

INTEGRATED RESOURCE PLAN

JULY 9, 2025 INTERMOUNTAIN GAS RESOURCE ADVISORY COMMITTEE (IGRAC)

AGENDA



- Welcome & Introductions Brian Robertson
- Safety Moment & Feedback Process Brian Robertson
- IRP Recommendations Brian Robertson
- System Overview Brian Robertson
- **Economic Forecast** Ryan Denton
- Residential & Commercial Customer Growth Ryan Denton
- **Design Heating Degree Days –** Brian Robertson
- Industrial Customer Forecasts Nicole Gyllenskog & Jon Whiting
- Load Demand Curves Ryan Denton
 - **Questions/Discussion**

WELCOME

Introductions

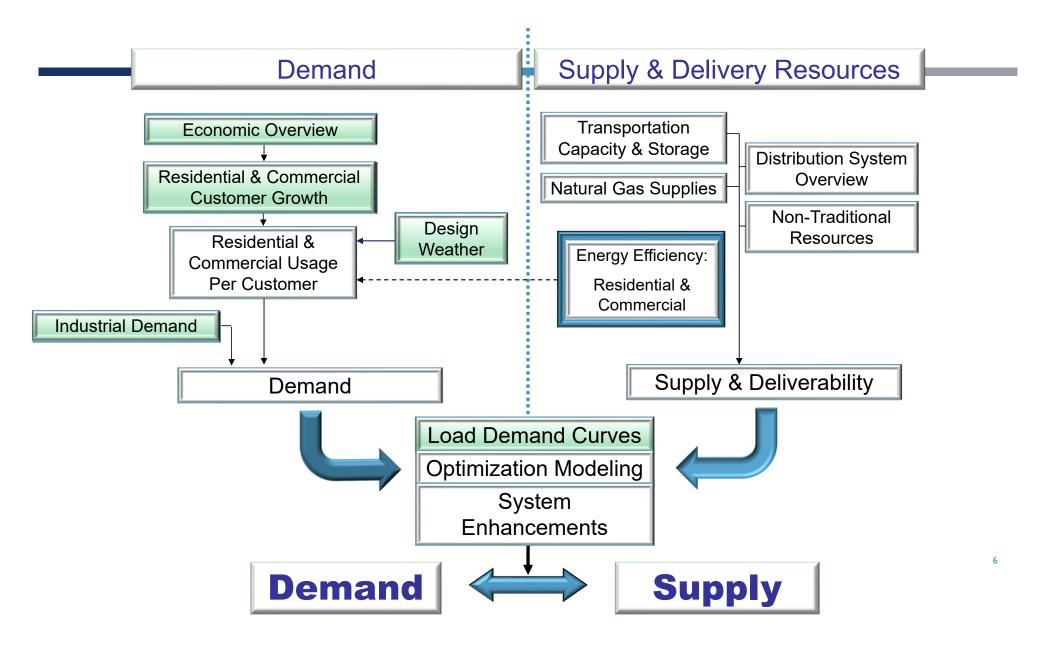
- Name
- Organization you are representing

BENEFITS OF AN IRP

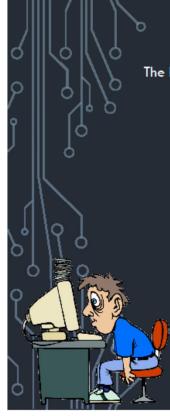
- Blueprint to meet the Company's firm customer demands over a five-year forecast period based on various assumptions
- Provides frequent updates to the projected growth on the Company's system
- Considers all available resources to meet the needs of the Company's customers on a consistent and comparable basis
- Solicits input from Stakeholders during the modeling process
- Helps to ensure Intermountain Gas Company will continue to provide reliable energy service while minimizing costs

INTERMOUNTAIN GAS COMPANY

Integrated Resource Plan Process



SAFETY MOMENT



Preventing Eyestrain

The National Safety Council provided several tips to take to avoid strained and tired eyes.

- Keep your screen at arm's length.
- Don't forget to blink.
- Take a break every 20 minutes by looking away at something at least 20-feet away for at least 20 seconds.
- Be mindful of lighting and glare.
- Make sure your screen isn't too bright.
- Adjust computer monitor properly.
- Increase your computer's type size.

https://www.nsc.org/Portals/0/Dacuments/Membership%20Site%20Document%20Library/2018-Materials/Digital%20Signage/preventevestrain.pdf2ver=2019-06-17-171635-500

ttps://www.nsc.ora/LinkClick.aspx?fileticket=FYTZXV6bfDE%3d&portalid=

FEEDBACK SUBMISSIONS



- IRP.Comments@intgas.com
- Please provide comments and feedback within 10 days
- Intermountain IRP Webpage: https://www.intgas.com/ratesservices/rates-tariffs/integrated-resource-plan/

2023 IRP ACKNOWLEDGEMENT AND IRP RECOMMENDATIONS

- Final Order No. 36249 Commission Acknowledged Intermountain's 2023 IRP Filing
- Commission Recommendations for Intermountain's IRP Process:
 - Recommends the Company to work with Staff to implement IRP reporting that includes system enhancement information in future IRPs, within six months of a Commission order
 - Recommends the Company to work with Staff to develop reports to the Commission of capacity enhancement projects that include in-service dates and project costs, within six months of a Commission order
 - Establish the practice of authorizing the Company's DSM avoided costs as part of IRP filings and authorize the DSM avoided costs associated with this filing.

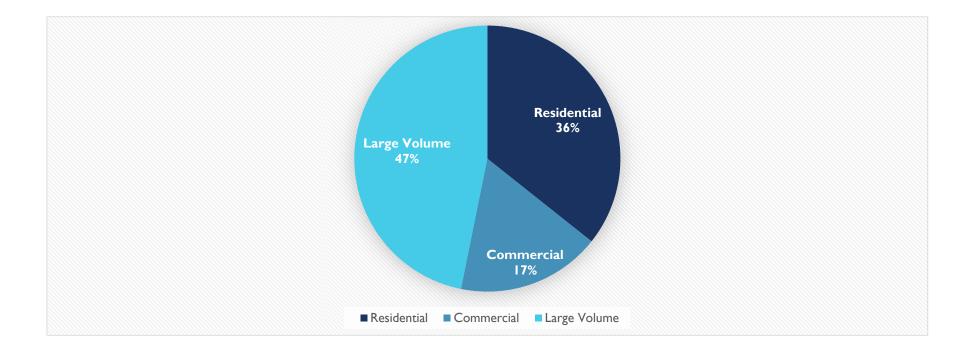
SYSTEM OVERVIEW

BRIAN ROBERTSON SUPERVISOR, RESOURCE PLANNING

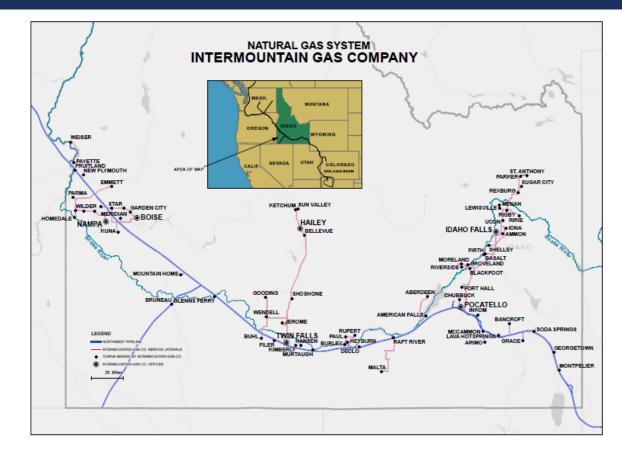
INTERMOUNTAIN GAS COMPANY

- Intermountain Gas Company is a natural gas local distribution company, founded in 1950 and served its first customer in 1956
- Provides service to 76 communities across southern Idaho
- 433,400+ customers

THROUGHPUT BY CUSTOMER CLASS



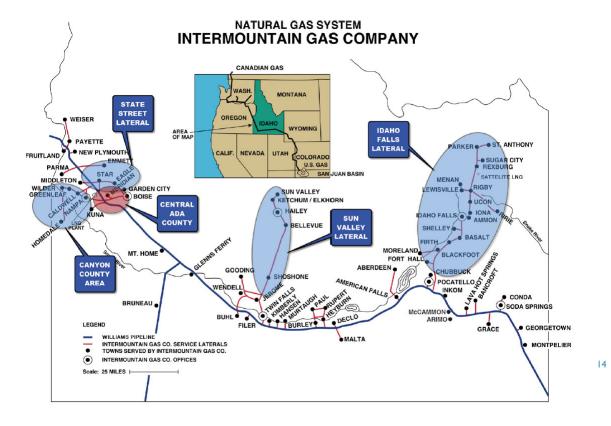
INTERMOUNTAIN GAS COMPANY DISTRIBUTION SYSTEM



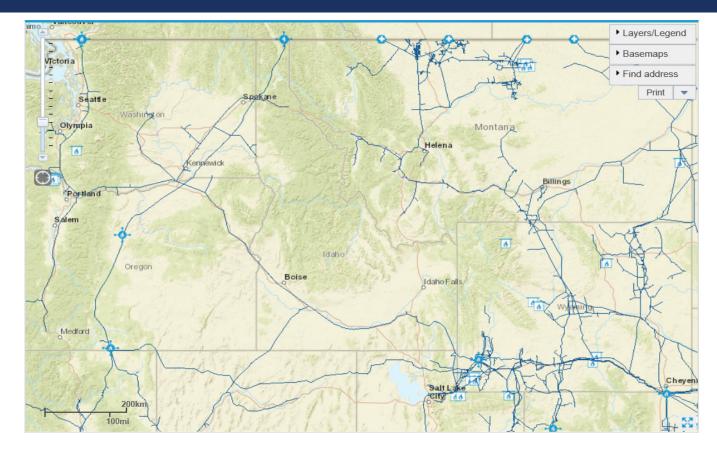
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AREAS OF INTEREST (AOI)

- Distribution System Segments:
 - Canyon County
 - Central Ada County Lateral
 - North of State Street Lateral
 - Sun Valley Lateral
 - Idaho Falls Lateral
 - All Other Customers



REGIONAL PIPELINES



ECONOMIC FORECAST

RYAN DENTON

WOODS & POOLE ECONOMICS, INC. Regional Projections

The methods used by Woods & Poole to generate the county projections proceed in four stages:

 First, forecasts to 2050 of total United States personal income, earnings by industry, employment by industry, population, household size, inflation, and other variables are made.

• Second, the country is divided into 179 Economic Areas (EAs) as defined by the U.S. Department of Commerce, Bureau of Economic Analysis (BEA). The EAs are aggregates of contiguous counties that attempt to measure cohesive economic regions in the United States.

• The third stage is to project population by age, sex, and race for each EA on the basis of projected net migration rates. For stages two and three, the U.S. projection is the control total for the EA projections.

• The fourth stage replicates stages two and three except that it is performed at the county level, using the EAs as the control total for the county projections.

Idaho Economic Forecast

For the State of Idaho and the Counties in Idaho

Future household growth, which is the key driver for future residential customer growth, is modeled as a function of total population (less those individuals in group quarters), and general economic conditions in the state.

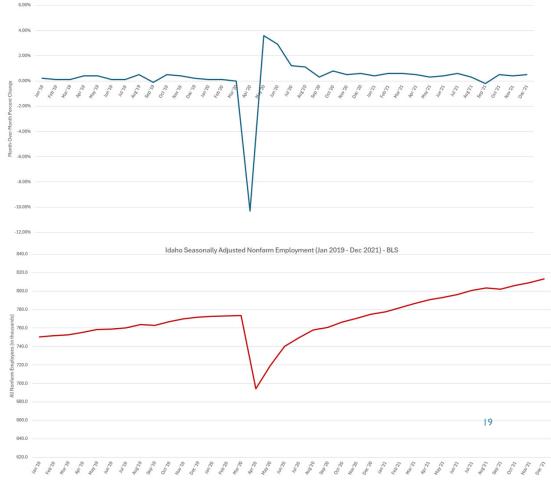
In brief: good or improving economic conditions will speed up the rate of household growth, however worsening or declining economic conditions will slow the rate of household formation and the rate of household growth.

COVID-19 Impact:

The height of COVIDs impact on the economy occurred primarily between March and May 2020. In April 2020 Idaho saw a seasonally adjusted nonfarm employment decline 10.3% MoM (a loss of 79,300 in nonfarm employment from the previous month).

Although there is a sharp recovery in the following month, with reversion to pre-pandemic levels, this recovery in MoM changes takes time to work itself through the levels of employment. Here we see residual effects in the following months/years, but we do see reversion back to the pre-pandemic trend rather quickly. Idaho Seasonally Adjusted Nonfarm Employment MoM Change (Jan 2019 - Dec 2021) - BLS

INTERMOUNTAIN GAS COMPANY INTEGRATED RESOURCE PLAN

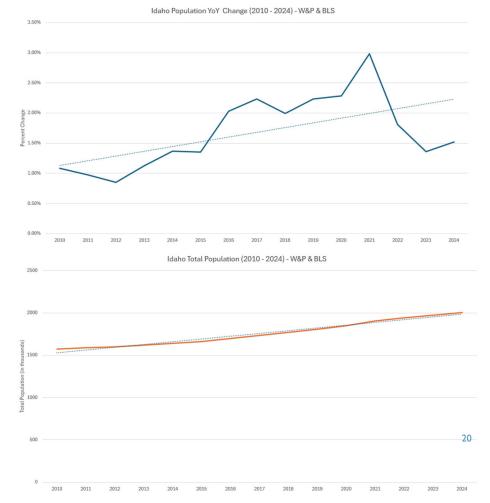


Population:

The growth in population has been a driving force in economic growth prior to the pandemic and continues today, though it has slowed down a bit since 2021. Population growth has brought new jobs to the state and help boost the economy.

Total population in Idaho has increased at a robust pace since 2013. From 2019 to 2021 Idaho saw the highest YoY percentage change in population in the nation, with the average YoY change being about 2.37%. This is an increase in the population of around 97,470 over these three years.

This rapid increase in population was driven mainly by domestic migration from more expensive and densely populated states like Oregon, Washington, and California.

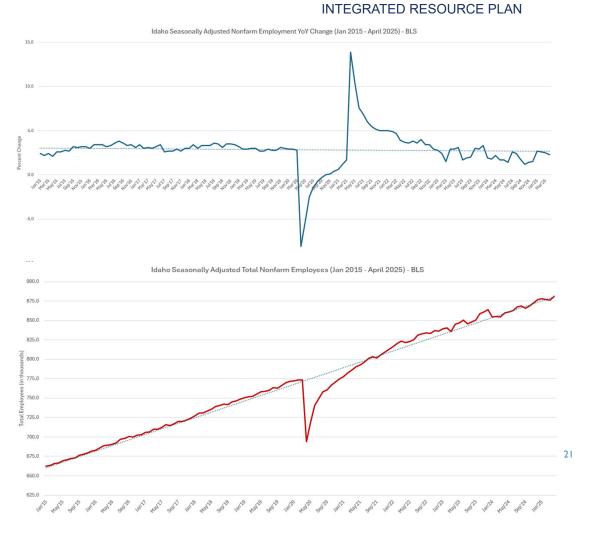


INTERMOUNTAIN GAS COMPANY INTEGRATED RESOURCE PLAN

Employment:

The top graph shows the total nonfarm employment YoY changes for each month from January 2015 to April 2025. The bottom graph shows total nonfarm employment over that same period.

There appears to be a slowing down largely due to a normalization of the labor market after an abnormally fast post-pandemic growing period. Other factors include slowing wage growth, slowing population growth, falling working-age to retirees ratio, and broader economic conditions. But still strong growth.

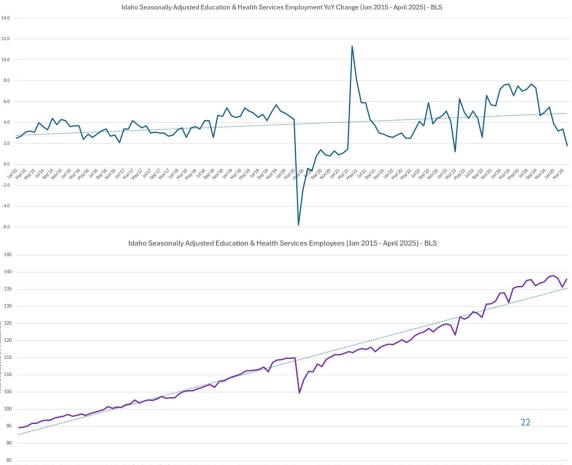


INTERMOUNTAIN GAS COMPANY

Employment:

The top graph shows the education and health services employment YoY changes for each month from January 2015 to April 2025. In 2025 thus far we've seen a YoY change of 3.9% in January, 3.2% in February, 3.4% in March, and 1.8% in April (though April is subject to revision).

The bottom shows this same sector but the actual levels of employment over that same period.



INTERMOUNTAIN GAS COMPANY INTEGRATED RESOURCE PLAN

Employment:

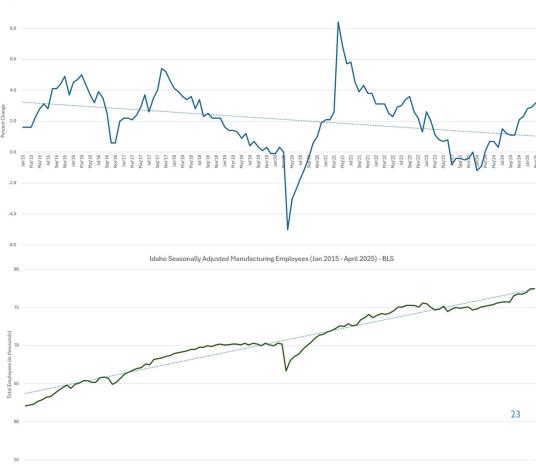
The top graph shows the YoY percent change in manufacturing employment from January 2015 to April 2025. In 2025 thus far we've seen a YoY change of 2.8% in January, 2.9% in February, 3.2% in March, and 3.6% in April (again, April is subject to revision).

The bottom shows this same sector but the actual levels of employment over that same period.

Overall Idaho is showing a lot of population and employment growth strength.

INTEGRATED RESOURCE PLAN Idaho Seasonally Adjusted Manufacturing Employment YoY Change (Jan 2025 - April 2025) - BLS

INTERMOUNTAIN GAS COMPANY



The Economic Forecast

In the 2025 – 2030 Forecast Period Idaho's Economy is currently expected to experience:

An average YoY population growth of 1.05%, with the State's population reaching around 2,114,477 in 2030.

An average YoY increase in total employment of about 15,642, adding around 93,870 jobs.

Ada and Canyon counties are projected to attain a total combined population of about 868,976 in 2030.



INTERMOUNTAIN GAS COMPANY INTEGRATED RESOURCE PLAN

The Economic Forecast

Nonfarm employment in Idaho is expected to increase on average 1.27% YoY over the 2025 to 2030 forecast period, which is around a 93,179 total increase.

Some specific sector projections:

Farm employment is projected to increase on average 0.28% YoY over the forecast period, which is an increase of around 691.

Manufacturing employment is projected to increase on average 0.34% YoY over the forecast period, which is an increase of around 1,676.

Construction employment is projected to increase on average 0.16% YoY over the forecast period, which is an increase of around 882.

INTERMOUNTAIN GAS COMPANY INTEGRATED RESOURCE PLAN

Sector	Avg YoY %-Change	Total Increase (2025 – 2030)
Farm	0.28%	691
Manufacturing	0.34%	1,676
Construction	0.16%	882

Sector	Avg YoY %-Change	Total Increase (2025 – 2030)
Transportation	1.01%	3,230
Wholesale Trade	0.46%	1,104
Retail Trade	0.53%	3,964
Utilities	2.08%	468
Finance & Insurance	0.93%	3,338
Real Estate & Rental & Lease	1.95%	9,535

The Economic Forecast

Combined, the transportation & warehousing, wholesale trade, retail trade, and utilities sectors are expected to see an average YoY percent growth of 0.66% over the 2025 to 2030 forecast period, an increase of around 8,766 in employment.

Combined, the finance & insurance and real estate & rental & lease sectors are expected to see an average YoY percent growth of 1.52%, an increase of around 12,873 in employment.

You can see the individual projections in the table.

The Economic Forecast

The service industries in Idaho are projected to see the most growth.

Combined, the professional & technical services, education, health care & social assistance, state & local government, accommodation & food services, and other services employment are expected to see an average YoY percent growth of 1.85%, an increase of around 57,298 over the 2025 to 2030 forecast period.

This growth in the services industries represents 61.49% of the total increase in nonfarm employees over this period.

You can see the individual projections in the table.

INTERMOUNTAIN GAS COMPANY INTEGRATED RESOURCE PLAN

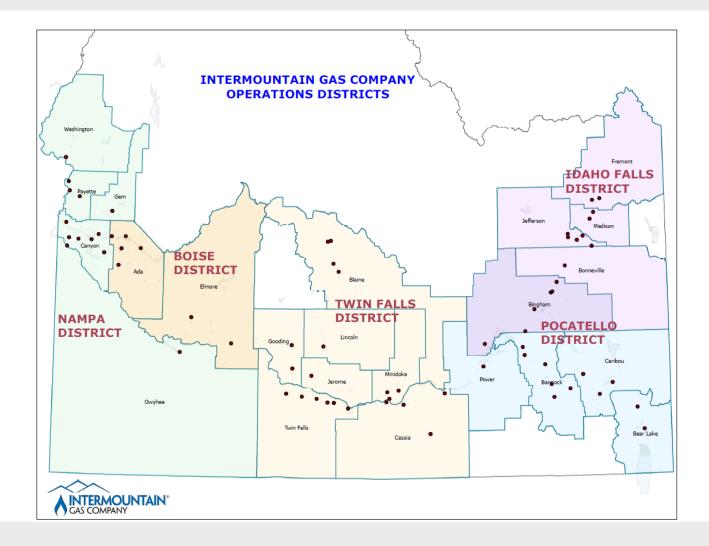
Sector	Avg YoY %-Change	Total Increase (2025 – 2030)
Professional & Technical Services	1.67%	8,416
Education Services	2.88%	5,154
Health Care & Social Assistance	2.65%	21,776
State & Local Government	1.02%	7,252
Accommodation & Food Services	1.81%	9,664
Other Services (Excluding Public Admin)	1.41%	5,036 ₂₇

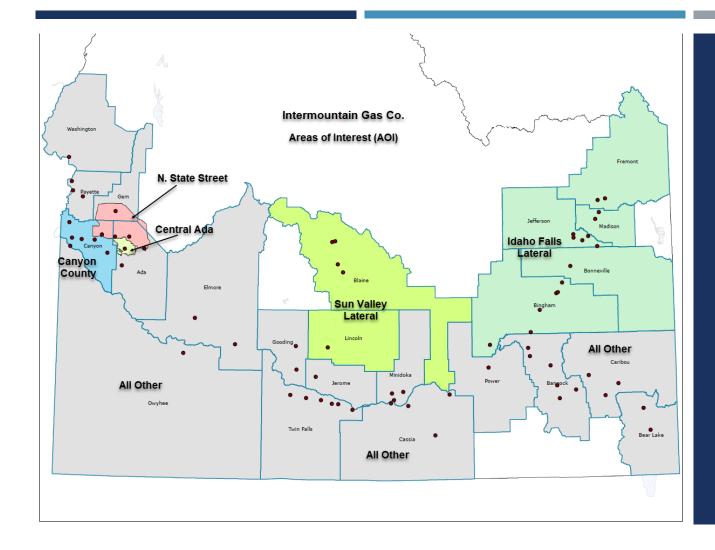
The Economic Forecast

QUESTIONS ?

RESIDENTIAL & COMMERCIAL CUSTOMER GROWTH

RYAN DENTON RESOURCE PLANNING ECONOMIST I





AOI GROWTH RATE

Base Case, High Growth, Low Growth

The Base Case Economic Forecast assumes a normal amount of economic fluctuation and normal business cycle. It is the "best estimate" of future economic activity in Idaho and its counties.

The Low Growth Scenario assumes a period of slower economic growth, with fewer employment opportunities, leading to a slower rate of population growth in the state and a slower rate of household growth.

The High Growth Scenario assumes a more rapidly growing economy, such as what happened in the 1990s and what we have seen more recently.

CUSTOMER COUNT: FORECAST INPUTS

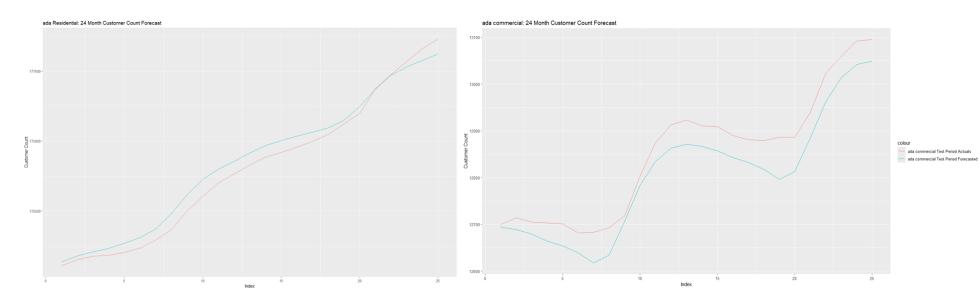
We use total number of households and total employment data provided by Woods & Poole.

Households are defined as occupied housing units. A housing unit is a house, an apartment, a group of rooms, or a single room occupied as separate living quarters.

The employment data include wage and salary workers, self-employed workers, private household employees, and miscellaneous workers. Historical employment data, 1969-2022, are from the U.S. Department of Commerce, Bureau of Economic Analysis.

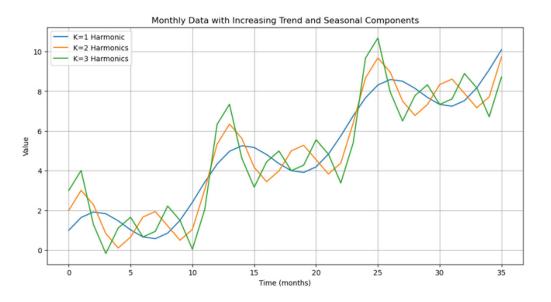
CUSTOMER COUNT: MODEL SELECTION

- AICc: Corrected Akaike Information Criterion
 - Model Fit
- SMAPE: Symmetric Mean Absolute Percentage Error
 - Model Accuracy

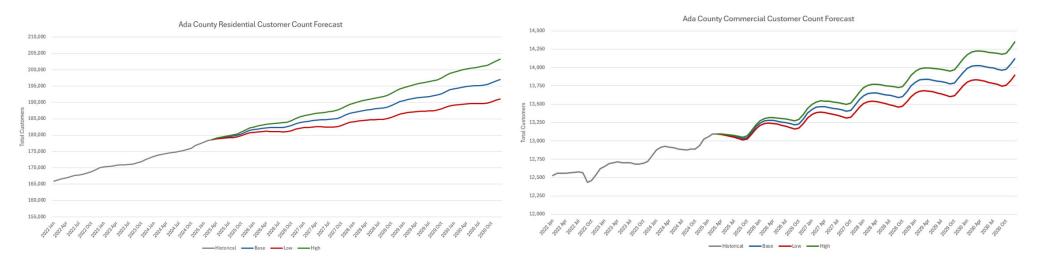


CUSTOMER COUNT: FORECASTING COMPONENTS

- Customers = β₀ + β₁HH + β₂Emp + Trend() + Fourier(period = "year", K) + ARIMA(p,d,q)(PDQ)
- Where:
 - HH: Number of Households;
 - Emp: Employment,
 - Trend(): Deterministic trend component,
 - Fourier(period = "year", K): Captures seasonality using K harmonics,
 - ARIMA(p,d,q)(PDQ): p = nonseasonal autoregressive terms, d = nonseasonal differencing, q = nonseasonal moving average terms. P = seasonal autoregressive terms, D = seasonal differencing, Q = seasonal moving average terms.



ADA COUNTY CUSTOMER FORECAST



Average YoY growth: 1.7%

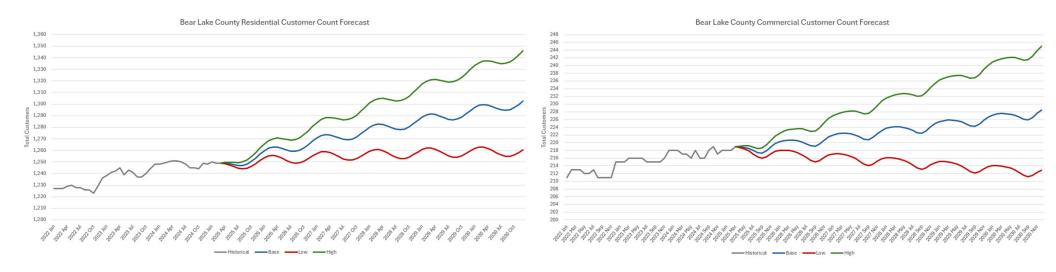
Total growth: 10.3%, 18,393 customers

Average YoY growth: 1.3%

Total growth: 7.8%, 1,026 customers

36

BEAR LAKE COUNTY CUSTOMER FORECAST



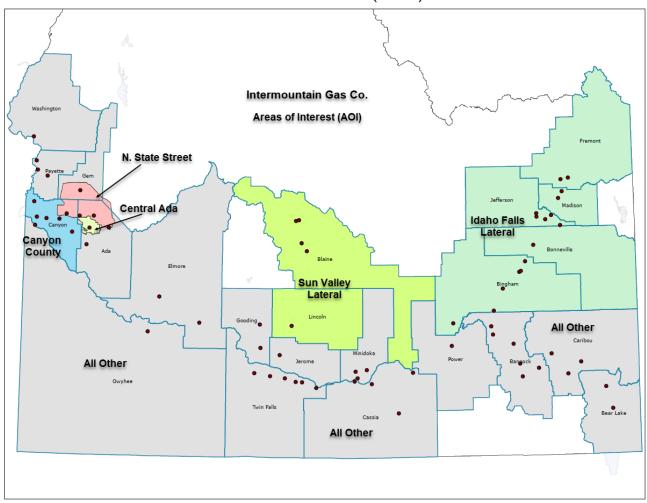
Average YoY growth: 0.7%

Total growth: 4.3%, 54 customers

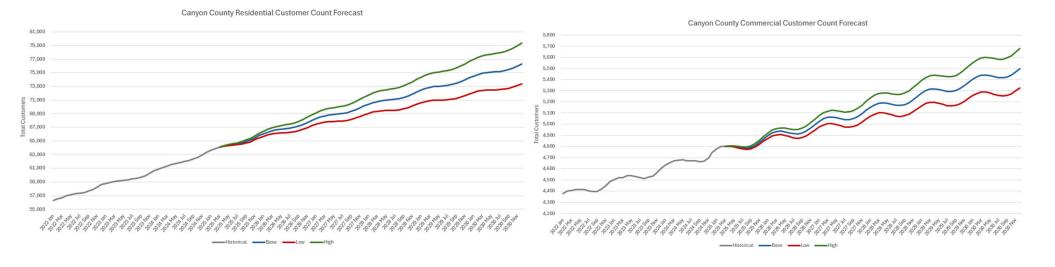
Average YoY growth: 0.7%

Total growth: 4.3%, 9 customers

FORECASTING GROWTH-AREAS OF INTEREST (AOI)



CANYON COUNTY CUSTOMER FORECAST



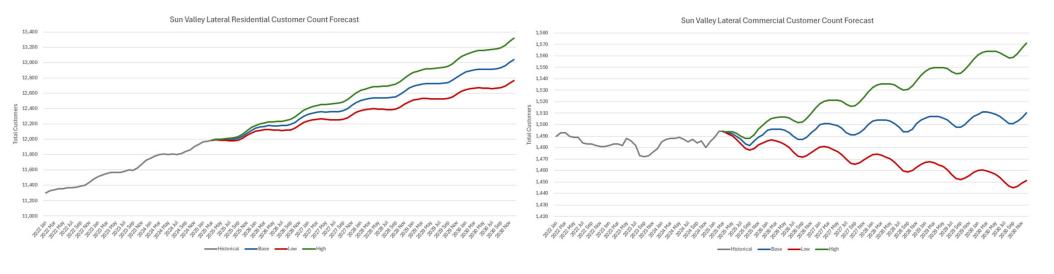
Average YoY growth: 3.1%

Total growth: 19%, 12,201 customers

Average YoY growth: 2.4%

Total growth: 14.5%, 696 customers

SUN VALLEY LATERAL CUSTOMER FORECAST



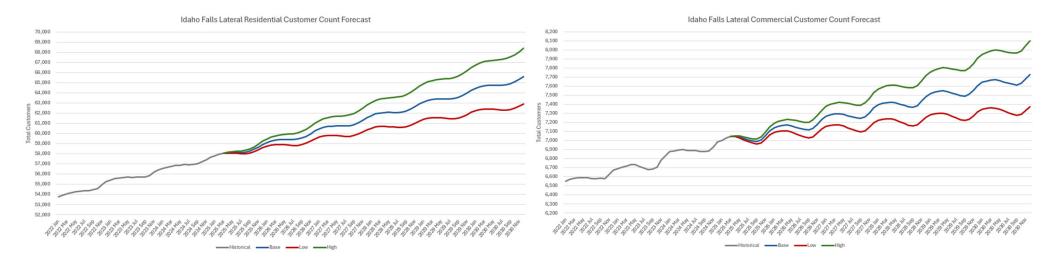
Average YoY growth: 1.5%

Total growth: 8.8%, 1,050 customers

Average YoY growth: 0.2%

Total growth: 1.1%, 16 customers

IDAHO FALLS LATERAL CUSTOMER FORECAST



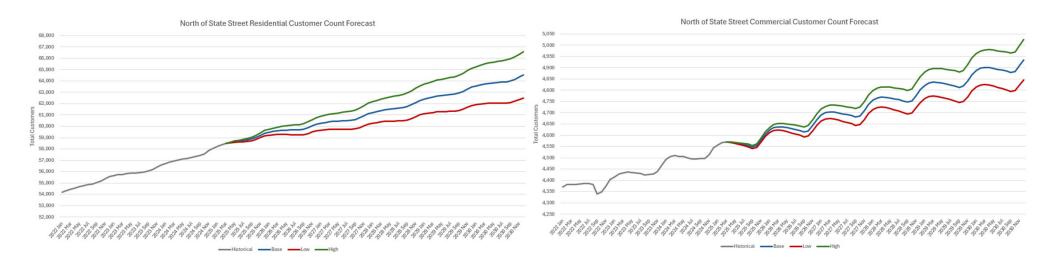
Average YoY growth: 2.2%

Total growth: 13%, 7,527 customers

Average YoY growth: 1.6%

Total growth: 9.7%, 684 customers

NORTH OF STATE STREET CUSTOMER FORECAST



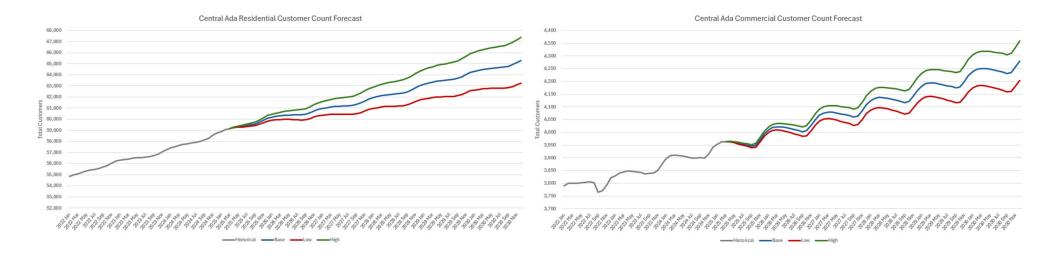
Average YoY growth: 1.7%

Total growth: 10.3%, 6,032 customers

Average YoY growth: 1.4%

Total growth: 8%, 364 customers

CENTRAL ADA CUSTOMER FORECAST



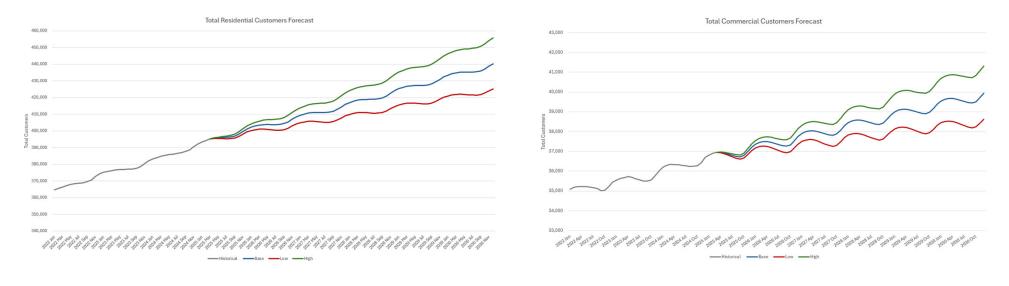
Average YoY growth: 1.7%

Total growth: 10.3%, 6,104 customers

Average YoY growth: 1.4%

Total growth: 8%, 316 customers

TOTAL SYSTEM CUSTOMER FORECAST



Average YoY growth: 1.9%

Total growth: 11.2%, 44,474 customers

Average YoY growth: 1.4%

44

Total growth: 8%, 2,985 customers

QUESTIONS?



IO MINUTE BREAK

HEATING DEGREE DAYS & DESIGN WEATHER

BRIAN ROBERSTON MANAGER, SUPPLY RESOURCE PLANNING

- Weather is a Key Residential & Commercial Demand Driver
- Heating Degree Days are Used to Capture Weather Effects
- Two Primary Weather Scenarios are Used in the IRP:
 - Normal HDD
 - Design HDD

HEATING DEGREE DAY (HDD)

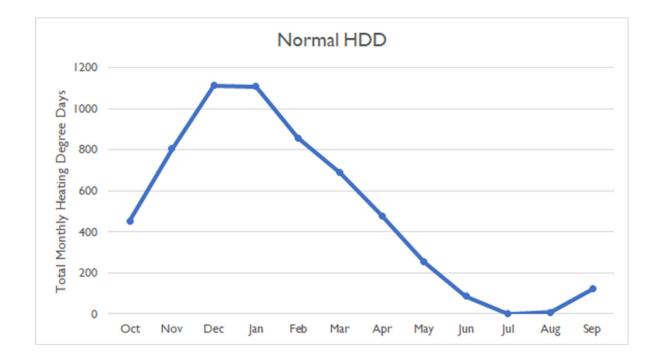
- What is a Heating Degree Day?
- Industry-Wide Standard Measuring Degrees Below a Set Base Temperature
- Base of 65 Degrees is Most Common
 - March 2nd, 2023 Boise Example:

Daily High: 39 Degrees °F Daily Low: 23 Degrees °F Mean: 31 Degrees °F 65 Degrees – 31 Degrees = 34 HDD

NORMAL HEATING DEGREE DAYS

- Benchmark for the IRP
- Used for Routine Planning and Represent the Typical or "Normal" Weather Expected on a Given Day
- 30-Year Rolling Average of Daily Mean Temperatures
- Normal for the IRP is the 30-Years Ended December 2024

NORMAL HEATING DEGREE DAYS



DESIGN DEGREE DAYS

- Design Degree Days Model the Coldest Temperatures that Could Feasibly Occur on Intermountain's System
- Created by Modeling Design Peak Day, then Modeling the Surrounding Week, Month, and Year

DESIGN PEAK DAY

- Design Peak Day is the Absolute Coldest Day Planned for in the Design Year
- Engaged Idaho State Climatologist, Dr. Russell Qualls, to Conduct a Peak Day Study
- Study Produced a Range of Peak Days for Various Probability Assumptions
- 50-Year Peak-Day Event was Selected (78 HDD)
- Peak Day is Modeled to Occur on Jan 15th of the Design Year



- The Days Surrounding the Peak Day are Modeled After the Coldest Recorded Consecutive 5-Days in a 50 Year Period.
- Peak Day is Assumed to be the Second Day in the 5-Day Period.

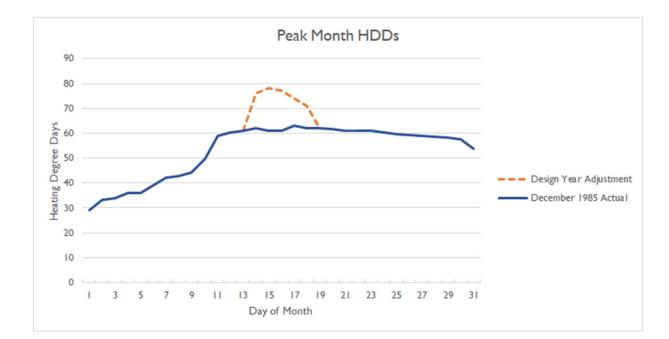
Five Day Weather Forecast

Day 1	Peak Day	Day 3	Day 4	Day 5
			Carly to	
Snow	Snow	Snow	Snow	Sunny
-11° F	-13° F	-12° F	-9° F	-6° F
December 21st, 1990 Actual	50-Year Peak Day Event	December 23rd, 1990 Actual	December 24th, 1990 Actual	December 25th, 1990 Actual

PEAK 5-DAY DESIGN

PEAK MONTH DESIGN

- The Days Surrounding the Peak
 5-Day Period are Modeled
 After the Coldest Calendar
 Month in the last 50 Years
- The Current Peak Month is December 1985
- This Month Forms the Basis for January Design Weather

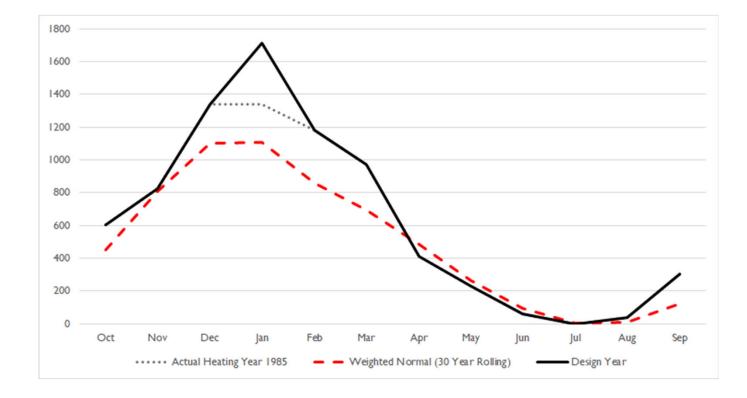


DESIGNING THE REST OF THE YEAR

- The Rest of the Year is Modeled After the Coldest Heating Year in a 50 Year Record
- Oct 1984 Sep 1985 Continues to be the Coldest
- This Period Also Included the Coldest Critical Three Month Heating Period (Dec-Feb)

Oct	Nov	Dec	Jan	Feb	Mar	Apr	Mav	Jun	Jul	Aug	Sep
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DEGREE DAY GRAPH



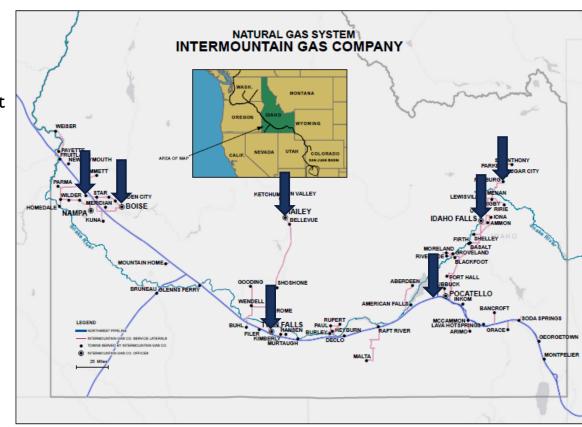
AOI DEGREE DAYS

- Intermountain's service area is climatologically diverse
- Idaho Falls or Sun Valley vs. Boise
- Intermountain has developed unique Degree Days for each AOI
- Methods used to calculate AOI Degree Days mirror the Total Company approach

AOI DEGREE DAYS

Weather Stations West to East:

- KBOI
- KEUL
- KTWF
- KSUN
- KPIH
- KIDA
- KRXE



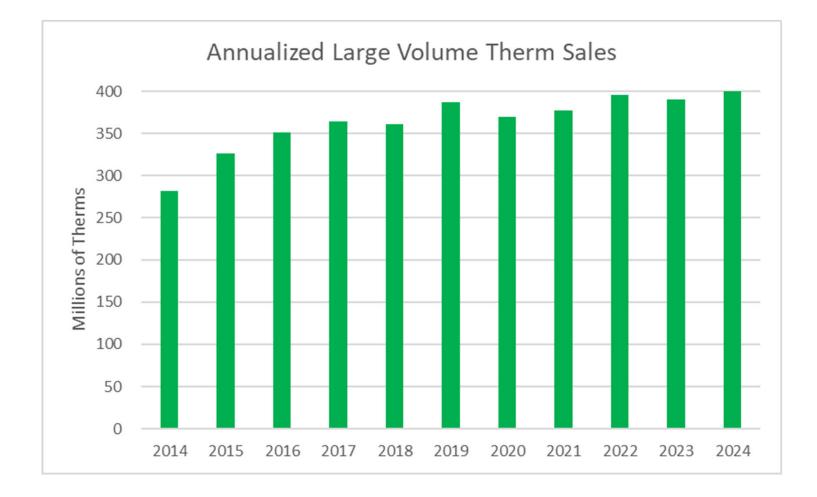
QUESTIONS?

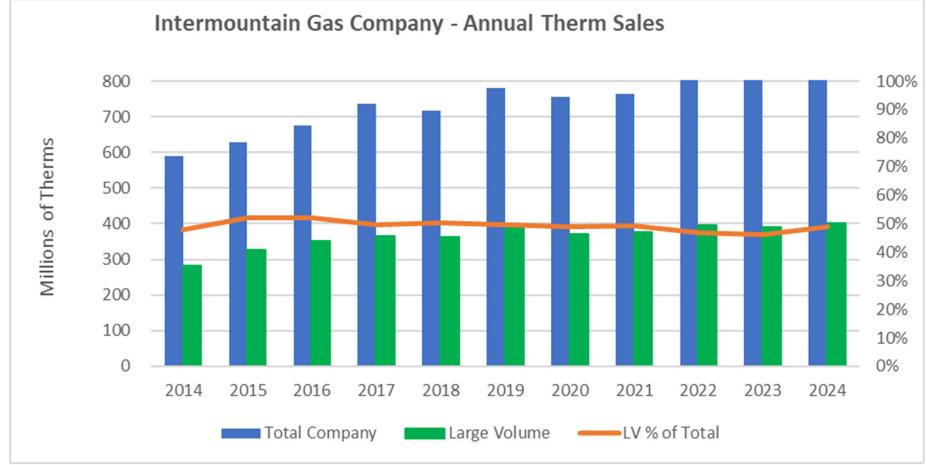
2025 IRP LARGE VOLUME CUSTOMER FORECAST

JON WHITING & NICOLE GYLLENSKOG MANAGERS, INDUSTRIAL SERVICES

WHAT IS A LARGE VOLUME CUSTOMER?

- I 52 largest customers; approximately 49% of 2024 sales
- Mix of "Industrial" and "Commercial" types
- As a group exhibit fairly high load factor
- Provide thousands of Idaho jobs; huge impact on economy





REQUIREMENTS OF A LARGE VOLUME CUSTOMER

- Minimum 200,000 Therms per contract-year requirement
- Must elect I of 3 tariffs:
 - LV-I bundled sales
 - T-3 interruptible transportation or T-4 firm transportation
- Minimum one-year contract; the contract sets the term and Maximum Daily Firm Quantity (MDFQ) for firm peak day use
- Contracts are site specific; can combine meters on contiguous property

CLASSIFICATION OF CURRENT 152 LV CUSTOMERS

	Percent of Total		
By Rate Class:	<u>#</u> of	% of	Therms
LV-1 Sales –	37	24%	4%
T-3 Interruptible Transport –	9	6%	9%
T-4 Firm Transport –	106	<u>70%</u>	87%
Total –	152	100%	100%

SEGMENTATION OF 152 LARGE VOLUME CUSTOMERS

By Market "Segment"	#	<u>%</u>	<u>Therms%</u>
Potato Processors –	18	12%	28%
Other Food Processors –	17	11%	32%
Meat & Dairy –	24	6%	4%
Ag & Feed –	8	5%	8
Chemical/Fertilizer –	3	2%	8%
Manufacturing —	33	22%	6%
Institutional —	33	22%	6%
Other –	<u> 6</u>	%	<u>5%</u>
Total –	152	100%	100%

LOCATION OF 152 LARGE VOLUME CUSTOMERS

By AOI:	_#_	%	Therms%
♦IFL —	27	8%	17%
SVL −	4	3%	1%
Central Ada –	2	1%	1%
State Street –	4	3%	1%
Canyon County –	20	13%	15%
♣All Other –	<u>95</u>	<u>62%</u>	<u>65%</u>
Total –	152	100%	100%

OVERVIEW OF FORECAST TECHNIQUE

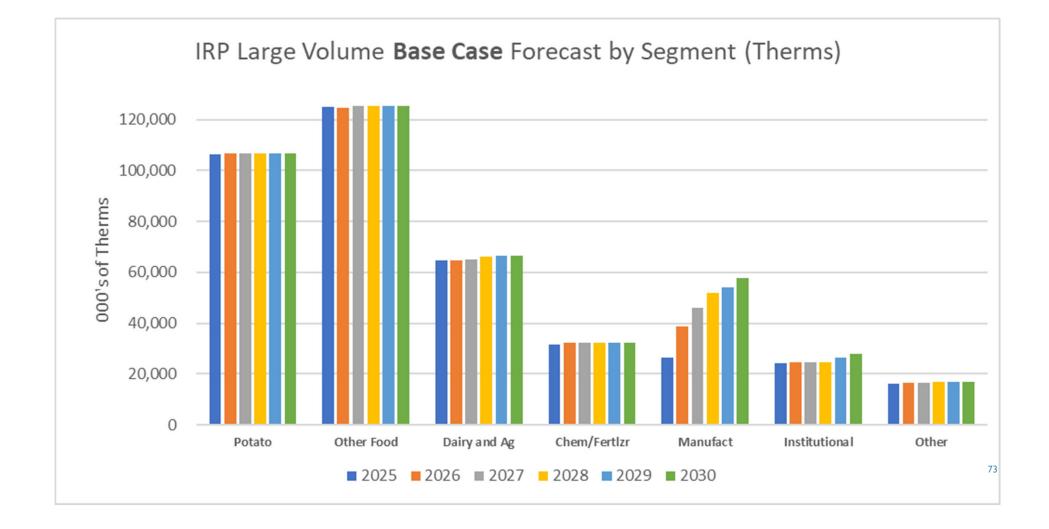
- Most not as weather sensitive as the Core Market
- Small population (not as many customers)
- Not as homogenous as Core (size, weather sensitivity)
- Don't use statistics/regression techniques
- Use an "adjusted" historical usage approach
- Forecast both Therm use and CD (MDFQ/MDQ)

APPLICATION OF FORECAST TECHNIQUE

- Adjusted historical data with customer information and other data (e.g. EDO's) to develop three forecasts
 - Base Case
 - High Growth
 - Low Growth
- Assumed growth by specific customers
- Used recent trends to validate results

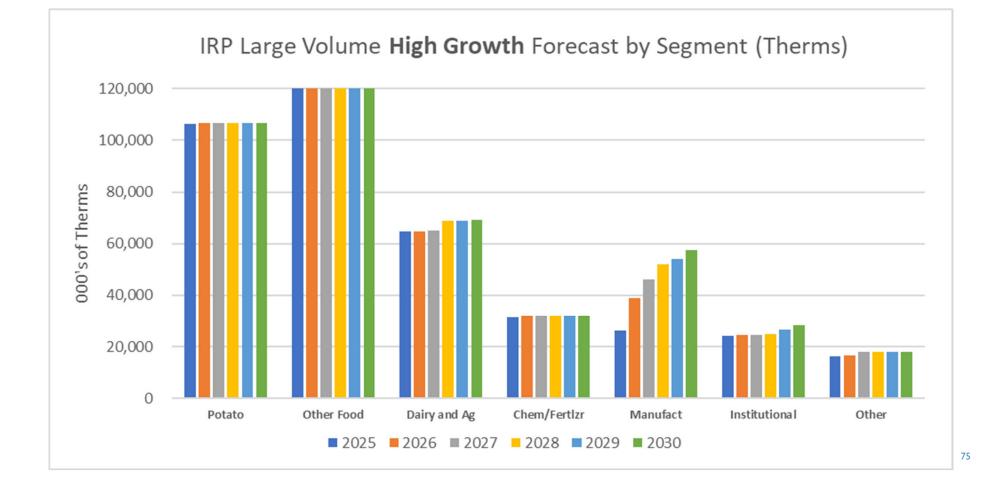
BASE CASE SCENARIO ASSUMPTIONS

- Starts with historical actuals
- Adjust for customer information and trends
- Natural gas prices competitive with other energy sources
- Economy dealing with inflation and supply chain issues
- Includes 5 new customers
- Mix of segments; All T-4. 3 are "All Other" and 2 are in Canyon.
- Compounded annual growth rate of 1.9%



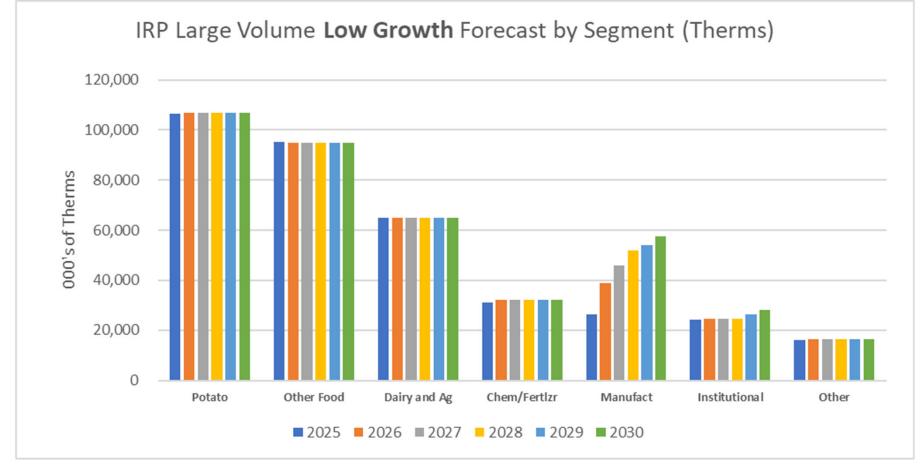
HIGH GROWTH SCENARIO ASSUMPTIONS

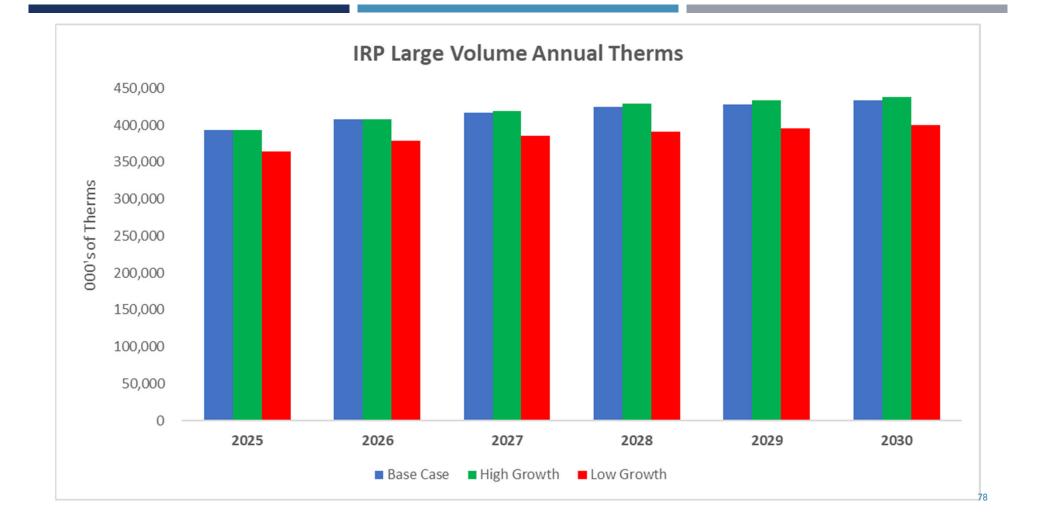
- Starts with Base Case Forecast
- Natural gas prices remain comparatively low
- Economy comes out of the inflation with continued growth
- Assumes 10 new customers totaling 7.2 million Therms by 2030
- Additions mostly T-4 (9); 3 Meat & Dairy and 7 various segments; most growth in All Other
- Compounded annual growth rate of 2.2%

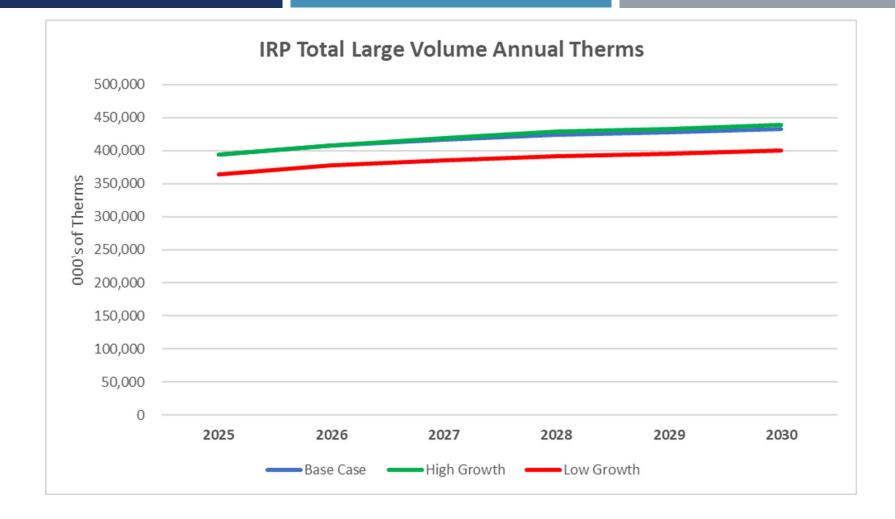


LOW GROWTH SCENARIO ASSUMPTIONS

- Starts with Base Case Forecast
- Assume gas prices are less competitive
- Economy slows; recession or inflation causes slowing in growth
- Removed any customer having difficulty staying above the 200,000 Therm annual minimum
- Two new T-4 customers; I in Canyon, & I in the "Other," segment
- Compounded annual growth rate of I.1%

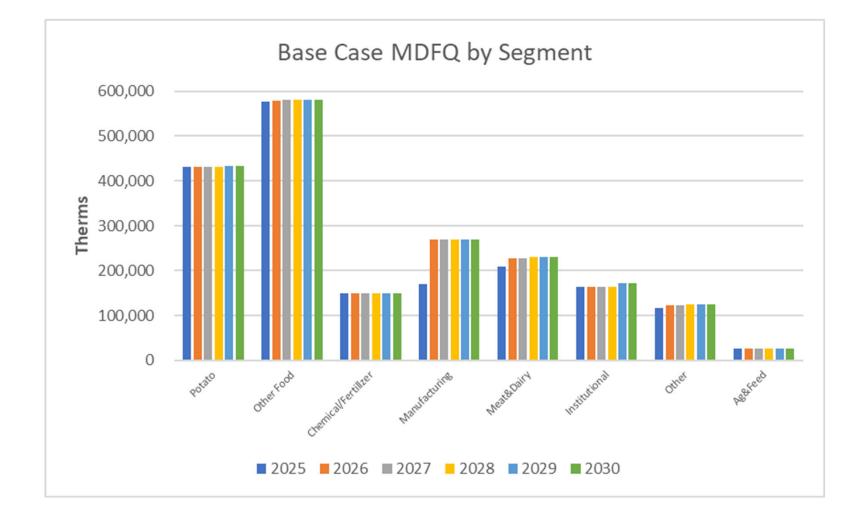






OPTIMIZATION MODELING -MDFQVSTHERM FORECAST

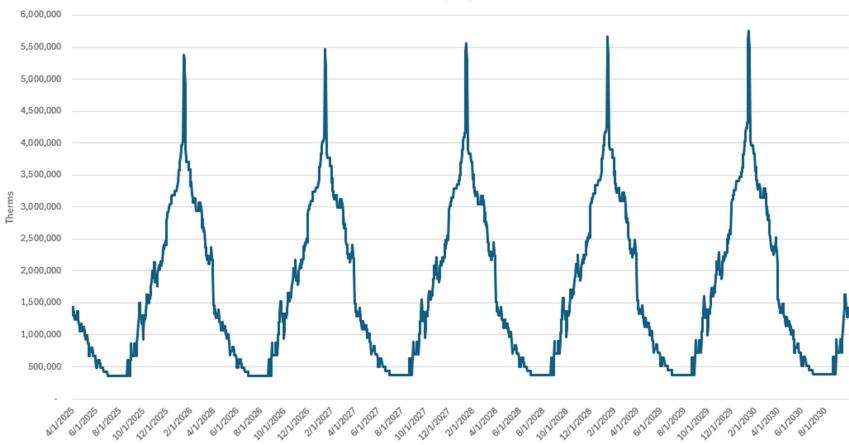
- Use MDFQ not therm forecast in optimization model
- Contract includes Maximum Daily Firm Quantity (MDFQ)
- Intermountain provides MDFQ 365 day/year; gas supply
- MDFQ trends therm projections
- Only firm customers in design peak; no interruptible
- Includes new customer additions
- Compounded annual growth rate of 1.5%



QUESTIONS?

LOAD DEMAND CURVES

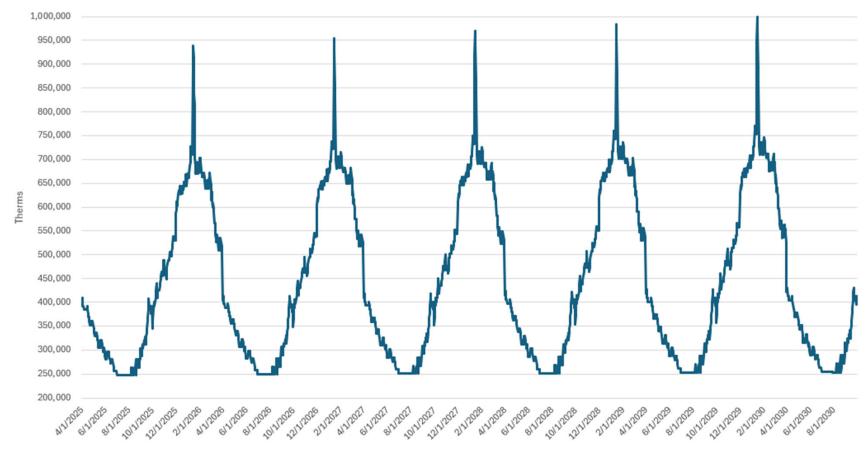
- Incorporates several inputs
 - Res & Com Customer Forecast, Normal and Design Weather, Use Per Customer, Demand Side Management, and Large Volume Forecast.
 - LDC = (Customer Forecast * HDD * User Per Customer) DSM + LV Forecast
- Load Demand Curve Utilization
 - Identifies potential upstream pipeline and distribution system constraints
 - Resource Optimization
 - Storage Management
- Remedies for any constraints will be identified later
- Note: Load Demand Curves for upstream pipeline modeling will differ from distribution system modeling



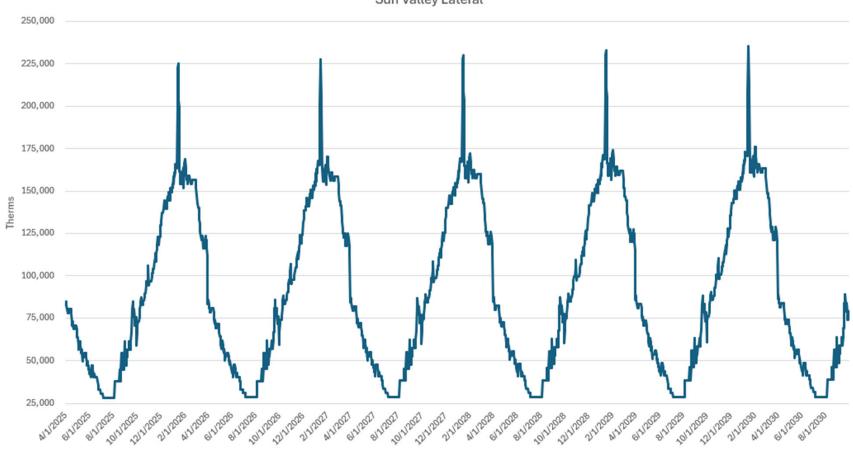
Total Company

AREAS OF INTEREST

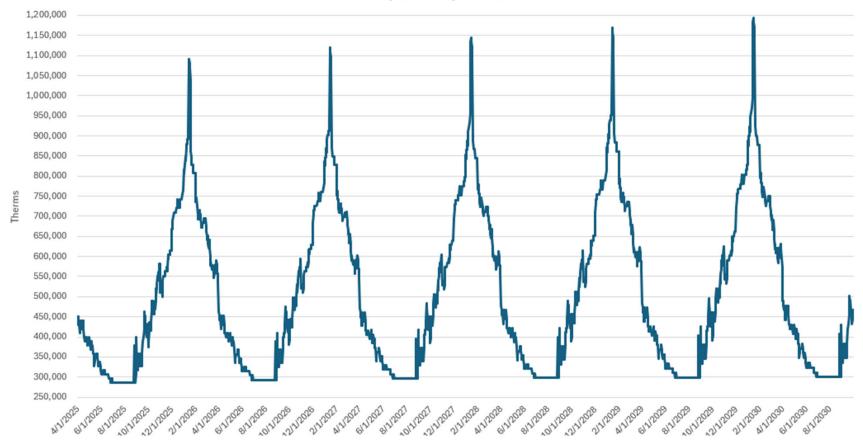
- Idaho Falls Lateral
- Sun Valley Lateral
- Canyon County Lateral
- North of State Street Lateral
- Central Ada County



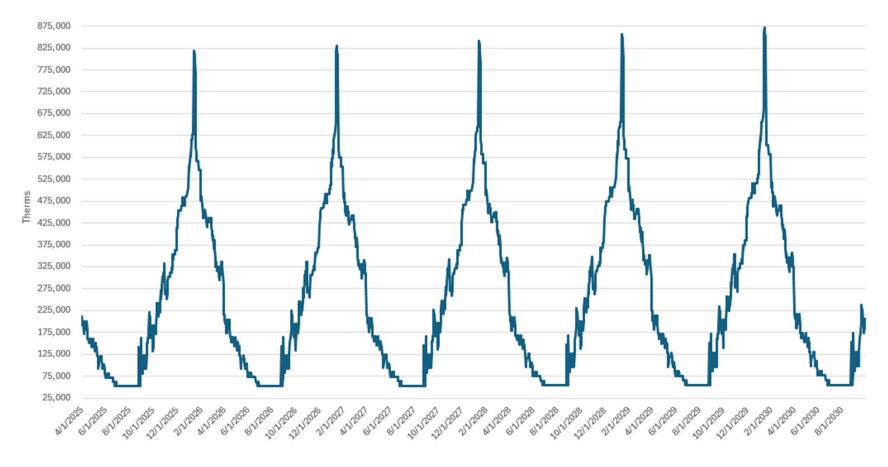
Idaho Falls Lateral



Sun Valley Lateral

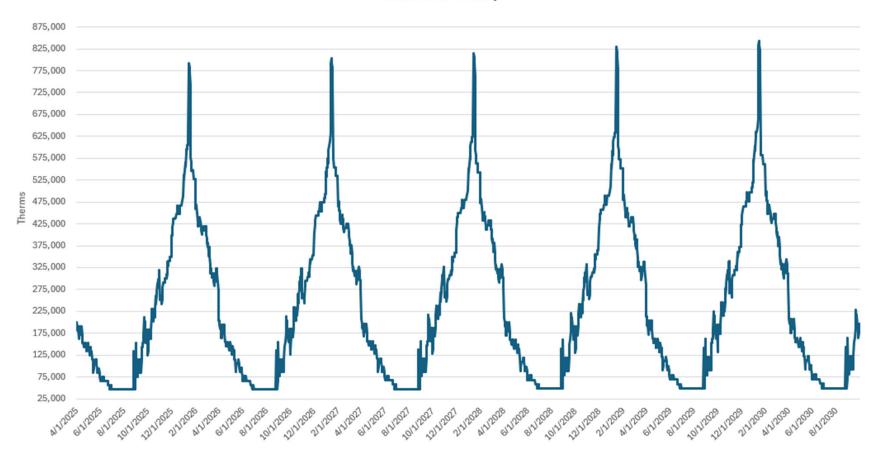


Canyon County Lateral



North of State Street Lateral

89



Central Ada County

QUESTIONS?

ADDITIONAL MEETINGS

- Wednesday, August 13, 2025 via Microsoft Teams
 - Usage Per Customer
 - Energy Efficiency
 - Supply Side Resources
 - Distribution System Modeling

- Wednesday, September 17, 2025 via Microsoft Teams
 - Potential Capacity Enhancements
 - Resource Optimization
 - Planning Results

FEEDBACK SUBMISSIONS



- IRP.Comments@intgas.com
- Please provide comments and feedback within 10 days