



# **BUSINESS MEETING PRESENTATION**

OCTOBER 8, 2019

# AGENDA

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**PACIFIC TRADING FORUM 2019**

**PG&E UPDATE**

**GAS OPERATIONS UPDATE**

**NATURAL GAS STORAGE STRATEGY**

**AFTERNOON LOGISTICS**

# PG&E UPDATE

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## **NEW PG&E EXECUTIVE LEADERSHIP**

- PG&E Corporation CEO Bill Johnson
- Utility CEO Andy Vesey
- Refresh of PG&E Board of Directors

## **BANKRUPTCY - PLAN OF REORGANIZATION**

- Filed on September **9, 2019**
- Expected Approval By June **30, 2020**

## **2019 GT&S RATE CASE FINAL DECISION**

- Adopted on September **12, 2019**



# **GAS OPERATIONS UPDATE**

# OUR JOURNEY CONTINUES

## GAS SAFETY EXCELLENCE

We will deliver Gas Safety Excellence by:

- Putting **SAFETY** and people at the heart of everything
- Investing in the **RELIABILITY** and integrity of our gas system
- Continuously improving the effectiveness and **AFFORDABILITY** of our processes



# OUR PROGRESS SINCE 2011

## RISK REDUCTION



Strength Testing

1,380 miles



ILI Upgrade

1,071 miles



Pipe Replacement

265 miles  
transmission  
pipeline replaced

Valve Automation

337 valves  
automated

➔ Completed 11 of 12 NTSB Safety Recommendations



# CONTINUOUS IMPROVEMENT

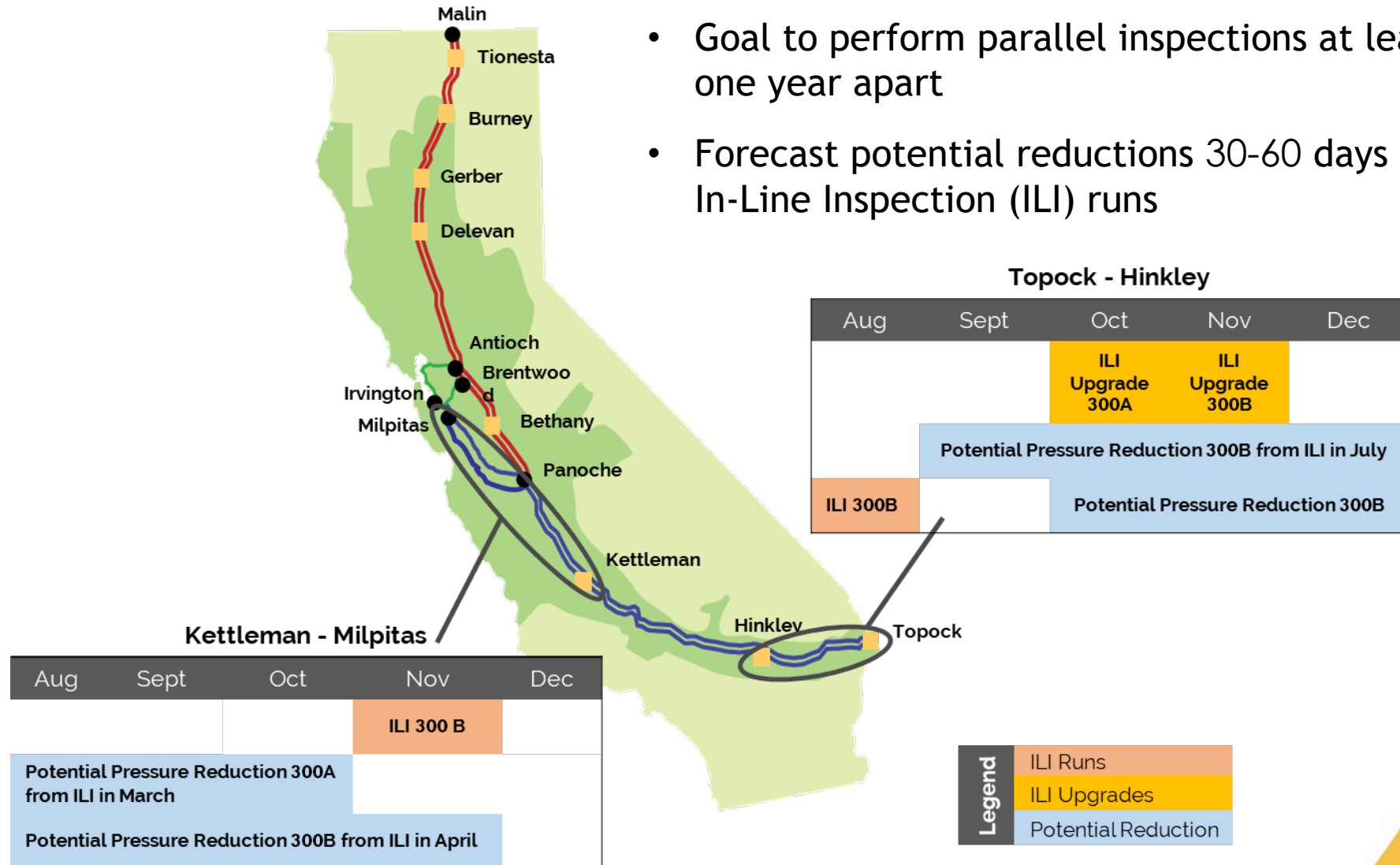
## AREAS OF FOCUS

- Long-term planning
- Improve outage management process for all major maintenance types and emergent work streams
- Continue bundling work streams: Hydrostatic testing and ILI Upgrades
- Create solutions to mitigate impact to customers

# BACKBONE PLANNING

## ILLUSTRATIVE OVERVIEW OF ILI WORK ON BAJA PATH

- Goal to perform parallel inspections at least one year apart
- Forecast potential reductions 30-60 days after In-Line Inspection (ILI) runs



# OUR PLANS FOR 2020



## Strength Testing

109 miles

## ILI Upgrade

681 miles

## Pipe Replacement & Valve Automation

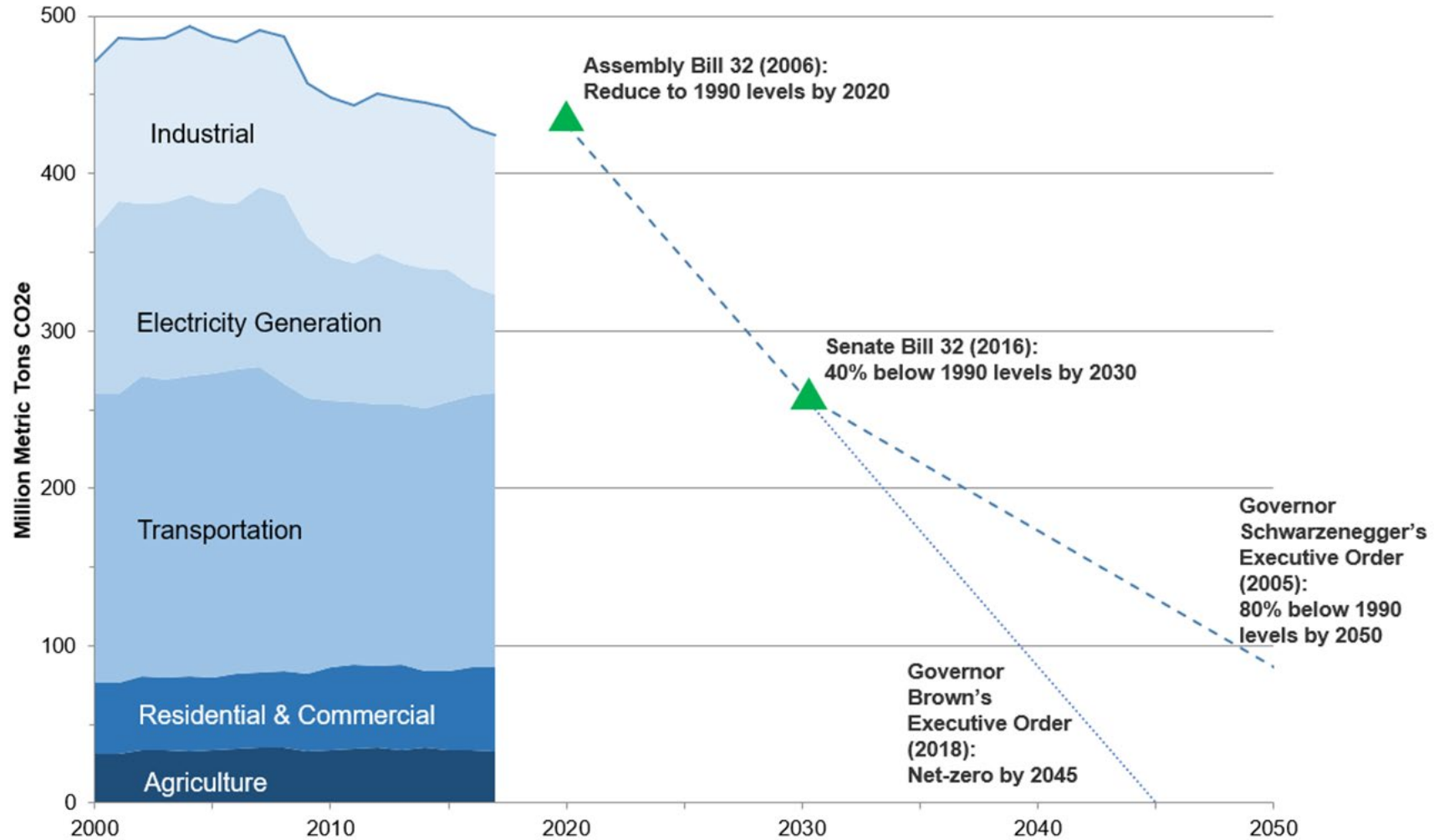
- Replace 3.6 miles transmission pipeline
- Automate 29 valves

## Shallow/Exposed Pipe

2.1 miles

# GAS STRATEGY

## CALIFORNIA'S CLIMATE GOALS

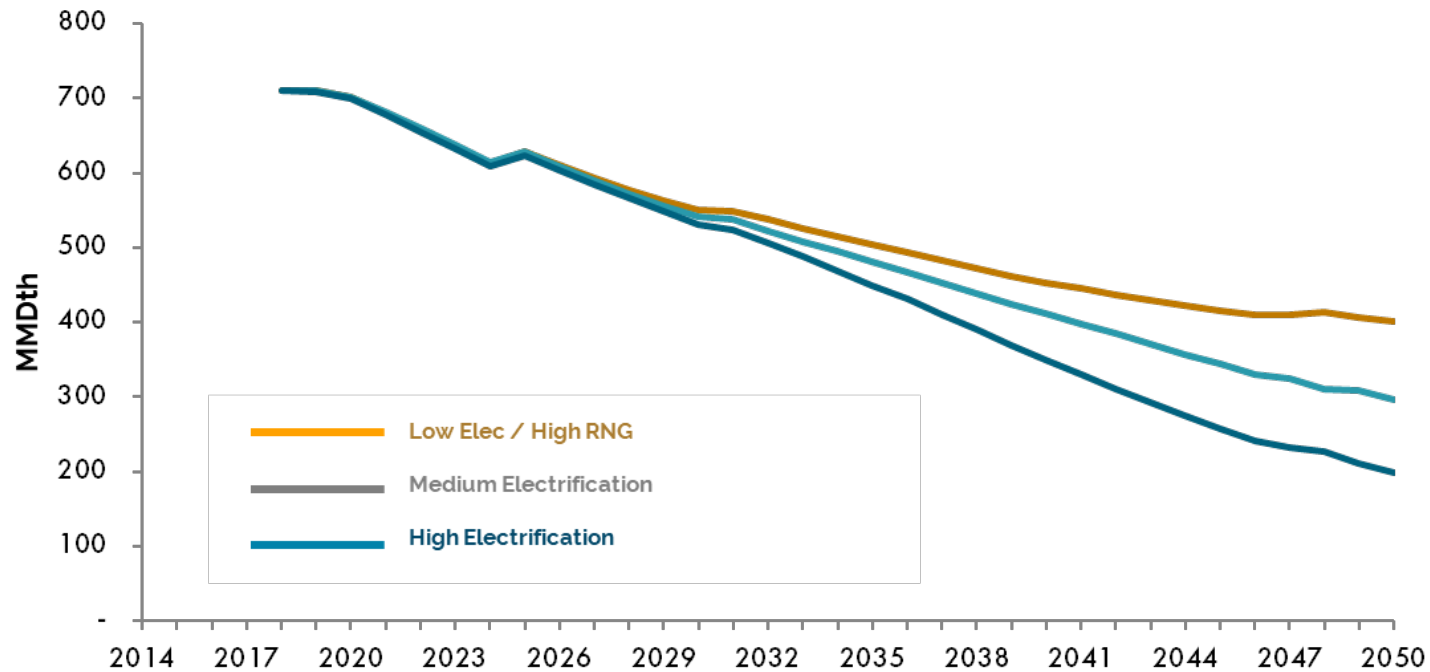


# GAS STRATEGY

## PG&E'S POTENTIAL THROUGHPUT FORECAST

Throughput on the gas delivery system will likely decline over time as California works to meet its GHG emissions reduction goals, even under high Renewable Natural Gas scenarios

Illustrative PG&E Annual Gas System Throughput Forecast

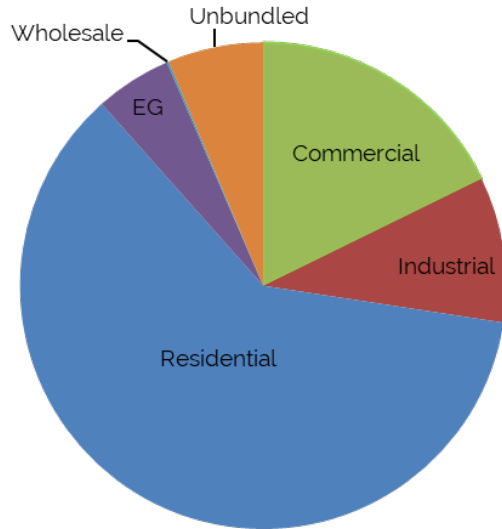


Source: External consultant, Energy and Environmental Economics (E3)

# GAS STRATEGY

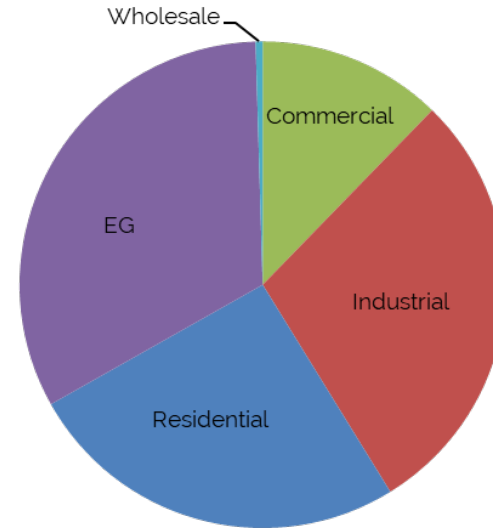
## PG&E'S REVENUE AND THROUGHPUT COMPARISON

2018 Direct Use Revenue (\$)



Class	% Total
Commercial	17.7%
Industrial	9.7%
<b>Residential</b>	<b>61.0%</b>
EG	5.1%
Wholesale	0.1%
Unbundled*	6.4%

2017 Direct Use Throughput (Therms)



Class	% Total
Commercial	12.3%
Industrial	28.9%
<b>Residential</b>	<b>25.6%</b>
EG	32.7%
Wholesale	0.5%

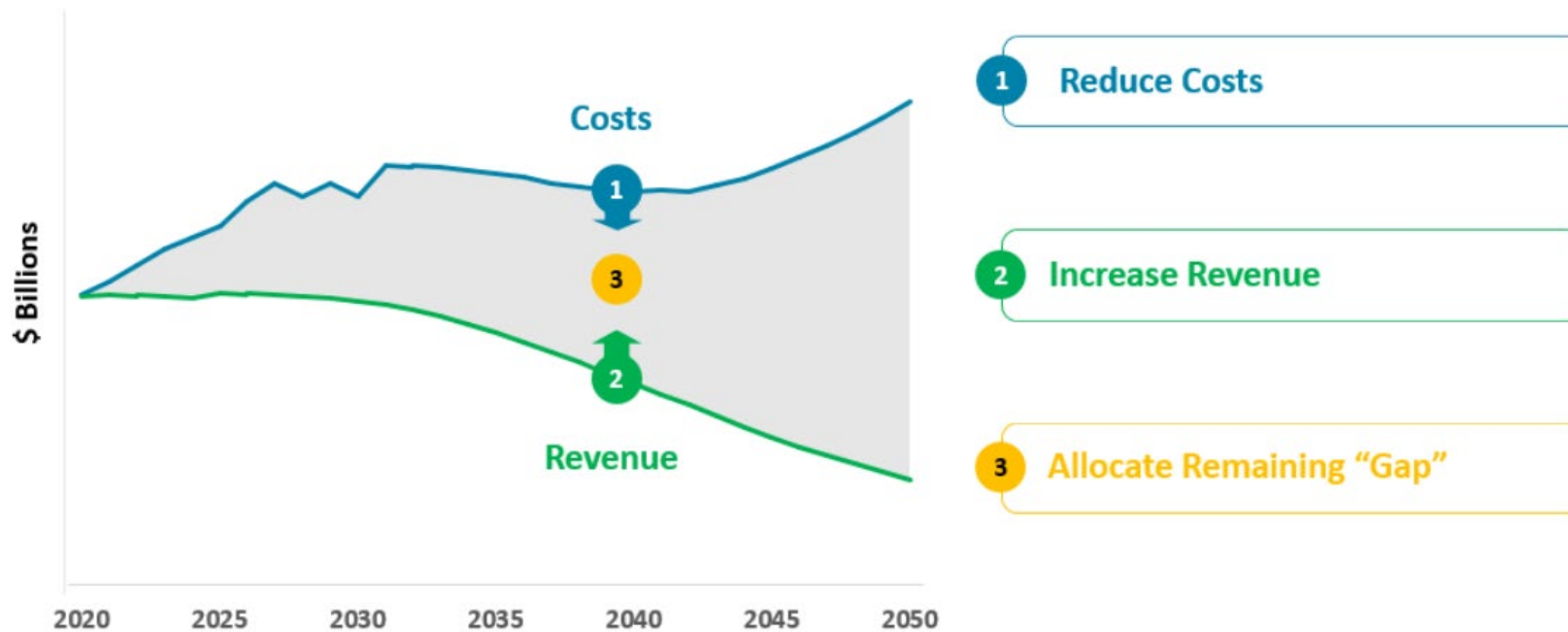
**Residential customers represent a substantially larger portion of revenue than throughput**

\*Storage and Backbone services sold into the market.

# GAS STRATEGY

## PG&E'S STRATEGY

PG&E is focused on developing implementation plans on each of the solutions identified to minimize impacts to rates as throughput decline.





# **NATURAL GAS STORAGE STRATEGY (NGSS)**



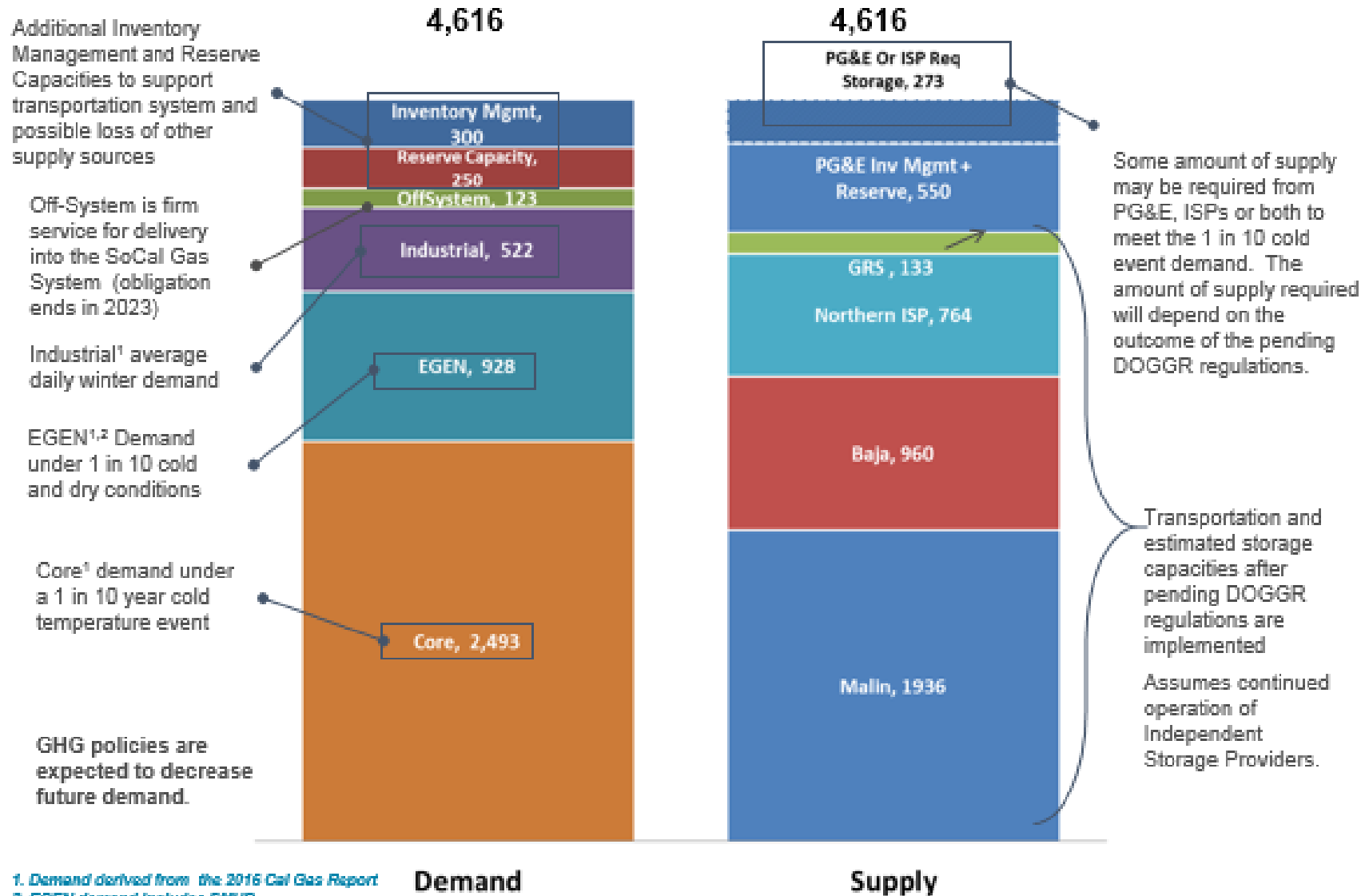
# NGSS ADOPTED IN 2019 GT&S RATE CASE FINAL DECISION

- DOGGR Regulations Compliance and Capacity Impacts
- New and Modified Storages Services
- Timeline of Implementation
- Rates

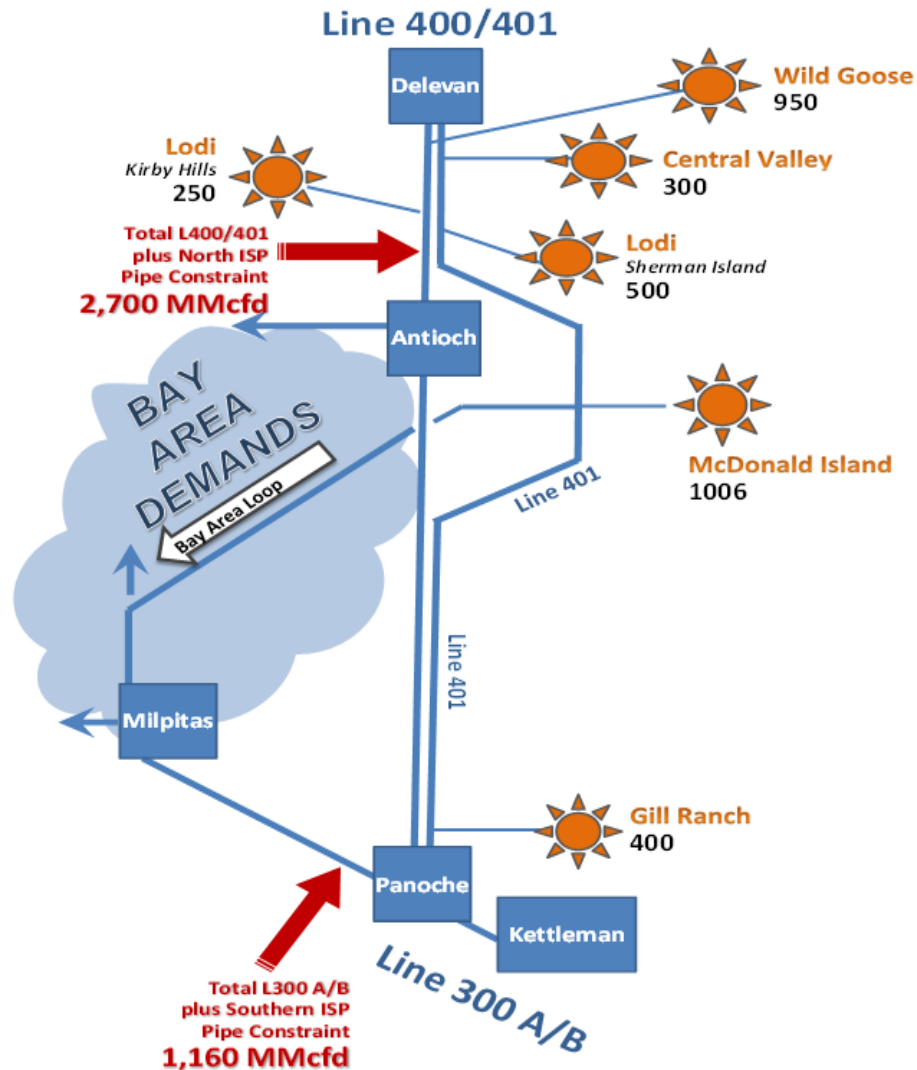
# DOGGR REGULATIONS COMPLIANCE AND CAPACITY IMPACTS

- SB 887 - new regulations in response to the leak at Aliso Canyon
- DOGGR issued regulations in September of 2017. Seven year implementation window, first 10% of wells modified, effective October 2019
  - Well design and construction:
    - ✓ No single point of failure- Modify wells with tubing on packers (double liner)
  - Well and facility maintenance:
    - ✓ Continuous monitoring for leaks and leak repair
    - ✓ Regular mechanical integrity testing (every 2 to 5 years)
  - **Costs to maintain and operate gas storage facilities are increasing and withdrawal capacity is decreasing ~ 40%**

# ADEQUATE RESOURCES ARE NEEDED TO MEET A 1-IN-10 DEMAND (SUPPLY STANDARD ADOPTED)



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McDonald Island provides withdrawal between the Pipe Constraints

Supply Standard	= 4,616
<u>Pipe Constraint</u>	<u>= 3,860</u>
McDonald Is.	= 756

## Legend



Storage Field



Station / Terminal

MMcfd

Withdrawal Capacity

# MODIFIED STORAGE SERVICES

Storage Services	Injection (mmscf/d)	Inventory (bcf)	Withdrawal (mmscf/d)
Core Service	24	5	307
Inventory Management	200	5	300
Reserve Capacity	25	1	250
<b>Total</b>	<b>249</b>	<b>11</b>	<b>857</b>

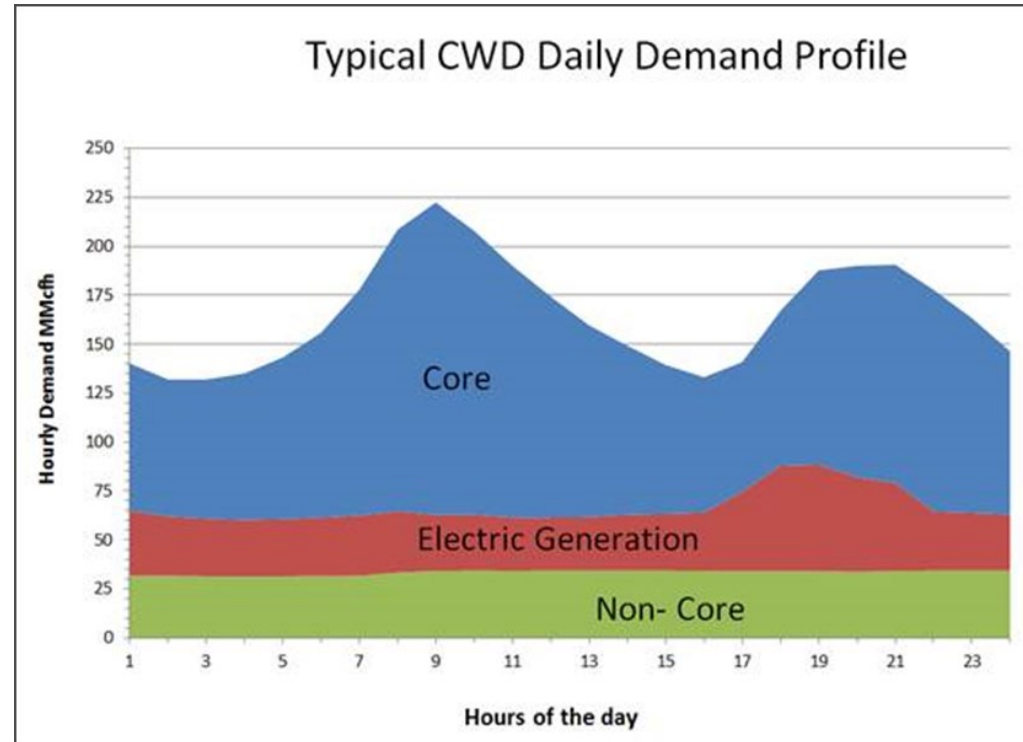
# 250/D RESERVE CAPACITY COVERS MEDIUM TO HIGH PROBABILITY

Outage Scenario	Impact (MMcf/d)	Relative Likelihood
<b>McDonald Island</b> , Well or Processing Outage	20 - 100	High
<b>Kettleman</b> , Compressor Single Unit Outage	0 - 200	High
<b>Delevan</b> , Compressor Single Unit Outage	0 - 200	High
<b>L400/401</b> , Pipeline Outage South of Delevan	0 - 200	Med
<b>L300</b> , Pipeline Outage North of Panoche	0 - 250	Med
<b>Delevan</b> , Compressor Station Outage	350 - 500	Low
<b>McDonald Island</b> , Platform Outage	300 - 600	Low
<b>Kettleman</b> , Compressor Station Outage	400 - 600	Low
<b>McDonald Island</b> , Storage Field Outage	900 - 1,100	Low

# INTRADAY BALANCING = INVENTORY MANAGEMENT

- Currently, Gas Control meets peak-hour needs by using pipeline inventory and unscheduled core withdrawal capacity in PG&E fields.
- With reduced PG&E storage capacity, less unscheduled withdrawal capacity will be available for peak hour needs. Relatively more supply will come from interstate pipelines and ISPs, which deliver at a constant rate.
- A storage withdrawal rate of 12.5 MMcf / hour (300 MMcf / day) will provide a reasonable, but minimal, capability to manage pipeline inventory and meet the morning peak.

300 MMcf/day (12.5 MMcf/hour)  
Required for Peak-Hour Demands



# BALANCING SERVICE - MODIFIED

**Effective April 1, 2020, there will change the way we determine if an OFO is needed**

- Today PG&E uses the 75 MMcf/d of injection and withdrawal in our next-day forecast daily plans
- With NGSS implementation, PG&E will only plan to use the balancing resources during the current day
- No changes to current balancing rules for daily and monthly imbalances



# CGT TO SELL OR DECOMMISSION TWO GAS STORAGE FIELDS

- Pleasant Creek (2 bcf) and Los Medanos (11 Bcf)
- By January 31, 2020 file with CPUC a plan to market the assets for sale
- Sale of Pleasant Creek will proceed shortly after the filing with the CPUC
- Sale of Los Medanos will not proceed until after PG&E files with the CPUC in 2022 that McDonald Island does have adequate capacity

# IMPLEMENTATION TIMELINE

MILESTONES	EVENT TIMELINE
CPUC APPROVED FINAL DECISION	9/12/2019
2019 GT&S RATE CASE FINAL DECISION - EFFECTIVE DATE for Final Rates	10/1/2019
CONVERT LM AND PC INTO PRODUCTION FIELD	11/1/2019
MODIFIED STORAGE SERVICES EFFECTIVE DATE	4/1/2020
EXPLORE LM AND PC DECOMMISSIONING	1/1/2022
DOGGR COMPLIANCE COMPLETE	10/1/2025

# BACKBONE RATES

Path	Final Decision (D.19-09-025), final rates effective 10/1/2019 (\$/Dth @ Full Contract)				
	2018	2019	2020	2021	2022
Noncore Redwood Annual	\$0.4508	\$0.4905	\$0.6611	\$0.7294	\$0.7518
Noncore Baja Annual	\$0.4908	\$0.5905	\$0.7961	\$0.8994	\$0.9318
Noncore Redwood Seasonal	\$0.5409	\$0.5886	\$0.7933	\$0.8753	\$0.9022
Noncore Baja Seasonal	\$0.5889	\$0.7086	\$0.9553	\$1.0793	\$1.1182
Core Redwood Annual	\$0.3898	\$0.4538	\$0.6092	\$0.6875	\$0.7180
Core Baja Annual	\$0.4298	\$0.5538	\$0.7442	-	-
Core Redwood-Seasonal (new - 4/1/2020))	--	--	\$0.7311	\$0.8250	\$0.8616
Core Baja - Seasonal (Expires - 3/31/2020)	\$0.5157	\$0.6645	\$0.8931	\$1.0290	\$1.0776
Silverado/Mission Annual	\$0.2829	\$0.3376	\$0.5023	\$0.5731	\$0.5919

**Note: Redwood/Baja (Redwood vs Baja) path differentials will be \$0.10/Dth in 2019, \$0.135/Dth in 2020, \$0.17/Dth in 2021 and \$0.18/dth in 2022**

**HOW TO STAY INFORMED?  
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