: | Get input from customers in Rockies |
| MISO: | Updates in hourly offers = allowedRecent MISO South additions introduce lots of gas into system.Also facing resource adequacy issues in upcoming years. |
| HEM: | If ISO-NE moves bid deadline to 10 a.m., (Eastern Time) when does it clear?NYISO clears 10 a.m. Central Time (11 a.m. Eastern Time), then timely nominations. Why not coordinate electrics and not change gas times? |
| ISO- NE: | Current bids: 10 a.m. Eastern Time – 9 a.m. Central TimeClear: 1:30 p.m. Eastern Time – 12:30 p.m. Central Time |
|  | Discussion:Participants want gas-price discovery in a.m. before electric bids. |
| CLF: | In NE, there’s chicken & egg problem. FERC has said to schedule the gas day and identify issues for allocating scarce pipe capacity. Then assume electrics will follow. Whatever comes out of this process. |
| MISO: | Huge midcontinent footprint, with growing wind. Gas will be key in market. |
| HEM: | Electric markets need to respond to whatever comes out of gas side (FERC NOPR)Window of price discovery before bidThen timely nomination |
| AGA: | FERC came up with proposal, but they gave us the opportunity to come up with an alternative. |
| Xcel: | In 2 RTO’s (SPP, MISO), support the NOPR’s timing, to allow extra time for bids (and to get RTO’s to follow changes)Want 2 hours |
| Oglethorpe: | Don’t have same struggles as RTO’s. Still do see mismatches in gas and power day. Agree with ACES about need for single energy day. FERC says that gas should move first, then electrics can harmonize. |
| Valerie Crockett: | FERC 206 process has 90-day window after NAESB’s closes… |
| Washington Gas Light Co: | Agree with HEM. Maybe not implement gas changes until electrics move. Efficient staging of changes. |
| Skipping Stone: | Timely nomination – bidCHECK TRANSCRIPT FOR MORE DETAILS |