April 25, 2014

**TO:** NAESB GEH Forum, Board of Directors, Advisory Council, posting on the NAESB web site for interested parties

**RE:** Comparison of Proposals – GEH Forum Meeting, April 22-23, 2014

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Time Shifts (v3) All times CT | Current Std. | **NOPR** | NGC | INGAA | DSPS | SW Customers | IRC | Southern Co. | PGE-SoCal | NatGrid |
| Timely day-ahead Nom Deadline | 11:30 AM | 1:00 PM | 1:00 PM | 1:00 PM | 11:30 AM | 1:00 PM | 2:00 PM | 1:00 PM | 1:00 PM | 1:00 PM |
| Confirmations |  |  | 4:30 PM | 4:30 PM |  |  |  | 4:30 PM | 4:30 PM | 4:30 PM |
| Schedule Issued | 4:30 PM | 4:30 PM | 5:00 PM | 5:00 PM | 4:30 PM | 4:30 PM | 4:30 PM | 5:00 PM | 5:00 PM | 5:00 PM |
| Start of Gas Flow | 9:00 AM | 4:00 AM | 9:00 AM | 4:00 AM | 5:00 AM | 5:00 AM | 4:00 AM | 4:00 AM | 7:00 AM | 2:00 AM |
| Reaction Time\* | 1.5 hours | 1.5 hours | 1.5 hours | 1.5 hours | 1.5 hours | 2 hours | 1.5 hours | 1.5 hours | 1 hours | 1.5 hours |
| Process Time | 5 hours | 3.5 hours | 4 hours | 4 hours | 5 hours | 3.5 hours | 2.5 hours | 4 hours | 4 hours | 4 hours |
|  |  |  |  |  |  |  |  |  |  |  |
| Evening Day-ahead Nom Deadline | 6:00 PM | 6:00 PM | 6:30 PM | 6:30 PM | 6:00 PM | 6:30 PM | 6:00 PM | 6:30 PM | 6:30 PM | 6:30 PM |
| Confirmations | 9:00 PM | 9:00 PM | 9:00 PM | 9:00 PM | 9:00 PM | 9:00 PM | 9:00 PM | 9:00 PM | 9:00 PM | 9:30 PM |
| Schedule Issued | 10:00 PM | 10:00 PM | 9:30 PM | 9:30 PM | 10:00 PM | 10:00 PM | 10:00 PM | 10:00 PM | 9:30 PM | 10:00 PM |
| Start of Gas Flow | 9:00 AM | 4:00 AM | 9:00 AM | 4:00 AM | 5:00 AM | 5:00 AM | 4:00 AM | 4:00 AM | 7:00 AM | 2:00 AM |
| Process Time | 4 hours | 4 hours | 3 hours | 3 hours | 4 hours | 3.5 hours | 4 hours | 3.5 hours | 3 hours | 3.5 hours |
|  |  |  |  |  |  |  |  |  |  |  |
| ID1 Nom Deadline | 10:00 AM | 8:00 AM | 9:00 AM | 10:00 AM | 10:00 AM | 9:00 AM | 8:00 AM | 8:00 AM | 9:00 AM | 7:00 AM |
| Confirmations | 1:00 PM | 10:00 AM | 11:30 AM | 12:30 PM | 1:00 PM | 12:00 Noon | 10:00 AM | 10:00 AM | 11:30 AM | 9:00 AM |
| Schedule Issued | 2:00 PM | 11:00 AM | 12:00 Noon | 1:00 PM | 2:00 PM | 12:00 Noon | 11:00 AM | 11:00 AM | 12:00 Noon | 9:00 AM |
| Start of Gas Flow | 5:00 PM | 12:00 Noon | 3:00 PM | 2:00 PM | 5:00 PM | 3:00 PM | 12:00 Noon | 12:00 Noon | 1:00 PM | 10:00 AM |
| Hours of Flow | 16 hours | 16 hours | 18 hours | 14 hours | 12 hours | 18 hours | 16 hours | 16 hours | 18 hours | 16 hours |
| IT Bump Rights | bumpable | bumpable | bumpable | bumpable | bumpable | bumpable | bumpable | bumpable | bumpable | bumpable |
| EPSQ | 33% | 33% | 25% | 42% | 50% | 25% | 33% | 33% | 25% | 33% |
| Reaction Time | 3 hours | -0.5 hours | 2 hours | 1.5 hours | 5 hours | 2 hours | -0.5 hours | 1 hour | 2.5 hours | 2 hours |
| Process Time | 4 hours | 3 hours | 3 hours | 3 hours | 4 hours | 3hours | 3 hours | 3 hours | 3 hours | 2 hours |
| Time Shifts (v2) All times CT | Current Std. | **NOPR** | NGC | INGAA | DSPS | SW Customers | IRC | Southern Co. | PGE-SoCal | NatGrid |
| ID2 Nom Deadline | 5:00 PM | 10:30 AM | 2:00 PM | 2:30 PM | 7:00 PM | 2:00 PM | 10:30 AM | 12:00 Noon | 2:30 PM | 11:00 AM |
| Confirmations | 8:00 PM | 1:00 PM | 4:00 PM | 5:00 PM | 8:00 PM | 3:30 PM | 1:00 PM | 2:00 PM | 5:00 PM | 1:30 PM |
| Schedule Issued | 9:00 PM | 2:00 PM | 4:30 PM | 5:30 PM | 9:00 PM | 4:30 PM | 2:00 PM | 3:00 PM | 5:30 PM | 2:00 PM |
| Start of Gas Flow | 9:00 PM | 4:00 PM | 9:00 PM | 6:00 PM | 10:00 PM | 6:00 PM | 4:00 PM | 4:00 PM | 7:00 PM | 2:00 PM |
| Hours of Flow | 12 hours | 12 hours | 12 hours | 10 hours | 7 hours | 10 hours | 12 hours | 12 hours | 12 hours | 12 hours |
| IT Bump Rights | **no bump** | bumpable | bumpable | bumpable | bumpable | bumpable | bumpable | bumpable | bumpable | bumpable |
| EPSQ | 50% | 50% | 50% | 58% | 71% | 58% | 50% | 50% | 50% | 50% |
| Reaction Time |  | 2 hours | 4.5 hours | 2.5 hours | 1 hour | 2.5 hours | 2 hours | 1 hour | 1.5 hours | 3 hour |
| Process Time | 4 hours | 3.5 hours | 2.5 hours | 3 hours | 2 hours | 2.5hours | 3.5 hours | 3 hours | 3 hours | 3 hours |
|  |  |  |  |  |  |  |  |  |  |  |
| ID3 Nom Deadline |  | 4:00 PM | NA | NA | NA | 7:00 PM | 4:00 PM | 4:00 PM | 7:00 PM | 5:00 PM |
| Confirmations |  | 5:00 PM | NA | NA | NA | 7:30 PM | 5:00 PM | 5:30 PM | 9:30 PM | 7:30 PM |
| Schedule Issued |  | 6:00 PM | NA | NA | NA | 8:30 PM | 6:00 PM | 6:30 PM | 10:00 PM | 8:00 PM |
| Start of Gas Flow |  | 7:00 PM | NA | NA | NA | 9:00 PM | 7:00 PM | 8:00 PM | 11:00 PM | 8:00 PM |
| Hours of Flow |  | 9 hours | NA | NA | NA | 8 hours | 9 hours | 8 hours | 8 hours | 6 hours |
| IT Bump Rights |  | bumpable | NA | NA | NA | bumpable | bumpable | bumpable | bumpable | **no bump** |
| EPSQ |  | 63% | NA | NA | NA | 67% | 63% | 67% | 67% | 75% |
| Reaction Time |  | 1 hour | NA | NA | NA | .5 hours | 1 hour | 1 hour | 0.5 hours | 1 hour |
| Process Time |  | 2 hours | NA | NA | NA | 1.5hours | 2 hours | 2.5 hours | 3 hours | 3 hours |
|  |  |  |  |  |  |  |  |  |  |  |
| ID4 Nom Deadline |  | 7:00 PM | 9:00 PM | 7:00 PM | 10:00 PM | 9:00 PM | 7:00 PM | 7:30 PM | 10:30 PM | 9:00 PM |
| Confirmations |  | 8:00 PM | 11:00 PM | 9:30 PM | 12:00 AM |  | 8:00 PM | 9:00 PM | 1:00 AM | 11:00 PM |
| Schedule Issued |  | 9:00 PM | 11:30 PM | 10:00 PM | 1:00 AM | 10:00 PM | 9:00 PM | 10:00 PM | 1:30 AM | 11:00 PM |
| Start of Gas Flow |  | 9:00 PM | 12:00 AM | 10:00 PM | 1:00 AM | 11:00 PM | 9:00 PM | 10:00 PM | 3:00 AM | 12:00 AM |
| Hours of Flow |  | 7 hours | 9 hours | 6 hours | 4 hours | 6 hours | 7 hours | 6 hours | 2 hours | 2 hours |
| IT Bump Rights |  | **no bump** | **no bump** | **no bump** | **no bump** | **no bump** | **no bump** | **no bump** | **no bump** | **no bump** |
| EPSQ |  | 71% | 63% | 75% | 83% | 75% | 71% | 75% | 83% | 92% |
| Process Time |  | 2 hours | 2.5 hours | 3 hours | 3 hours | 1 hours | 2 hours | 3 hours | 3 hours | 2 hours |
|  |  |  |  |  |  |  |  |  |  |  |
| Nomination Span | **8 hours** | 11 hours | 12 hours | 9 hours | 12 hours | 12 hours | 11 hours | 11.5 hours | 13.5 hours | 14 hours |
|  |  |  |  |  |  |  |  |  |  |  |

NOTES:

1. Schedule issue to next nom deadline = reaction time
2. Process Time = Nomination Deadline to Schedule Issued
3. Nomination Span is the number of hours between the first and last nomination deadline in a day.

Questions based on the discussions from April 22/23:

1. Are there additional pipeline services that can help ensure that shippers do not run out of gas during ramp periods that could be developed in conjunction with a less severe change to the gas day (e.g., 7 am CCT as opposed to 4 am).
2. Would there be benefits to starting the gas day in the early evening (9 pm). This could have the following advantages: day-ahead scheduling would be closer to start time (and therefore more accurate based on weather forecasts); producers and LDCs could make manual adjustments during daylight hours; and sufficient bumping and no-bumping intra-day nominations could still be employed to make final adjustments to gas schedules for afternoon changes during the tail-end of the gas day; and these nominations would occur during normal business hours so that bumped gas could be redirected.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Concepts (v3)  All times CT | Current Std. | **NOPR** | WGL-Pied1 | Hess2 | NNG3 | AEP4 | SkipStone-CLF5 |
| Timely day- ahead Nom Deadline | 11:30 AM | 1:00 PM | 11:30 AM | 11:30 AM | 4 hours |  | 1:30 PM |
| Confirmations |  |  |  |  |  | 2:30 PM |
| Schedule Issued | 4:30 PM | 4:30 PM | 4:30 PM | 4:30 PM |  | 3:30 PM |
| Start of Gas Flow | 9:00 AM | 4:00 AM | 9:00 AM | 9:00 AM |  | 4:00 AM | 6:00 AM |
| Reaction Time\* | 1.5 hours | 1.5 hours | 1.5 hours | 1.5 hours | 1 hour |  | 2 hours |
|  |  |  |  |  |  |  |  |
| Evening day-ahead Nom Deadline | 6:00 PM | 6:00 PM | 6:00 PM | 6:00 PM | 4 hours |  | 5:30 PM |
| Confirmations | 9:00 PM | 9:00 PM | 9:00 PM | 9:00 PM |  | 6:30 PM |
| Schedule Issued | 10:00 PM | 10:00 PM | 10:00 PM | 10:00 PM |  | 7:30 PM |
| Start of Gas Flow | 9:00 AM | 4:00 AM | 9:00 AM | 9:00 AM |  |  | 6:00 AM |
|  |  |  |  |  |  |  |  |
| ID1 Nom Deadline | 10:00 AM | 8:00 AM | 10:00 AM | 10:00 AM | 4 hours | HOURLY | 8:00 AM |
| Confirmations | 1:00 PM | 10:00 AM | 1:00 PM | 1:00 PM |  | 9:00 AM |
| Schedule Issued | 2:00 PM | 11:00 AM | 2:00 PM | 2:00 PM |  | 10:00 AM |
| Start of Gas Flow | 5:00 PM | 12:00 Noon | 5:00 PM | 5:00 PM |  | HOURLY | 12:00 Noon |
| Hours of Flow | 16 hours | 16 hours | 16 hours | 16 hours |  | HOURLY | 18 hours |
| IT Bump Rights | bumpable | bumpable | bumpable | bumpable | bumpable | bumpable | bumpable |
| EPSQ | 33% | 33% | 33% | 33% |  |  | 25% |
| Reaction Time | 3 hours | **-0.5 hours** | 3 hours | 3 hours | 1 hour |  | 2 hours |
|  |  |  |  |  |  |  |  |
| ID2 Nom Deadline | 5:00 PM | 10:30 AM | 5:00 PM | 5:00 PM | 4 hours | HOURLY | 1:00 PM |
| Confirmations | 8:00 PM | 1:00 PM | 8:00 PM | 8:00 PM |  | 2:00 PM |
| Schedule Issued | 9:00 PM | 2:00 PM | 9:00 PM | 9:00 PM |  | 3:00 PM |
| Start of Gas Flow | 9:00 PM | 4:00 PM | 9:00 PM | 9:00 PM |  | HOURLY | 5:00 PM |
| Hours of Flow | 12 hours | 12 hours | 12 hours | 12 hours |  | HOURLY | 13 hours |
| IT Bump Rights | **no bump** | bumpable | **no bump** | **no bump** | bumpable | bumpable | bumpable |
| EPSQ | 50% | 50% | 50% | 50% |  |  | 46% |
| Reaction Time |  | 2 hours |  |  | 1 hour |  | 2 hours |
|  |  |  |  |  |  |  |  |
| ID3 Nom Deadline |  | 4:00 PM |  |  | 4 hours | HOURLY | 5:00 PM |
| Confirmations |  | 5:00 PM |  |  |  | 6:00 PM |
| Schedule Issued |  | 6:00 PM |  |  |  | 7:00 PM |
| Start of Gas Flow |  | 7:00 PM |  |  |  | HOURLY | 10:00 PM |
| Hours of Flow |  | 9 hours |  |  |  | HOURLY | 8 hours |
| IT Bump Rights |  | bumpable |  |  | bumpable | bumpable | bumpable |
| EPSQ |  | 63% |  |  |  |  | 67% |
| Reaction Time |  | 1 hour |  |  | 1 hour |  | 1 hour |
|  |  |  |  |  |  |  |  |
| ID4 Nom Deadline |  | 7:00 PM |  |  |  | 2:00 AM | 8:00 PM |
| Confirmations |  | 8:00 PM |  |  |  |  | 9:00 PM |
| Schedule Issued |  | 9:00 PM |  |  | 10:00 PM |  | 10:30 PM |
| Start of Gas Flow |  | 9:00 PM |  |  |  | 3:00 AM | 2:00 AM |
| Hours of Flow |  | 7 hours |  |  |  | 1 hour | 4 hours |
| IT Bump Rights |  | **no bump** |  |  | **no bump** | **no bump** | **no bump** |
| EPSQ |  | 71% |  |  |  | 4% | 83% |
| Nomination Span | 8 hours | 11 hours | 8 hours | 8 hours | Uncertain | 24 hours | 12 hours |

NOTE: The Nomination Span is the number of hours between the first and last nomination deadline in a day.

1 Washington Gas Light & Piedmont Natural Gas Company - Suspend further discussions on any changes to the gas day or schedule for up to one year until electric interest reaches consensus on;

1. Electric market rules/tariffs require firm deliveries or no-notice service to support reliability needs.
2. Adoption of uniform national electric day.
3. Adoption of uniform national day-ahead electric market clearing times.
4. Day-ahead electric markets close prior to Timely gas nomination cycle.

2 Hess / Direct Energy

* Solutions through reducing organized market clearing times.
* Bidding reflecting 2 physical gas days & use of capacity markets.
* Expanding pipeline flexibility via EPSQ, No-notice services, retro/post cycle true-ups, imbalance tolerances.

3 Northern Natural Gas\*\* / MidAmerican Energy – 8 general principles;

\*\* NNG offers a 23rd hour true-up cycle

1. Nomination processing time of 4 hours for all cycles
2. 60 minutes between cycles
3. Unique nomination deadlines
4. Latest evening nomination concludes by 10:00 pm
5. EDI and Online nominations simultaneous
6. Three (3) intra-day cycles adequate
7. Final cycles occurs NNG normal working hours
8. Adequate computer system maintenance window is required

4 AEP

* Hourly nominations mitigate gas day start time and gas versus power day
* Can also accept a 2 am gas day start
* Single no-bump cycle should occur late in day

5 Skipping Stone / Conservation Law Foundation

* “Energy Day” concept starting at 6 am, or
* Two Energy Days - Eastern/Central time zones and Mountain/Pacific time zones.
* Gas nom deadlines around electric on-off peak power periods (i.e. 5x16)
* Capacity release available prior to nominations to meet market needs