Presentation Objective

Objective:

Estimate the economic benefit of building a new cold storage facility in Maine.

Specifically, what impact would it have on the biopharmaceuticals, craft beer, and food market.

Outline:

I. Cold Chain & Cold Storage
II. Current State of US Cold Storage
III. Current State of Maine Cold Storage
IV. Biopharmaceuticals Market
V. Craft Beer Market
VI. Food Market
VII. Overall Economic Impact
What is the Cold Chain and Cold Storage?

**Cold Chain** - The infrastructure used to keep products fresh between manufacturers / growers and consumers. (Refrigerated trucks, cold storage warehouses, reefer containers, etc.)

**Cold Storage** - Large refrigerated warehouses
Why is the cold chain and cold storage important?

Maines economic strength is our food cluster (Harvard Report 2015).

2nd largest cluster in state with 21,000+ jobs in 2012.

High abundance of natural resources (lobster, blueberry, fish, potatoes, etc.)

#1 wild blueberry producer in US

Food cluster growth requires additional storage (i.e. more potato growth requires more storage).

Ensure fresh products for consumers.

Critical component to supply chain.

Natural synergy with an import/export port.
Current state of Cold Storage in the US

Source: GDP data from Bureau of Economic Analysis, Cold Storage Data from USDA
Current Maine Cold Storage

Stagnant cold storage industry in ME (flat supply of cold storage since at least 2001).

Food industry in ME expanding

Pressure on current cold storage infrastructure.

Jasper Wyman’s, #1 wild blueberry producer in the US, forced to use out of state storage.

Most imports are trucked to Boston for storage.

Indicates pressure on current cold storage infrastructure.
The amount of cold storage in Maine has remained stagnant over the last 20 years.

Massachusetts has seen its overall capacity rise by 73% over the same 20 year period.

Londonderry, NH opened a 60,000 sq ft facility in 1998. Expanded by 30,000 sq ft, then built an additional 96,000 sq ft facility bringing the total to 212,000 sq ft.
Cold Storage in Maine vs. Other States

Gross refrigerated storage capacity in the U.S. totaled 4.17 billion cubic feet on October 1, 2015, an increase of 3 percent since the previous survey was conducted two years ago (USDA, 2016).

No increase for Maine

South Carolina Port yields a statewide employment multiplier of 2.4 - this implies that, on average, for every 10 jobs that are directly supported by the SCPA port operations or port users, an additional 14 jobs are created elsewhere in South Carolina.

Portland’s Cold Storage Facility would demand

- 186 construction employees
- 21 Full time employees at cold storage facility
- 15 more employees for Eimskip after cold storage is fully operational

Total of 50 employees
Overview of Maine’s Economy by Employment

Market Cluster - Biopharmaceuticals


Targeted growth cluster in Maine

Maine’s top 20 exports by dollar value

Increasing national market share

Large users of Cold Chain
Market Cluster - Biopharmaceuticals

Total demand for cold storage space by industry

Source: IBISWorld

- Wholesalers: 33.0%
- Pharma, floral, fur products: 12.0%
- Food manufacturers: 33.0%
- Retailers: 22.0%
Focus Maine

Build a world-class biopharmaceutical development and manufacturing environment

$150 - $380 million additional net exports by 2025

## Craft Beer Industry

<table>
<thead>
<tr>
<th>Low End Impact</th>
<th>High End Impact</th>
</tr>
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<tbody>
<tr>
<td>$228 million</td>
<td>$432 million</td>
</tr>
<tr>
<td>0.4% of Maine’s GDP</td>
<td>0.75% of Maine’s GDP</td>
</tr>
<tr>
<td>Employment of 1,632 people</td>
<td>Includes impact of supply chain on GDP</td>
</tr>
<tr>
<td>Output growth of 41% by 2020</td>
<td>Indirect Economic Contributions</td>
</tr>
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The craft beer industry increases the state’s GDP by $10,315 for every 1,000 cubic feet of cold storage infrastructure available in the state.

A 2 to 4 million cubic foot cold storage facility equals a $20.6 to $41.3 million dollar impact on Maine’s economy.
Regression Analysis of Cold Storage and Food GDP

- Theory: Cold storage and food related GDP are directly related. Food related industries cannot expand without the necessary cold storage.
- However, impact is likely more long term.
- Used USDA and BEA data between 2001 and 2014.

<table>
<thead>
<tr>
<th></th>
<th>GDP Change (millions)</th>
<th>Cold Storage Change (1,000's CF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>3,663</td>
<td>7,617</td>
</tr>
<tr>
<td>Alaska</td>
<td>-8,134</td>
<td>-1,281</td>
</tr>
<tr>
<td>Arizona</td>
<td>4,592</td>
<td>1,868</td>
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<tr>
<td>Arkansas</td>
<td>3,818</td>
<td>12,871</td>
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<tr>
<td>California</td>
<td>49,587</td>
<td>124,132</td>
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<tr>
<td>Colorado</td>
<td>5,546</td>
<td>5,984</td>
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<tr>
<td>Connecticut</td>
<td>1,455</td>
<td>757</td>
</tr>
<tr>
<td>Delaware</td>
<td>1,263</td>
<td>4,591</td>
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<td>Florida</td>
<td>11,509</td>
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<td>Georgia</td>
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<td>Illinois</td>
<td>13,784</td>
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<td>Indiana</td>
<td>8,235</td>
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<tr>
<td>Iowa</td>
<td>11,083</td>
<td>17,566</td>
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<td>Kansas</td>
<td>-15,938</td>
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<td>Kentucky</td>
<td>6,151</td>
<td>828</td>
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<tr>
<td>Louisiana</td>
<td>4,374</td>
<td>1,784</td>
</tr>
<tr>
<td>Maine</td>
<td>880</td>
<td>204</td>
</tr>
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</table>
Regression Analysis of Cold Storage and Food GDP

- Results: Our model explains 96.5% of the variation in food related GDP and is statistically significant.
- Caveat: Accuracy can vary widely as you’d expect when predicting economic results.
- Many other factors influence food GDP that are not captured.
- Still useful as a decisioning tool.
- Assumed additional cold storage space of 2 - 4 million cubic feet.
$500 million - $900 million

Annual Long Term Economic Impact of Cold Storage on Food Clusters in Maine

Increase in Food GPD w/ Cold Storage
Summary of Cold Storage Benefits

Keep food production, storage, and distribution local

Facilitate economic expansion of Maine’s commercial fishing industry

Increase opportunities for current and new businesses in Maine

Create a competitive advantage for existing businesses in Maine

Capitalize on large growth potential of Maine’s biopharmaceutical market

Benefit Maine brewers by offering affordable cold storage near a port

Help reduce costs for farmers, food processors and distributors