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BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of the Request of Dominion Energy Utah for Approval of a Voluntary Resource Decision to Construct an LNG Facility	Docket No. 19-057-13

PREFILED DIRECT TESTIMONY OF DAVID SCHULTZ

Magnum Midstream Energy Holdings, LLC ("Magnum") hereby submits the Prefiled Direct Testimony of David Schultz Townsend in this docket.

DATED this 15th day of August 2019.

HATCH, JAMES & DODGE

Phillip J. Russell
Attorneys for Magnum Midstream Energy Holdings, LLC

Certificate of Service
Docket No. 19-057-13

I hereby certify that a true and correct copy of the foregoing was served by email this 15th day of August 2019 on the following:

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BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of the Request of Dominion Energy Utah for Approval of a Voluntary Resource Decision to Construct an LNG Facility	Docket No. 19-057-13

Direct Testimony of David Schultz

On Behalf of

Magnum Midstream Energy Holdings, LLC

August 15, 2019

Q. Please state your name and business address.

A. My name is David Schultz. My business address is 35 Lake Mist Drive, Sugar Land Texas, 77479.

Q. By whom are you employed and in what capacity?

A. I am an independent consultant contracted by Magnum Energy Midstream Holdings, LLC, a subsidiary of Magnum Development, LLC ("Magnum"). I have been hired to assist Magnum in its efforts to develop and build its proposed underground natural gas storage cavern and associated pipeline at its Western Energy Hub located near Delta, Utah.

Q. Please describe your educational background.

A. I hold a Bachelor of Arts degree from the San Diego State University.

Q. Please describe your professional experience and background.

A More than 35 years of my professional career has been focused in the natural gas and power sectors. My most pertinent experience to this proceeding includes being a Senior Vice President for LNG America where we sought to bring liquified natural gas ("LNG") as a fuel to marine and land-based markets in the US. Prior to that, I worked in various senior management roles at AGL Resources, including the start-up of Pivotal LNG where we focused on bringing LNG from the utility's LNG and merchant plants to land and marine uses. In that role, I was responsible for the operations of the Pivotal LNG's merchant LNG operations, sales and marketing, planning, evaluation, and design decisions regarding the possible construction and operations of proposed LNG facilities of a similar size to LDC peaking facilities. During my time at AGL and Pivotal, I

became intimately familiar with the safety of such LNG facilities, and their capital and operating costs. This understanding applies to both new and existing utility and merchant owned LNG facilities, where I came to be fully familiar with AGL's LNG utility operations. Prior to that role at AGL Resources, I developed AGL's 18 BCF of working gas capacity at Golden Triangle Storage Project near Beaumont, Texas on the Spindletop Salt Dome. In that role, I became intimately familiar with the design and safety of underground natural gas storage facilities, including permitting, construction, capital cost and operating cost. Prior to that role at AGL I, was responsible for the development of a nearly $3.0 billion LNG Import facility in Virginia. A copy of my curriculum vitae is attached as Magnum Exhibit 1.1.

Background Information

Q. Can you please provide some background information on Magnum and the Western Energy Hub?

A. Magnum is focused on developing, under the umbrella of the Western Energy Hub, multiple portfolio companies, which are in various stages of development: natural gas storage, compressed air energy storage, crude and industrial gases (hydrogen and helium) storage. Each of these portfolio companies take advantage of the unique salt dome geological resource where underground caverns will be created for the storage of the various products. The company is actively engaged in commercial discussions with significant customers for each of its business verticals.

At the heart of Magnum's Western Energy Hub is the only known "Gulf Coast" style domal-quality salt formation in the western United States, located near Delta, Utah. Magnum and the Western Energy Hub was originally funded by Haddington Energy

Partners III, LP in 2008 to support a variety of projects centered around this large salt body. With capital and support from Haddington Ventures LLC, Magnum has defined the salt dome extent and key characteristics and has secured key assets for multiple projects (land, minerals, water, etc.). Resources committed to date at the Western Energy Hub have significantly de-risked both site development and the creation of salt storage caverns, thus expediting and de-risking future underground storage cavern development and related business opportunities.

The Western Energy Hub's site viability and business efficacy has been proven by the successful development, commercialization, and continuing operation of Magnum NGLs, LLC. In 2015 Magnum NGLs, LLC was sold to NGL Energy Partners (NYSE:NGL). To date, five caverns have been developed at the Western Energy Hub with approximately 6.1 million barrels of combined storage capacity, and significant access to available rail and truck transportation. In March 2018, Magnum entered into a new joint venture with NGL Energy Partners.[1]

It should be noted that the Delta salt dome provides Utah a very unique advantage. The project represents the only known large, domal-style salt structure in the western United States suitable for natural gas storage with multi-turn capability. This multi-turn capability allows storage service customers to withdraw and inject their full

[1] On March 1, 2018, NGL Energy Partners LP (NYSE:NGL) and Magnum Liquids, LLC, a portfolio company of Haddington Ventures LLC ("Haddington"), along with Magnum Development, LLC and other Haddington sponsored investment entities (collectively "Magnum") announced the formation of a joint venture to focus on the storage of natural gas liquids and refined products by combining NGL's Sawtooth Storage Facility ("Sawtooth", a natural gas liquids storage facility with 6.1 million barrels of capacity in five existing salt caverns, including rail and truck access to Western U.S. markets located southwest of Salt Lake City, Utah) with Magnum's refined products rights and adjacent leasehold. NGL will own approximately 67.6% of the joint venture and Magnum will own the remaining 32.4% at closing. Magnum will have an option to acquire an additional 21.6% interest from NGL under similar terms with an additional option to acquire NGL's remaining 46.0% interest within three years of closing.

contracted volume multiple times per year. The number of times that the contracted capacity can be cycled per year is called a "turn" and the number of turns per year is determined by the amount of compression installed at the storage facility.[2] The number of turns and attendant compression installed is based on the specific requirements of each customer. The Western Energy Hub is in close proximity to critical gas and power infrastructure allowing natural gas to be delivered by pipe to LDCs, power generators or other end-use customers or burned as fuel in nearby power plants where the natural gas is effectively delivered by wire.[3]

The uniqueness and value of the geologic salt feature at the Western Energy Hub cannot be overstated. The dome is of world-class size and located in the center of western energy infrastructure. In close proximity to this unique geologic feature, the Western Energy Hub are pipelines (natural gas & refined products (UNEV), rail, highway and power transmission lines that provide energy throughout the west. From this hub in Utah, natural gas and power have the possibility to reach over 75 million people in 11 western states. This makes the Western Energy Hub a strategic asset for both the State of Utah and the western United States. Utah has the ability to be the central player in the current and future energy development in the west through the development of the Western Energy Hub to its full potential.

Attached as Magnum Exhibit 1.2 is an aerial picture of the Western Energy Hub with depictions of the various projects under development.

[2] DEU's proposed LNG facility would require additional liquifiers—at a far greater cost—to match the capabilities of the Western Energy Hub.

[3] Natural Gas delivered by wire means that instead of moving the natural gas via pipeline to a power plant near a load center the gas is consumed in a power plant near the storage facility and the power is moved by high voltage transmission to the load center.

Q. Please provide more detail on Magnum's Western Energy Hub natural gas storage project.

A. Magnum's natural gas storage project is certificated by the Federal Energy Regulatory Commission ("FERC") to provide up to a combined 40,000,000 Dth of working gas capacity in four caverns. The project is designed to allow multiple turns or cycles per cavern each year providing a unique option for Dominion Energy Utah ("DEU") to meet its customers' natural gas, supply and deliverability requirements with nearly unlimited flexibility.

An approximately 60-mile natural gas header connecting the Western Energy Hub to the interstate pipelines of Kern River Gas Transmission and/or Dominion Energy Questar Pipeline is also permitted by FERC and is shovel-ready. Magnum holds a FERC Section 7(c) certificate and all necessary BLM permits and the majority of the rights of way to construct a header up to 36" in diameter, which will support potential interconnections at the Goshen Hub, Magnum's proposed WEST Header Project,[4] the Kern River Gas Transmission pipeline, Dominion Energy Questar Pipeline, Dominion Energy Utah (LDC), and the IPP Power Plant, among others.

The high-turn capability of the Magnum's Western Energy Hub natural gas storage project provides system supply reliability services as well as peak day services for pipelines, producers, local distribution companies, LNG exporters and power

[4] On June 27, 2018, Magnum announced an open season for the Western Energy Storage and Transportation Header Project (WEST Header), a new ~650-mile large diameter interstate pipeline running from the Salt Lake City Valley and Goshen Hub in Utah to Las Vegas, Nevada, and along the California/Arizona border south to Yuma, Arizona. By connecting the Magnum Gas Storage Project with various production sources throughout the Rocky Mountain region and the Permian Basin, the WEST Header will enable Magnum to supply highly flexible, intra-day storage and transportation services to markets throughout the Western United States, including Southern California. For more information about the WEST Header, please visit www.westhp.com.

generators. A recent failure of an aging large gas storage reservoir in California[5] illuminates the potential for large-scale power outages and demonstrates a need for high-deliverability, multi-cycle storage services like those offered by the Western Energy Hub, and the increasing penetration of renewable electric generation resources increases the need for flexible gas storage options like those offered by the Western Energy Hub.[6]

Q. What is Magnum's interest in this docket?

A. Magnum intervened and filed testimony in DEU's LNG approval docket that was before this Commission last year, Docket 18-057-03. It did so because Magnum's natural gas storage project was among the options considered by DEU, and Magnum's project was addressed at length in testimony and exhibits in that docket. While Magnum has had, and hopes in the future to continue to have, a good working relationship with DEU, Magnum filed testimony in that docket because its project offers numerous benefits and opportunities for DEU and its customers beyond those available from the proposed LNG facility and Magnum felt that it was necessary to clarify the record with respect to various risks, costs and benefits relating to its project.

The Commission ultimately denied DEU's request for pre-approval of the LNG project last year because DEU had not demonstrated that its LNG facility was the most reasonable, lowest-cost alternative. In support of its decision, the Commission cited Magnum's testimony that "a formal RFP process in which DEU states specifically its

[5] A salt dome is vastly different from, and superior to, both an LNG facility and a depleted reservoir such as the one in California. Depleted reservoir gas storage is typically used to meet seasonal demand increases and, like LNG facilities, have a low fill/delivery rate, "meaning the natural gas that can be extracted each day is limited." *See* http://naturalgas.org/naturalgas/storage/. Depleted reservoir gas storage is, therefore, similar to an LNG facility and contrasts with Magnum's salt dome storage, which is a high-deliverable, multi-cycle facility.

[6] See the Western Electricity Coordinating Council Wood Mackenzie Study, available at https://westhp.com/wp-content/uploads/2018/06/Western-Interconnect-Gas-Electric-Interface-Study.pdf

supply reliability objectives is necessary for DEU to learn what the market can provide to meet its supply reliability concerns." (Docket 18-057-03, Oct. 22, 2018 Order ("2018 Order") at 15). The Commission further noted that DEU did not solicit "bids for a resource that could provide essentially instantaneously 150,000 Dth/day of gas for eight days to DEU's distribution system." (*Id*. at 15-16).

After the Commission's ruling in the 2018 docket, DEU issued a new RFP this year and invited Magnum to participate, which it did.

Q. Did the 2019 RFP process conducted by DEU adequately address the deficiencies identified in the 2018 process so as to provide a meaningful record from which the lowest-cost option for meeting the reliability needs identified by DEU can reasonably be determined?

A. Unfortunately, no. The 2019 RFP process appeared to be less of a serious attempt to identify the least-cost, least-risk resource to meet specified utility needs, and more of an attempt to ensure that DEU's desired LNG facility would be the only resource that could meet DEU's newly described needs.

Q. Please explain.

A. Before submitting a bid into the 2019 RFP, Magnum submitted several questions to DEU in an effort to better understand DEU's specific needs and to help tailor appropriate RFP responses. DEU refused to provide meaningful information in response to those requests. Magnum's questions and the DEU responses are attached as Mangum Exhibit 1.3. Because DEU refused to provide meaningful information—choosing to focus on its role as a competitor to Magnum and other bidders instead of its proper role of identifying the best and most cost-effective resource option for ratepayers—Magnum

and other bidders were effectively precluded from negotiating and tailoring specific options in response to perceived utility needs.

Even more critically, DEU made a number of changes to its 2019 RFP process in comparison to the 2018 process that appear designed primarily to ensure that DEU's proposed LNG project—and that project only—would be identified as the preferred option. In our view, not only were the goal-posts moved by DEU, the entire game was moved to a new and undisclosed location. Among those changes were the following:

1. Change in delivery location. A very significant change from DEU's 2018 request for bids to its 2019 request for proposals ("RFP") was a change in the required delivery location. In 2018, DEU identified the Bluffdale area as the optimal delivery location (which Magnum believes is also consistent with DEU's 2019 IRP that identifies that area as a primary area of system growth and development and declining pressures).[7] The 2019 RFP specifies different "optimal" delivery points that required significant additional pipeline construction through highly populated areas—a restriction that seriously disadvantaged projects like Magnum's, which utilizes a pipeline to deliver the required services. Indeed, Magnum fears this was the express intent of this change.

Magnum has had many discussions with DEU over the past several years dating back to the inception of the Western Energy Hub. Those discussions have addressed several topics, but more recently have focused on DEU's growing concern about addressing natural gas supply reliability issues, peak-hour deliverability, long-term firm

[7] In March 2018, DEU requested that Magnum provide a proposal for system supply reliability and peaking gas delivered at Bluffdale. At a June 19, 2018, Technical Conference in last year's LNG docket, DEU employee Michael Platt confirmed that the proposed Bluffdale interconnection point was an optimal "null point" location for system supply deliveries due to its central location and DEU's ability to distribute supply in multiple directions.

storage, optionality for multiple receipt and delivery points, and potential equity participation. At DEU's request, Magnum has responded to several specific RFPs, and has had numerous other follow-up discussions with DEU. In response to specific requests from DEU, Magnum has provided responses to each of DEU's requests, which identified DEU's "optimal" delivery locations—including Goshen, Payson, and Bluffdale. Having previously received Magnum's bids for and competitive information for delivery to those prior "optimal" delivery locations, DEU has chosen a new "optimal" delivery location for its 2019 RFP, now identifying that delivery location as "the DEU existing high-pressure system with ability to connect to Feeder Line 13, Feeder Line 12, Feeder Line 33, or Feeder Line 21-10."[8]

2. Change in timing requirements. Another serious flaw of the 2019 RFP process is in its timing requirements. In the 2018 docket, DEU identified a 4-year engineering/construction cycle for its proposed LNG facility and also identified a commercial operation date in November of 2022. Despite significant delays caused by the ineffective 2018 process, the 2019 RFP continues to mandate a commercial operation date in November 2022, while requiring bids to remain open through March 31, 2020. Shortening the engineering/construction cycle from approximately 48 months to 32 months is unreasonable. In Magnum's view, neither DEU's proposed LNG facility, the Magnum options, nor any other available alternative resources, could reasonably be expected to be engineered, financed and completed in an efficient manner within such a narrow timeframe. DEU refused to answer questions about timing contingencies, or the

[8] *See* Dominion Energy Utah Supply Reliability Resource Request for Proposal ("RFP"), dated Jan. 2, 2019 RFP, at 2. A true and correct copy of the RFP is attached hereto as Magnum Exhibit 1.4.

likely timeline of its preferred LNG facility, leaving bidders without adequate information to prepare meaningful cost and timeline proposals.

The timing requirements in the 2019 RFP are important, particularly given the relative risks presented by the different projects bid into the 2019 RFP. The shorter the engineering/construction cycle, the greater the risk of cost overruns, and DEU's customers should not bear the risk of those cost overruns. If DEU had chosen Magnum or another bidder offering a contract option, Magnum or another bidder would bear the risk of cost overruns for the project. By contrast, DEU will seek to recover all costs—including any costs it incurs above and beyond the estimated project costs—from its ratepayers. DEU has not demonstrated a need for a commercial operation date of November 2022 that justifies this increased risk to its customers. DEU's assertion that its proposed LNG facility is the lowest-cost option is placed at risk by the construction timeline. If DEU's application in this docket is approved, that approval should be conditioned on DEU guaranteeing that it will not seek recovery of any costs incurred above and beyond the estimated costs identified in its application.

3. Change in requested resource. DEU's 2018 LNG filing asserted a need for a resource to supply 150,000 Dth of gas per day for 8 full days in order to maintain pressure for firm customers in the event of supply shortfalls or other system emergencies. The Commission's Order in the 2018 docket chided DEU for its failure to initiate "a formal RFP process in which DEU states specifically its supply reliability objectives." (2018 Order at 15). In requesting approval of its LNG plant in the 2018 docket, DEU asserted that it required delivery of 150,000 Dth/day of gas for eight days. The

Commission noted, however, that DEU had never solicited bids for delivery of "150,000 Dth/day of gas for eight days to DEU's distribution system." (*Id*. at 15-16).

Notwithstanding this express Commission language seeking specificity in DEU's solicitation, DEU's 2019 RFP asked for a wide range of annual availability—between 750,000 and 1,500,000 Dth. Based on deliveries of 150,000 Dth/day, this equates to a range of 5 to 10 days. This change makes DEU's specific resource needs quite unclear. Costs for facilities designed to supply 150,000 Dth/day for 5 days are very different than those needed for 8 or 10 days. A meaningful RFP should specify the precise needs DEU is attempting to address in order for proposals to be tailored to those specific needs. DEU claimed that this change was intended to provide flexibility to respondents, but a solicitation that does not clearly identify the utilities' needs and goals makes it difficult for respondents to tailor proposals in the most meaningful and cost-effective way.

4. Refusal to discuss and tailor responses. The RFP warns that anyone who contacts DEU about an RFP proposal outside the RFP process is subject to disqualification. Magnum carefully avoided such contacts, but on many occasions—including in its RFP questions and in its bid—Magnum specifically requested opportunities to meet with DEU throughout the RFP process to discuss DEU's specific needs and interests, including sole or joint ownership options for DEU. Had such information been provided, Magnum would have been able to tailor its proposal to DEU's specific needs. DEU refused to respond to such requests, however, and Magnum and other potential respondents were forced to guess as to DEU's true needs, intentions, and motivations. Magnum's project can be designed in nearly limitless ways and, as such, could be designed to meet virtually any of DEU's stated design requirements.

Without knowing those design requirements, Magnum was forced to build in a number of contingencies that raised the price of its bid, without any way to know whether those contingencies were desirable to DEU or not. For these reasons, DEU's 2019 RFP process appears designed less to flesh out all available alternatives in a meaningful and comparative manner, and more to check off the "RFP box" so that DEU can proceed with the resource preferred by its shareholders.

5. Refusal to explain LNG impacts. Magnum asked several questions designed to help it better understand the timing, cost, contingency and other implications of the new 2019 RFP on DEU's proposed LNG facility, so that Magnum could better focus and target its proposal to meet similar timelines and needs. DEU refused to provide any substantive information about its LNG alternative. This dearth of meaningful information made it impossible for bidders to reasonably focus their own proposals in a manner designed to permit meaningful evaluation and comparison of all proposals on a fair and equal basis.

Q. Do you believe that the involvement of the Commission or an independent evaluator would have improved the RFP process?

A. Yes. I am informed that, because its request for approval in this docket is voluntary, DEU was not required by statute or rule to utilize an independent evaluator ("IE") for the RFP and that the Commission was not involved in the process of designing the RFP. The 2019 RFP would have yielded better and more certain results, however, if an IE had been hired to ensure the fairness of the RFP and/or if this Commission and stakeholders had been involved in the RFP design process. For example, Magnum had numerous questions throughout the RFP process that DEU simply refused to answer. An

IE could have provided answers to those questions and ensured that those answers were provided to all bidders. Similarly, the involvement of the Commission and other stakeholders could have prevented the RFP's failure to adequately define the requested resource and the imposition of an unrealistic timing requirement, as discussed above.

The manner in which DEU designed and ran the RFP doesn't appear to Magnum to comply with what the Commission had in mind when, in its Order in the 2018 LNG docket, it suggested that DEU initiate an RFP so that it "would have a more complete record on which [the Commission] could consider whether [DEU's] selected supply reliability resource option is in the public interest." (2018 Order at 16).

Q. Do you continue to believe that the Magnum project can meet DEU's stated needs on a more cost-effective basis than DEU's preferred LNG plant?

A. Yes. Magnum's proven salt cavern storage resource in Utah, which is rare outside the Gulf Coast, offers high-deliverability, multi cycle storage with proven reliability. Its flexibility, including the number of available "turns," far exceeds that of traditional storage reservoirs. It will be available year-round, offering multiple days of supply reliability and/or peaking, as needed, as well as expeditious injectability for recharging of caverns.

Magnum' project offers economical, all-inclusive, safe, reliable "bolt on" options that would resolve both supply reliability and peak-hour concerns. Magnum's proposal would allow up to 2 billion cubic feet of natural gas storage (more if needed) and would deliver the quantities of gas needed for supply reliability and/or peaking hour demands at a cost that will save ratepayers millions of dollars compared to the LNG options. Natural

gas stored in Magnum caverns can be delivered to any of several strategic points of receipt and delivery.

The Magnum facilities would allow DEU to adjust deliverability and peak hour requirements as needed for day-to-day operational needs and in response to supply reliability and peak hour demands. Magnum offers significant flexibility in terms of the scope and design of the facilities, including options for DEU to participate as an equity partner. Magnum's project is shovel ready, with all current necessary regulatory approvals in hand,[9] and could be operational within 24-36 months following execution of definitive agreements. Moreover, Magnum's strategic location offers access to significant utility infrastructure, as well as protections against force majeure disruptions such as earthquakes. Magnum offered DEU significant optionality, given the flexibility of its high-deliverability, multi-cycle salt cavern storage.

[9] Magnum does not hold the regulatory permit from Goshen to Bluffdale. As such, extending the Magnum Header (Magnum Header Extension) beyond the Goshen Hub to Bluffdale would require additional FERC regulatory approval, which Magnum proposes to accomplish via an amendment to its existing FERC 7(c) certificate.

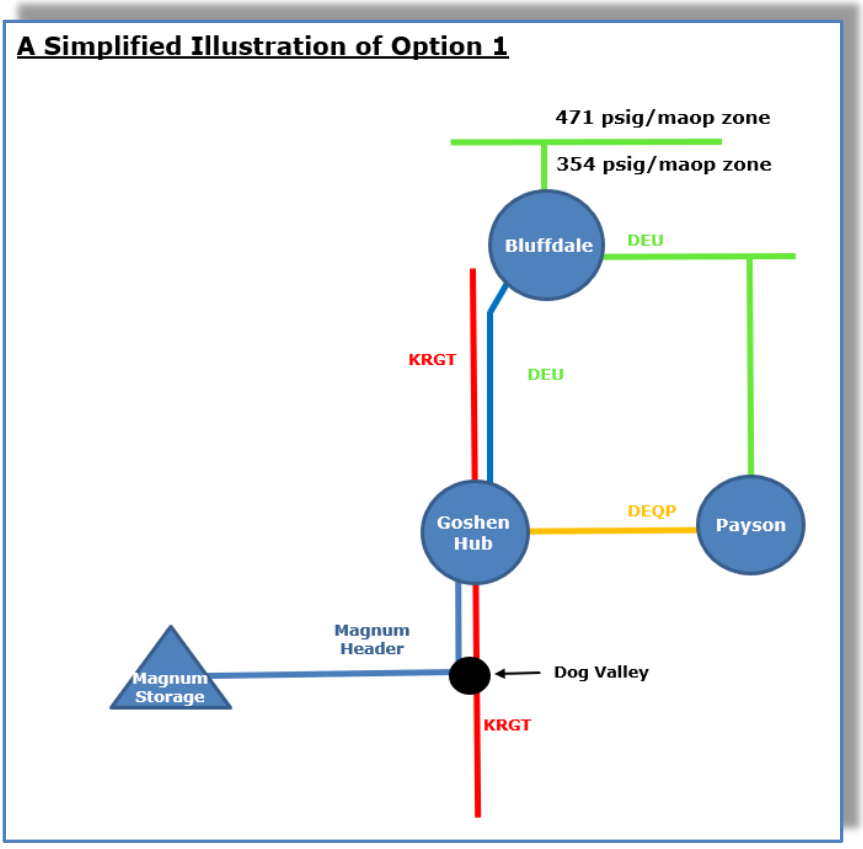
Comparison of Magnum and LNG Options

Q. Please describe in general terms Magnum's bid in response to DEU's 2019 RFP and explain how it compares to the LNG options.

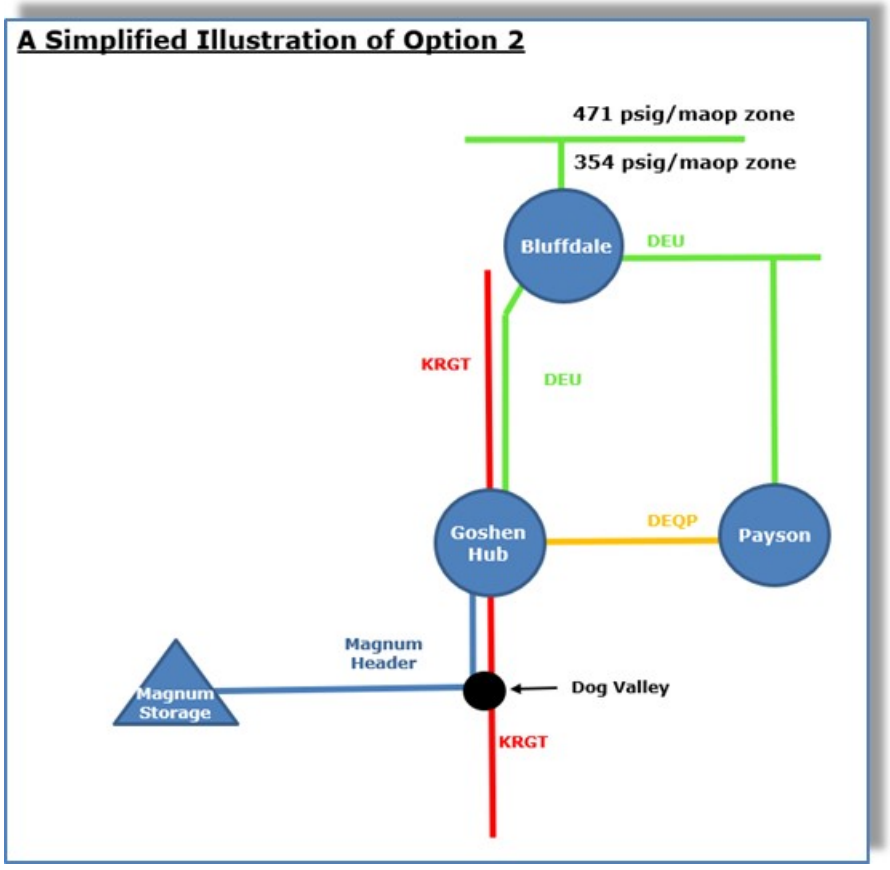
A. In response to the RFP, Magnum submitted a proposal with three options. The two primary options are described herein as Option 1 and Option 2.

In Option 1, Magnum proposes to construct, own and operate the Magnum Header Extension between the Magnum Header delivery point at Goshen Hub and a delivery point on the DEU system at or near Bluffdale, Utah. Option 1 also includes a provision where Magnum will fund the cost of upgrading DEU's system that will allow for supplies to access the 471 psig/MAOP zone in the northern part of DEU's Wasatch Front system. In Option 2, Magnum proposes that DEU construct, own and operate the DEU System Extension between the Magnum Header delivery point at Goshen Hub and a delivery point on the DEU system at or near Bluffdale, Utah.

The Magnum Proposal for Option 1, as illustrated below, includes construction of the Magnum Header Extension to the proposed interconnection point with DEU at or near Bluffdale. This option will allow for DEU-owned natural gas supplies to be delivered directly into the DEU system at Bluffdale on a firm basis, with the flow controlled at the interconnection point under the direct supervision of DEU and Magnum Gas Control. With this option, Magnum will provide for a Firm No-Notice service that will be available intra-day and outside of the standard NAESB nomination cycles, whenever DEU needs to balance supply in its system and at a pressure necessary to effectuate delivery of the service for which DEU has contracted.



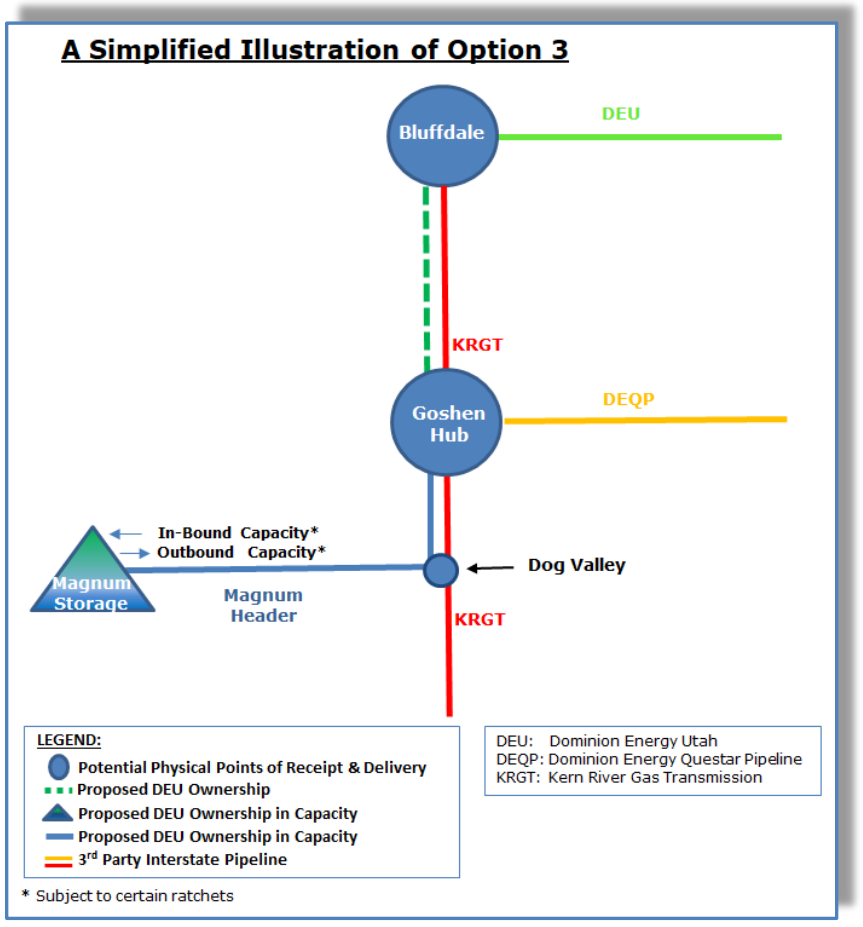
Option 2, as illustrated below, allows for DEU-owned natural gas supplies to be delivered directly into the DEU system at Goshen on a firm basis, with the flow controlled at the interconnection point under the direct supervision of DEU and Magnum Gas Control. Magnum will provide for a Firm No-Notice service that will be available intra-day and outside of the standard NAESB nomination cycles, whenever DEU needs to balance supply in its system and at a pressure necessary to effectuate delivery of the service for which DEU has contracted.



Both Option 1 and Option 2 provide a seamless, Firm Wheeling (transportation) Service combined with a Firm No-Notice Service. This seamless service provides DEU with a one stop solution for managing its intra-day flexibility needs and for meeting its

critical supply reliability requirements. Magnum believes it was the only Respondent under the DEU RFP able to provide and manage the intra-day flexibility required by DEU.

Magnum's proposal also included a third option pertaining to prospective ownership options for DEU in various aspects of the Magnum Project. As illustrated below, Option 3 provides DEU the opportunity to hold 100% ownership in the Magnum Header Extension (DEU builds, owns and operates Bluffdale to Goshen), inbound and outbound of firm wheeling capacity in the Magnum Header, and firm storage capacity in a Magnum Gas Storage cavern.



For each of the above options, Magnum will provide DEU's requested Total Annual Supply Availability of 1,500,000 Dth. Magnum will also provide an additional 500,000 Dth over and above DEU's requested Total Annual Supply Availability of 1,500,000 Dth for a total of 2,000,000 Dth as a supplemental benefit to DEU.

Q. Has Magnum performed a cost comparison of the Magnum RFP responses to the cost of DEU's proposed LNG facility in this Docket?

A. Magnum has not had an opportunity to perform a comparison of the costs of its proposals in response to DEU's RFP to the cost of DEU's proposed LNG facility because Magnum did not receive unredacted information from DEU in time to allow it to perform such a comparison. Magnum filed its Petition to Intervene in this docket on July 26, 2019 and submitted a data request to DEU that same day, requesting production of Confidential and Highly Confidential materials. Certain persons representing Magnum, including myself, agreed to the confidentiality conditions to receive confidential and highly confidential information from DEU. Magnum did not receive any confidential or highly confidential materials until the afternoon of Monday, August 12, 2019. The unredacted materials did not provide necessary information regarding the cost of DEU's proposed LNG facility. After discussions between counsel for Magnum and DEU, Magnum received certain high-level information related to the cost of the proposed LNG facility late in the afternoon on August 14, 2019. This information came too late for Magnum to determine whether it can conduct a comparison of the costs of the proposed LNG facility with Magnum's proposals, let alone to perform any such comparison.

Magnum believes that the Commission should have before it in this Docket the most comprehensive record as possible, without DEU providing its LNG cost estimates to Magnum in a manner for Magnum to perform its own comparison the Commission has only DEU's cost comparison analysis. Magnum will evaluate the information it has received and may continue to seek access to additional cost information that would allow it to submit its analysis of comparative costs in future testimony.

Q. Please summarize the advantages of the Magnum proposals.

A. Magnum offers numerous available strategic points of receipt and delivery for DEU. The Magnum facilities will be available year-round, with resources that provide multiple days of supply reliability and peaking, flexible nominations that can be adjusted as needed to address peak hour deliverability requirements and day-to-day operational needs, and supply reliability during shortfalls or curtailments of upstream pipelines. The location of the Magnum caverns ensures safety and protection against earthquakes and other force majeure disruptions. High-deliverability, multi-cycle salt cavern storage is a proven, reliable and desirable natural gas storage option that offers flexibility and multiple turns compared to traditional reservoir storage or an LNG facility. Expeditious injectability allows a quick recharge of caverns. Additionally, the Magnum project provides funding for Utah schools through partnership with SITLA, is permitted and "shovel ready." All-in-all, Magnum offers multiple options that would represent a win-win for DEU and its ratepayers, Utah residents, and Magnum.

Q. Does Magnum's offer of a long-term contract present a reduced risk to DEU's customers compared to DEU's proposed LNG facility, which would be in rate base for the lifetime of the facility?

A. Yes. As noted above, Magnum offered a 25-year fixed-price contract to meet the requirements of DEU's 2019 RFP. This structure represents a reduced risk to DEU's ratepayers as compared to the proposed LNG plant for several reasons.

Risk of Cost Overruns. In the event that the cost to provide the required services is higher than anticipated, the structure of Magnum's bid would require Magnum to bear those increased costs whereas the increased costs to build the proposed LNG facility will be borne by DEU's ratepayers so long as they are prudent. DEU's ratepayers are not at risk of paying for cost overruns with Magnum's project, but are at risk of paying for cost overruns for the proposed LNG facility.

Risk of Lack of Demand. DEU claims the need for supply reliability based on certain growth projections. If growth does not materialize in the way that DEU projects—such as an economic downturn or changes in growth patterns—then the need for supply reliability may also not materialize. For this reason, Magnum's project presents less risk to DEU's ratepayers because it is for a 25-year contract, rather than the lifetime of the proposed LNG facility. Magnum's bid provides all of the functionality of the proposed LNG facility in the event that growth does materialize, but unlike with the proposed LNG facility, the risk is limited to a 25-year contract, after which DEU would have the option to renew the contract based on information available at that time.

Risk of Change in Demand. DEU claims that the proposed LNG facility best meets the supply reliability needs of its ratepayers based on part on DEU's assertion that it connects at the "optimal" delivery location—between the northern and southern portions of DEU's Wasatch Front delivery system. As DEU noted in the June 19, 2019 technical conference, the northern portion of DEU's Wasatch Front system has larger

pipes than the southern portion and, therefore, requires a higher volume of gas than the southern portion.[10] DEU asserts that the "optimal" delivery location is between the two systems, so that a single solution can serve both the northern and southern portions of its system. This is short-sighted, because it requires a facility that is over-engineered if the supply-reliability needs are all on the southern end of the Wasatch Front system. DEU has stated in its recently-filed IRP that the fastest growth is occurring on the southern portion of the Wasatch Front system.[11]

Any proposed solution that connects at what DEU now refers to as the "optimal" delivery point must be large enough to provide the high-volume of gas required to supply the high-volume pipes in the northern end of that system. However, if the supply reliability issues are in the southern end of the system rather than the north, then DEU's ratepayers will be paying for an over-sized system. Magnum's proposal allows for interconnections at multiple delivery points, including in the southern portion of the Wasatch Front delivery system where DEU expects the greatest growth. If this expected growth requires the supply reliability functionality in the south, but not in the north, then the sizing and location requirement for the proposed LNG facility will have resulted in a cost to DEU's ratepayers that they need not have paid. Magnum's project can interconnect at various points to serve growth as it materializes and, as a result, there is little or no risk of an oversized LNG project or of requiring an interconnection point that increases costs unnecessarily.

[10] *See* Supply Reliability Technical Conference materials at 15 (showing 471 psig MAOP zone to north and 354 psig MAOP zone to south).
[11] *See* Docket 19-057-01, Integrated Resource Plan, filed June 13, 2019 at 4-5 ("Saratoga Springs, Lehi, and Eagle Mountain are some of the fastest growing communities in DEU's service territory.") *See also id*. at 5-3 to 5-4 (noting that Saratoga Springs, Lehi, and Eagle Mountain "are some of the fastest growing communities in DEU's service territory.")

Q. Does Magnum's proposal provide peak hour services that are superior to the peak hour services that could be provided by the proposed LNG facility?

A. Yes. DEU seeks approval of the proposed LNG facility for supply reliability purposes. DEU does *not* seek approval of the proposed LNG facility as a mechanism to provide peak hour services. DEU states in its testimony in this docket, however, that the proposed LNG facility can provide some level of peak hour services. To the extent that this Commission intends to consider the peak hour services of the proposed LNG facility, the Commission should consider the fact that Magnum's peak hour services are far superior to those that the proposed LNG facility could provide.

The ability of the proposed LNG facility to provide peak hour services will be limited based on the volume in the tanks at the time that peak hour services are required. The supply reliability services that the proposed LNG facility would provide are most needed during the peak heating season. To the extent that the proposed LNG facility is used to provide supply reliability services during the peak heating season, its ability to provide peak hour services is diminished. Refilling the LNG facility can take quite a long time, and the LNG facility can only turn only once per year.

By contrast, and as discussed above, Magnum's facility can turn multiple times per year. The Magnum facility's high turn capability allows it to provide more gas more often than the proposed LNG facility. As a result, the Magnum facility has a far greater ability to provide both supply reliability services and peak hour services than does the proposed LNG facility.

Q. Is there anything additional or substantive you would like to supplement to Magnum's response to DEU's 2019 RFP?

A. Shortly after Magnum's proposal to DEU in the 2019 RFP, Magnum Development announced along with Mitsubishi Hitachi Power Systems an initiative to launch the Advanced Clean Energy Storage (ACES) project in central Utah to develop 1,000 megawatts of clean energy storage in central Utah.[12] The ACES project will incorporate 100% clean energy storage, deploying utility-scale technologies, which include renewable hydrogen, compressed air energy storage, large-scale flow batteries, and solid oxide fuel cells. Renewable hydrogen, which is a zero carbon resource produced via electrolysis from excess wind, solar and hydro power can be injected into the natural gas stream to increase the level of renewable natural gas essential to a clean initiative. The Magnum header system into Bluffdale would be able to deliver renewable natural gas into the heart of DEU's system. The Magnum proposal is compatible with renewable hydrogen unlike DEU's proposed LNG project which is not be compatible with renewable hydrogen.

The Magnum proposal would assist Dominion Energy with their sustainability initiative and "reducing carbon intensity" as stated in their Environmental Policy Statement Dominion Energy "sets targets for enhanced environmental performance as part of our sustainability initiatives". This reinforces the unique nature of the Western

[12] *See* https://magnumdev.com/wp-content/uploads/2019/05/NEWS-RELEASE-MHPS-Magnum-Partnership-05-30-19-FINAL.pdf

Energy Hub and the potential for Utah to play a strong role in western energy markets if the Hub develops.[13]

Q. Do you have any other comments?

A. Magnum would love an opportunity to work with DEU and its customers and regulators to develop a timely, cost-effective, safe and reliable high-deliverability, multi-cycle salt cavern storage facility and associated storage and no-notice services to resolve DEU's supply reliability and/or peak-hour requirements. We appreciate this opportunity to better explain the nature and cost of the services that Magnum can provide.

The Western Energy Hub provides a unique opportunity for the growth of energy infrastructure western United States. Storage and/or the production of energy at the Western Energy Hub, in its various forms, will help to shape the economic flow and use of energy across the west. As the demand for energy, in form (renewables), in fuel (natural gas and hydrogen) and in time of use change due to technology advancements and lower costs, Utah, due to nature's delivery of a salt dome near Delta, is poised to be at the critical crossroads for the western energy future. To illustrate this point, simply look to the announcement in May of this year where Mitsubishi Hitachi Power Systems and Magnum joined with The Honorable Gary Herbert, regarding an initiative to launch the Advanced Clean Energy Storage (ACES) project in at the Western Energy Hub. In the world's largest project of its kind, the ACES initiative will develop 1,000 megawatts of 100 percent clean energy storage, thereby deploying technologies and strategies essential to a decarbonized future for the power grid of the Western United States.

[13] *See* https://www.dominionenergy.com/library/domcom/media/community/environment/environmental-policy-statement.pdf?la=en

DEU, the Commission, Magnum, and other western energy infrastructure owners, operators, and regulators will in the coming years see the advantages that the Western Energy Hub brings to their individual and collective futures.

Q. Does this conclude your testimony?

A. Yes.