CASCADE NATURAL GAS CORPORATION
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June 20, 2014

Mr. Steven King, Executive Director & Secretary
Washington Utilities & Transportation Commission
P.O. Box 47250
Olympia, WA 98504-7250

RE: Cascade Natural Gas Corporation Supplemental Update to the 2012 Integrated Resource (Docket **UG-140008)**

Dear Mr. King:

Pursuant to a request by Washington Utilities & Transportation Commission staff during a capacity workshop held on May 5, 2014, Cascade Natural Gas (CNGC) is providing an update to subject Integrated Resource Plan (IRP).

If there are any questions regarding this matter, please me at (509) 734-4589 or via email at mark.sellers-vaughn@cngc.com.

Sincerely,
CASCADE NATURAL GAS CORPORATION

Mark Sellers-Vaughn
Manager, Supply Resource Planning

Enclosures

Cascade Natural Gas Corporation's Supplemental Update to the 2011 IRP (OPUC LC-54) and to the 2012 IRP (WUTC UG-140008)

As required subsequent to OPUC Order 14-054 dated February 18, 2014, and as requested by WUTC Staff during a capacity workshop held on May 5, 2014, Cascade Natural Gas (CNGC) is providing an update to subject Integrated Resource Plans (IRP).

Background

Earlier this year CNGC requested filing extensions for our next IRPs from both the Oregon Public Utility Commission and the Washington Utilities & Transportation Committee. CNGC requested the extensions in order to implement significant improvements to our load forecast modeling/methodology and to provide a more detailed analysis of our forecast by switching from a zonal to a more citygate level view. This change will allow CNGC to perform a more detailed load analysis that will provide the Company and stakeholders with better information to assess the system capacity, storage and supply needs to meet long term demand. In addition to developing a new Microsoft Excel based forecast model, the change requires a time consuming wholesale reconfiguration of the Ventyx SENDOUT optimization planning model. The major stakeholders agreed that a concurrent filing for OR and WA made the most sense with a targeted IRP filing date of February 11, 2014 (dockets Oregon LC-59 and Washington UG-140181). The extension was approved February 18, 2014 by OPUC (Order 14-054) and by the WUTC on February 27, 2014 (Order 01, UG-140181). However, OPUC agreed to the extension subject to CNGC holding two workshops addressing CNGC's unique upstream pipeline capacity situation and discussing the potential for CNGC to acquire additional Ruby capacity prior to October, 2014. Lastly, the OPUC order required CNGC to file an update to the 2011 IRP by June 20, 2014.

The update requirement is because CNGC has a potential option to acquire additional capacity on the Ruby Pipeline at reduced rates. This option expires in October, 2014. The potential incremental capacity on Ruby and GTN would mainly be used to serve CNGC's Central Oregon service territory, but also has operational flexibility that could benefit the entire distribution system. Analysis evaluating the Ruby Pipeline capacity was expected to be included in the required IRP update. If CNGC's analysis ultimately showed the need for additional Ruby capacity (and corresponding GTN south-to-north transport), CNGC planned to seek acknowledgement for the capacity package in the update filing.

The first stakeholder workshop was held Tuesday, April 8, 2014 at the Portland International Airport Conference Center. This first workshop featured an overview by Northwest Pipeline personnel about operating conditions that have impacted capacity on their system and the background behind CNGC's incongruous receipt capability vs delivery rights. Ruby personnel provided an overview of CNGC's existing seasonal Ruby capacity, and discussed the components and alternatives of the incremental Ruby Pipeline capacity option. GTN personnel described their operational and capacity capabilities with a specific focus on their south to north service, of which CNGC currently holds transport capacity to match up with the existing Ruby capacity. If additional Ruby capacity is acquired, incremental south to north GTN capacity would also be required. The second stakeholder workshop was held Monday, May 5, 2014 at Northwest Natural's Headquarters in Portland, OR. The second workshop addressed follow-up

questions regarding load demand from this past heating season, provided an analysis of potential Ruby incremental capacity opportunities, and discussed some draft IRP update language. These workshops were well attended. Various members of each Commission's staffs, and other interested parties such as the Citizen Utility Board of Oregon, Northwest Gas Association, Northwest Industrial Gas Users, and Public Counsel for Washington participated in the workshops in person or via the WebEx sessions.

At the time of the capacity workshops, CNGC was considering the Ruby-GTN incremental capacity options to deliver Rockies gas to Central Oregon and/or to Stanfield where it could be moved on NWP to serve Washington. There was also the possibility of obtaining Ryckman Creek storage near Opal, which would provide Oregon with a principle storage account for the first time while also adding to CNGC's operational flexibility. CNGC's Gas Supply Oversight Committee (GSOC) was scheduled to meet on June 13 to decide which, if any, of the options should be executed in the best interest of ratepayers.

However, CNGC has now gone from having one viable option for storage (Ryckman Creek) as of the May 5 capacity workshop, to now four viable storage options, some which can be combined with incremental Ruby capacity. All four alternatives would require incremental GTN capacity. The latest storage resource alternatives are incremental Plymouth LNG (proposed by NWP on May 16, 2014), Gill Ranch storage that can be utilized at Malin/Turquoise Flats (proposed by Tenaska Marketing/Gill Ranch, late last week) and most recently Wild Goose Gas Storage that can be utilized at Malin/Turquoise Flats (proposed by Niska Partners June 16, 2014). Each of these options requires considerable effort to analyze, model, and determine a recommendation to make to GSOC for any action prior to August 2014.

Unfortunately, the GSOC meeting date of June 13 did not leave reasonable time for the Gas Supply department to properly analyze the various storage/transport alternatives and develop a recommendation for GSOC to consider. GSOC was alerted to these issues and decided to postpone the next meeting until late July in order to give the Gas Supply department more time to perform the needed analysis and modeling. However, as a result of the GSOC meeting postponement, CNGC would not be able to provide a specific resource determination in time for the required June 20th IRP update filing. CNGC consulted with OPUC Staff regarding these new developments and it was determined that the IRP update would focus on the elements of the various alternatives, with the explanation that after further analysis a determination will be made by GSOC on which option, if any, is in the best interest of ratepayers. Additionally, it should be noted that these resource options will also be discussed in detail along with other, less time-sensitive resource alternatives as part of the public Technical Advisory Group meetings that will be held between late June 2014 and December 2014 as part of the Integrated Resource Plan process.

In general, the storage/transport alternatives requiring GSOC consideration by August 2014 are:

- Incremental Ruby (discount option expires October 2014), stand alone and/or in conjunction with Ryckman Creek, Wild Goose or Gill Ranch storage

- Incremental GTN South to North and North to South to accompany any incremental storage to serve Central Oregon
- Ryckman Creek storage to serve Central Oregon
- Gill Ranch storage from Malin/Turquoise Flats to serve Central Oregon to serve Central Oregon
- Wild Goose storage to serve Central Oregon
- Incremental Plymouth LNG storage to serve Central Oregon

Additional observations and comments regarding the alternatives:

- Each storage alternative can be sized between 350,000 to 500,000 dths of working inventory
- Each storage alternative will be modeled as much as possible to allow for an "apples to apples" comparison.
- All storage alternatives allow for Rockies gas to be used for injections—however, Gill Ranch, Wild Goose and Ryckman can be more easily filled with Rockies as we would use Ruby as the principle injection pipeline. Plymouth is a less flexible option for injections from Rockies supplies due to potential operational constraints on NWP (e.g. Kemmerer and Plymouth compressors).
- GTN is the common pipeline in all four storage alternatives for making deliveries to Central Oregon
- All four storage options are being modeled as long term resource solutions
- Gill Ranch and Wild Goose will require CNGC to also determine if CNGC should acquire the corresponding transport from facilities along PG&E to the Malin/Turquoise Flats interconnect with GTN. Alternatively, CNGC could also contract with a third party to handle the PG&E segment of the transport.
- Regarding incremental Plymouth: CNGC has requested that NWP allow primary firm capacity instead of the typical secondary firm transport from the LNG facility to the Stanfield Interconnect with GTN. We have also inquired if NWP would allow primary firm transport from Plymouth LNG to Washington points for added operational flexibility.
- CNGC is seeking confirmation from Ryckman that the nitrogen plant will be up and running by the projected start date of any CNGC acquisition of a storage position with Ryckman. Ryckman has the most flexibility with Ruby, but CNGC will also have to determine if some level of NWP deliverability/injection capability may be available.

It is highly unusual to have so many storage alternatives available at any one time, particularly in the Pacific Northwest. CNGC feels strongly that it would be imprudent as an LDC for us not to take the appropriate time to consider these alternatives. GSOC is expected to make decision in late July regarding the options. Upon GSOC issuing a decision on the alternatives described above, CNGC will notify all IRP stakeholders as soon as practical, via email or communicated as part of the Quarterly meetings with Staff, or at a subsequent IRP TAG meeting. Additionally, CNGC can also file another IRP update at that time should either or both Commission staffs prefer.

The following chart describes some of the major components of each option that must be modeled using the Ventyx SENDOUT optimization model application as part of the analysis of determining if any option or combination of options should be considered by GSOC for implementation:

Model Name	Type	Start Date	End Date	Daily MDQ (Dths)	Description	Cost Dths	Additional Comments	Pipeline	FUEL
INCR-GTN-NB	Transportation capacity	11/2014	OPEN	VARIABLE, between 5,000 and 20,000	Turquoise Flats (Near Malin) l to Central OR and Stanfield Interconnect	Mileage based, approx. $0.163812893 to furthest NB point		GTN	LESS THAN 2%
INCR-RUBY-1	Transportation capacity	11/2014	10/2039	Nov-Apr up to 20,000	Pearl Creek to Turquoise Flats (Near Opal to Near Malin)	$ 0.75		RUBY	LESS THAN 2%
INCR-RUBY-2	Transportation capacity	11/2014	10/2039	Annual 5000 base plus up to 15000 peaking Nov-Apr	Pearl Creek to Turquoise Flats	$ 0.75		RUBY	LESS THAN 2%
INCR-RUBY-3	Transportation capacity	11/2014	10/2039	Annual 5000 base plus up to 7500 peaking Nov-Apr	Pearl Creek to Turquoise Flats	$ 0.75		RUBY	LESS THAN 2%
INCR-RUBY-REL	Transportation capacity	11/2014	7/2021	Annual Up to 10000	Pearl Creek to Onyx Hill	$ 0.35	Cap Rel avail now	RUBY	LESS THAN 2%
INCR-RUBY-4	Transportation capacity	11/2015	OPEN	Nov-April up to 20000	Pearl Creek to Turquoise Flats (Near Opal to Near Malin)	$ 1.03		RUBY	LESS THAN 2%
INCR-RUBY-5	Transportation capacity	11/2015	OPEN	Annual up to 20000	Pearl Creek to Turquoise Flats (Near Opal to Near Malin)	$ 1.03		RUBY	LESS THAN 2%
INCRM-NGTL	Transportation capacity	11/2016	10/2028	Annual 15000	Firm delivery from AECO at A/BC Border	$ 0.15910		NOVA	Not applicable
INCRM-FOOT	Transportation capacity	11/2016	10/2028	Annual 15000	A/BC Border to Kingsgate	$ 0.0760		FOOTHILLS	LESS THAN 2%
INCR-GTN-SB	Transportation capacity	11/2014	OPEN	Annual 15000	Kingsgate to OR taps, Starr Road and/or Stanfield	Mileage based, $0.26432 if to furthest SB tap)		GTN	LESS THAN 2%

Model Name	Type	Start Date	End Date	Daily MDQ (Dths)	Description	Cost Dths	Additional Comments	Pipeline	FUEL
INCREM-PLYMOUTH	Storage	11/2015	OPEN	Working Inventory 350000 with approx. 15000 WD capability	Incremental Plymouth LNG on NWP, delivered to GTN at Stanfield for delivery to Central Oregon (also possible Plymouth LNG on NWP to Washington points	Firm re-delivery $0.41, Demand Charge at $0.02587 Capacity Charge at $0.00331 Liquefaction $0.90855 Vaporization $0.03386	Available only ***IF*** Northwest Natural and/or Puget Sound Energy gives notice in 10/2014 to terminate their LNG contract (they expire 10/2015)	NWP, GTN	3.12%
RYCKMAN	Storage	4/2015	OPEN	Working Inventory 500000 with approx. 14700 WD capability	Ryckman Creek storage near Opal, principally flowing via Ruby to GTN to Central Oregon and/or on to Stanfield for deliveries to WA points on NWP.	Annual MSQ negotiable. Current market seems to be $0.07, tariff commodity cost is $0.015 for injections and $0.01 for withdrawals	Assume only Ruby withdrawal	RUBY, GTN	2.50%
GILL RANCH	Storage	4/2015	OPEN	Working Inventory 500000 with approx. 2300 WD capability	Gill Ranch Storage in California, flowing via PG&E to GTN to serve Central Oregon and/or on to Stanfield for deliveries to WA points on NWP. Injections may come from Ruby	Negotiable--Monthly Resv Chrg $0-$36, Monthly Delv Chrg $0-300, Inv Xfer fee $0-$10, Fuel 0 to 5%, Auth Overrun $0-$100. Awaiting updated proposal for modeling	Requires PG&E Transport	PG&E, GTN, RUBY	1.50%
WILD GOOSE	Storage	4/2015	OPEN	Working Inventory 500000 with approx. 2300 WD capability	Wild Goose Storage in California, flowing via PG&E to GTN to serve Central Oregon and/or on to Stanfield for deliveries to WA points on NWP. Injections may come from Ruby	Commodity Charges: $0.02/Dth on injection and withdrawal; Injection and Inventory rates are negotiable. Modeling using $0.09813 for Inj Demand, $0.36 for Inv Demand and $0.0662 for WD demand--based on Appendix B of their tariff	Requires PG&E Transport	PG&E, GTN, RUBY	Fuel: 0.50% on injection 0.50% on withdrawal

Model Name	Type	Start Date	End Date	Daily MDQ (Dths)	Description	Cost Dths	Additional Comments	Pipeline	FUEL
PG&E	Transportation capacity	4/2015	OPEN	Approx. 2400 dths/day	PG&E Mission to Off System (PG&E's Citygate location, an On-System Delivery Point, PG&E's storage facilities, or a third party's storage facilities located in PG&E's service territory)	Monthly SFV rate is $7.86 X CD (equates to approximate daily rate of $0.25878 per dth)	CNGC would have to elect Straight Fixed Variable (SFV) rate structure under G-AFTOFF, so that the On-System Delivery Point within the transmission path contracted can be used as an alternate delivery point.	PG&E	TBD