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Iowa Propane Supply Chain Optimization Strategy

Steering Committee Project Status Update

July 23, 2014

Confidential.

consulting & technology

Agenda

- Project Status Update
- Interim Marketer Survey Results

Iowa Propane Supply Chain Optimization Project Status

Project Sponsors:	Paul Trombino III, Craig Markley	Client Engagement Leader:	Holly Zimmerman	Project Manager:	Sam Hiscocks	Updated as of:	7/23/2014

Objective

Key Objectives:

Create an efficient propane supply chain for the State of Iowa; and prioritize investments in infrastructure to lower propane supply chain costs for the State and its constituents.

Major Benefits:

Ability to identify potential disruptions in propane supply before reaching crisis levels.

Proactively define viable contingencies to better manage fluctuations and disruptions in supply.

Overall Status: G

- Secondary and primary research underway
- Marketer survey distributed 7/15
- Data collection running concurrently vs. consecutively across tasks

Progress this Period

- Conducting data collection across tasks concurrently (vs. sequentially) to manage to timing of primary research and disaggregation of data
- Finalized and distributed marketer survey via email 7/15; facilitated by IPGA
    - 42 responses to date; 18% to 21% response rate
- Demand data disaggregation underway; Reconciling methodology differences between data sources (EIA, PERC model, API Sales)
- Storage data received from fire marshal on aboveground tanks over 2000 gallons
    - Limited additional data from DNR on underground tanks
- Discussions with Strata Power on underground aquifer cavern in Vincent, IA
    - Tested for natural gas storage; never fully developed (6-39MM gallons)
    - Assessing high-level feasibility on “aquifer” suitability for propane
- Exploring whether any “mined” sites that may be feasible (Des Moines and Iowa City mined caverns); Iowa Ag tracks only for reclamation; awaiting geologist input
- Motor Vehicle request for marketer list to validate transportation asset data
- Finalizing pricing data requirements for OPIS data acquisition based on initial survey
- Ongoing discussions on data inputs from SMEs

Planned for Next Period

- Analyze results of marketer survey; Survey close 7/28
- Collect outstanding data from additional external data sources; Update data inputs
- Schedule SME interviews for secondary validation of assumptions, as needed
- Audit for outstanding data elements; Determine action plan and impact

Key Issues/Risks/Dependencies

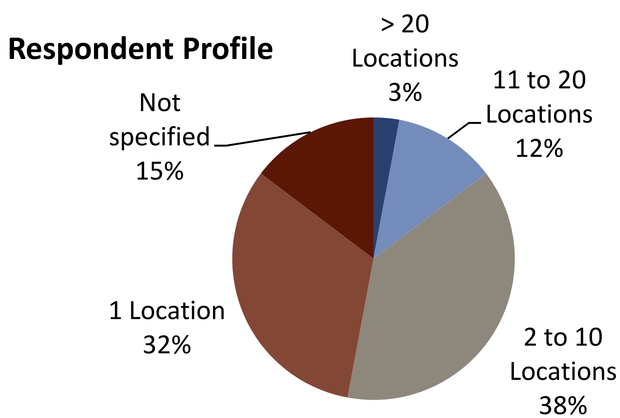
- Limited datasets available requires more primary research and disaggregation
- Assess any timing impacts upon survey results and data receipt

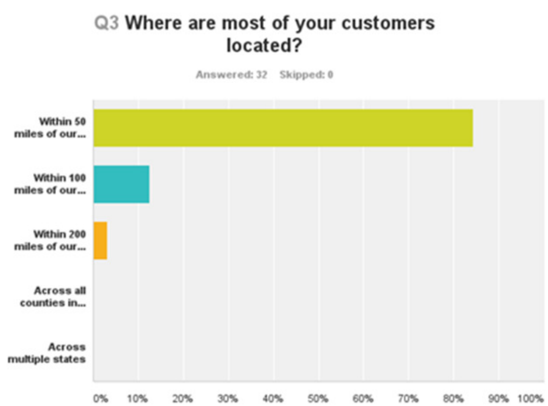
Decisions / Actions Needed

Key Action Items & Milestones

Milestone	Target / Actual Date	Status	Result or Comments
1 a. Project plan & kick off	5/9	Complete	
1 b. Optimization Education	6/27	Deferred	
2. Data needs assessment	6/13	Complete	
4. Id demand areas	~~6/27~~ 8/28	In Process	• Disaggregation underway; Reconciling source differences
5. Id transportation capacity	~~7/11~~ 8/28	In Process	• Collecting data from secondary sources; refine with primary
6. Analyze performance	~~8/8~~ 8/28	In Process	• Collecting data from secondary sources; refine with primary
7. Quantify future demand	~~8/15~~ 8/28	In Process	• Leverage PERC model for future forecast, plus what if
8. Identify constraints	8/28	In Process	• Collecting data from secondary sources; refine with primary
9. Id improvement opportunities	9/11	Not Yet Started	• Defined initial set of scenarios for modelling
10. Recommend optimization strategies	9/25	Not Yet Started	
11. Develop business case(s)	10/8	Not Yet Started	
12. Document methodology	10/15	In process	• Documenting during data disaggregation / prep

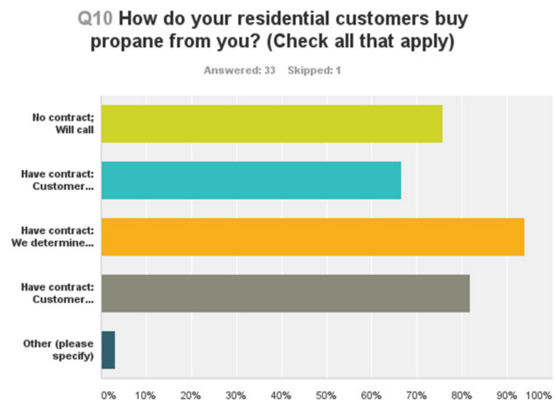
Interim Marketer Survey Results Respondents

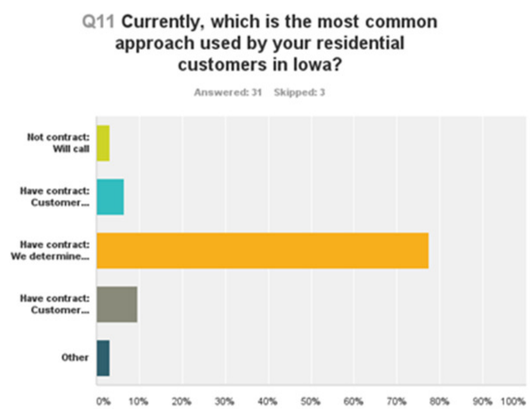




- Validate assumptions from research and SME interviews for Iowa market
  - Higher demand for agriculture
  - High reliance on pipeline versus secondary storage
- Structured as blind survey from Quetica as neutral third party
  - Balance content needs versus length/ease of response
- 42 responses to date
- 18% to 21% response rate
  - % of survey participants (<218 members)
  - % of population (~9 non-members)
- 34 responses at time of interim results
  - Majority 5 locations or less
  - Focus on customers within 50 mile radius

Interim Marketer Survey Results
Residential Sector



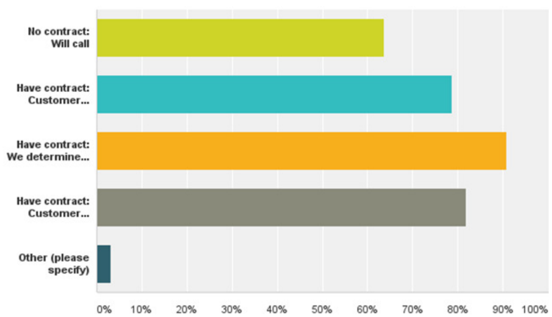


- Roughly 56% of marketer customers are residential
- Strong opportunity for influence on inventory practices
  - ~50% lease storage from marketer
  - ~78% have contract and marketer determines fill schedule
  - ~71% had 2014 summer fill
- Price guarantee agreements most common method to manage risk
  - ~58% lock in price
  - ~31% budget or monthly billing
  - ~6.5% metered/usage

Interim Marketer Survey Results
Agriculture Sector

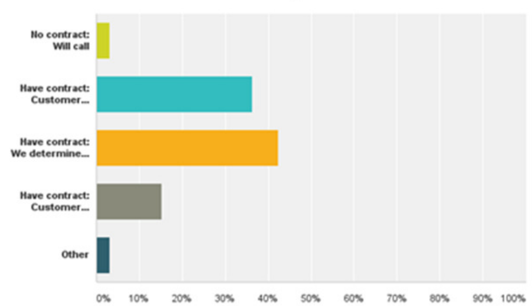
Q6 How do your agricultural customers buy propane from you? (Check all that apply)

Answered: 33 Skipped: 1



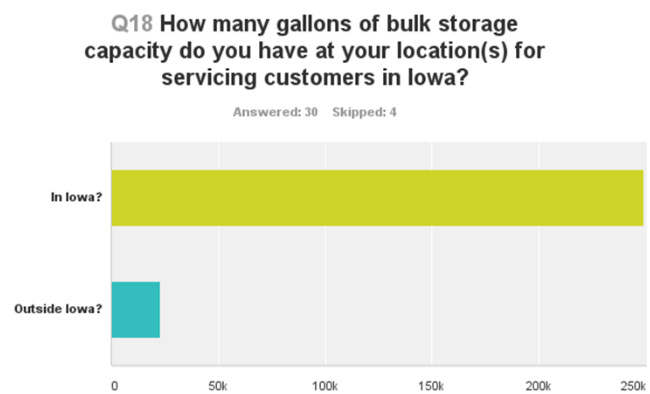
Q7 Currently, which is the most common approach used by your agricultural customers in Iowa?

Answered: 33 Skipped: 1



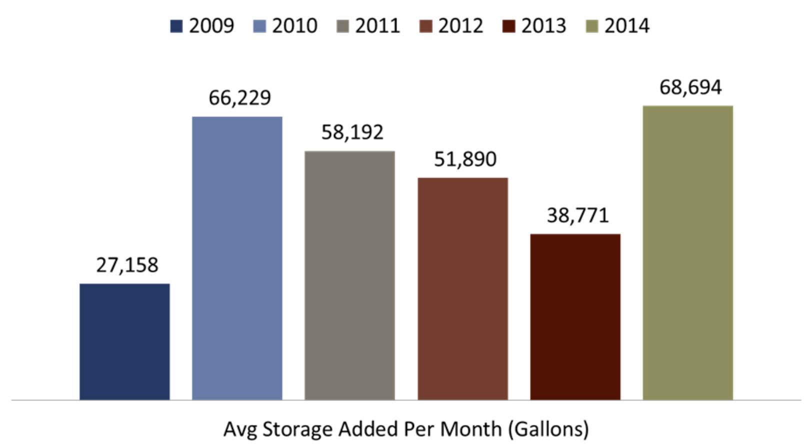
- Roughly ~ 37% of marketer customers are agricultural
- Marketer has less influence on inventory
  - ~41% lease storage
  - ~68% summer fill
  - Split between customer & marketer control of fill
  - Slightly more prevalence of pre-buy vs. residential
- Similar adoption of price guarantees to residential; but less budget billing
  - 59% lock in price
  - 13% budget or monthly billing
  - 4% metered/usage

Interim Marketer Survey Results
Storage



- Average marketer storage 250,000 gallons
- Most storage in Iowa
- Low utilization of leased or 3rd party storage
- Investments in new storage facilities

How many gallons of bulk storage capacity do you have at your location(s) for servicing customers in Iowa?			
Answer Options	Response Average	Response Total	Response Count
In Iowa?	249,100.00	7,473,000	30
Outside Iowa?	22,750.06	364,001	16
		answered question	30
		skipped question	4



Do you lease storage or maintain any inventory at a third party storage facility?				
Answer Options	Used within the past 5 years	Used within the past 12 months	Plan to use in future	Do not use
At bulk or underground storage facility in Iowa	0	2	1	25
At bulk or underground storage facility outside Iowa	3	3	0	22
At customer location	2	1	3	21
At other location	0	1	0	22

Interim Marketer Survey Results
Sourcing

Where do your suppliers maintain their inventory of propane for delivery to you in Iowa?					
Answer Options	Use frequently	Use occasionally	Used for first time this year	No longer use	Never used
Conway, KS	24	1	0	0	0
Edmonton. AB	2	0	0	1	10
Mt. Belvieu, TX	2	3	3	0	7
Hattiesburg, MS	1	1	0	0	11
Sarnia, ON	1	0	0	0	12
Other Location	2	0	0	0	4

Where do you source your supply of propane?					
Answer Options	Used within the past 5 years	Used within the past 12 months	Plan to use in future	Do not use	Do not know
Pipeline terminal in Iowa	15	23	2	1	0
Pipeline terminal outside of Iowa	7	20	2	3	1
Rail terminal in Iowa	1	0	1	25	1
Rail terminal outside of Iowa	0	0	3	24	1
Truck terminal at underground storage in Iowa	2	5	0	20	1
Truck terminal at underground storage outside Iowa	3	6	1	18	1

- Conway primary market hub
- Other hub locations relevant to analysis (baseline and scenarios)
- Mt. Belvieu utilization new in past 12 months
- Some increase in sourcing via truck at underground storage
- No/low rail utilization; small direct exploration (vs. wholesaler)

What doing differently as a result of the challenges this past winter?

- Storage
  - Installing larger tanks at agricultural customers with heavy usage; Encourage adding storage to corn drying systems
  - Lease to own for corn dryer clients
  - Upsizing customer storage, but margin and time challenges
  - Adding storage /bulk plant storage
  - Agreements with customers with 18,000 tanks for storage
- Inventory
  - Early summer fill before fall harvest/winter and keep full programs (where we control delivery).
  - Trying to keep everyone above 50%; Emphasizing “keep tanks full” (lot of wasted capacity)
- Transportation
  - Long distance transport agreements and supply plans
  - Investigating / utilizing rail
- Supply
  - Spreading supply risk
  - Contracting more gallons with suppliers
- No issues/no change

What are the biggest challenges to your organization?

- “SUPPLY. SUPPLY. SUPPLY.”
  - Reliable supply; Getting product when it is needed
  - Supply tighter without Cochin
  - Building pipeline allocation
  - Trying to minimize customer impact of supply issues
- Competition
  - Competing energy sources; Customers looking at all options to reduce dependence on propane
  - Competing actions of other marketers (pricing/margins, summer fill)
  - Growing our market share
- Demand
  - Meeting heavy seasonal crop drying demand; Ag producer and coop capital investments to improve ability to dry and move corn faster (3X)
  - Short window for Ag gas; Pipeline not ready for large amount of need
- Transportation & Infrastructure
  - Infrastructure not able to meet demand; Forced to travel longer distances to ensure supply
  - Cochin customers coming to Northern Iowa terminals
    - Reduce our allocations and shortening our supply
    - Need other rail and truck assets to support (MN and WI)
  - Pipeline system outdated; Not modernized or adding capacity/storage
  - Hours of service; Lengthening lines at terminals

What recommendations do you have to address challenges in industry in the future?

- Government Support
  - National propane reserve (salt caverns); Energy policy for propane
  - Not allow exports to flourish at expense of domestic needs. i.e.. Seasonally-adjusted, minimal domestic inventory prior to export
  - Government funding to increase corn dryer storage
  - Timely approval of new storage facilities; Ease of adding larger storage tanks
  - Hours of service for drivers; Exclusion for time at terminals; National emergency response instead of state by state declaration
- Transportation and infrastructure
  - Upgrade pipeline systems/add pipelines; Built in 1960's before big corn dryers; Rebuild infrastructure to meet current demand
  - More trucks and rail depots
  - More transparency at storage and pipelines; Coordination with pipelines to get needed gas at terminals during peak
  - Not beat up suppliers over every penny so suppliers can invest in infrastructure
- Storage and Inventory
  - Customer Education: Expectations around supply and timing; need for storage/inventory
  - Promote storage on the farm; Customer ownership for supply changes
  - More storage investment by all participants throughout entire supply system from Supplier to Final Customers
  - When get low inventories in Midwest caverns, react to the situation immediately
  - Build inventories; Summer fill (every tank)

Status of Midwest Stocks (PADD2)