

# Alaska Gasline Inducement Act Legislative License Hearings

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## Analysis of Project Costs/Schedule and Tariffs

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# Cost and Schedule Analysis

- General analysis methodology
- Base case specific analysis methodology
- Base case cost/schedule results
- Expansion cases specific analysis methodology
- Expansion cases cost/schedule results

# Why Cost/Schedule Ranges?

- Single point estimates for large complex projects may not be the most useful to evaluate future project outcomes
- Understanding and applying the ranges in which the costs and schedule durations are likely to fall will result in a more representative analysis of the economic expectations for a project

# General Analysis Approach

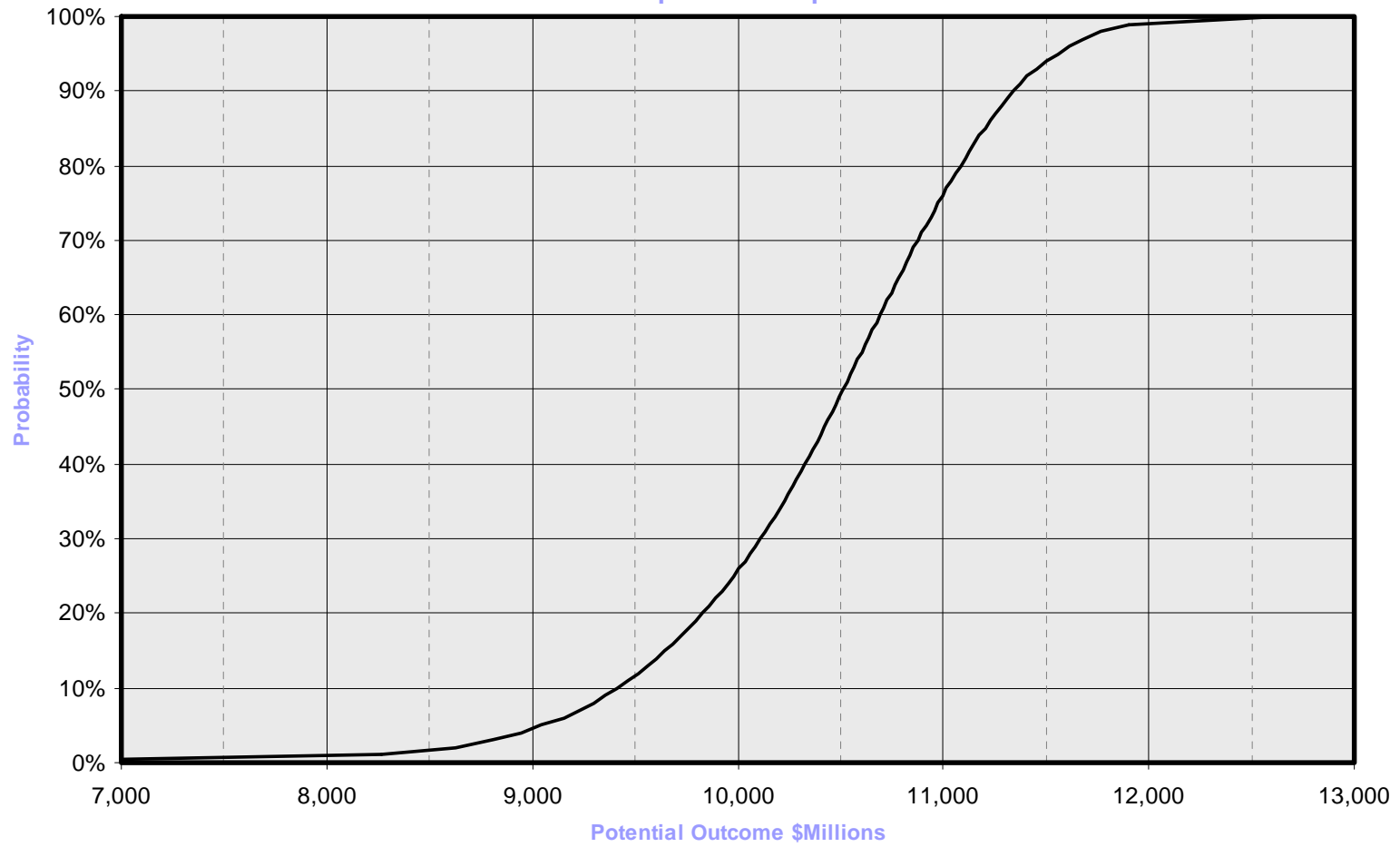
- Analyze cost and schedule on a sub-project level
- Based on 2007 dollars (removes uncertain cost escalation risk from the base analysis and)
- Cost escalation is applied later in the NPV analysis as a sensitivity

# Project Risk Indicative Modeling (PRIMS)<sup>TM</sup> Methodology

- Understand risks associated with project
- Apply expert judgment to establish:
  - Best and Worst case ranges
  - Distributions that reflects risks
- Perform Monte Carlo simulation, which is a well proven and long accepted method
- Provide cost and time-risk probability distributions for NPV analysis

DRAFT: Work-in-Progress

### AGIA Example Cost-Risk Profile Pipeline Example



## 4.5 bcf/d Base Case - Technical Team Input

### Cost

- Development
- GTP
- Alaska Pipeline
- Canadian Pipeline
- Integrated Project
- Miscellaneous

### Schedule

- Subprojects
- Integrated Project

### Spend Curves (cash flow)

# Costs/Schedule Analysis

## Costs

- Started with review of TransCanada cost breakdown by subproject
- Prepared independent cost estimates using same subproject breakdown
- Established best/worse case ranges
- Established other Miscellaneous Costs



# Costs/Schedule Analysis

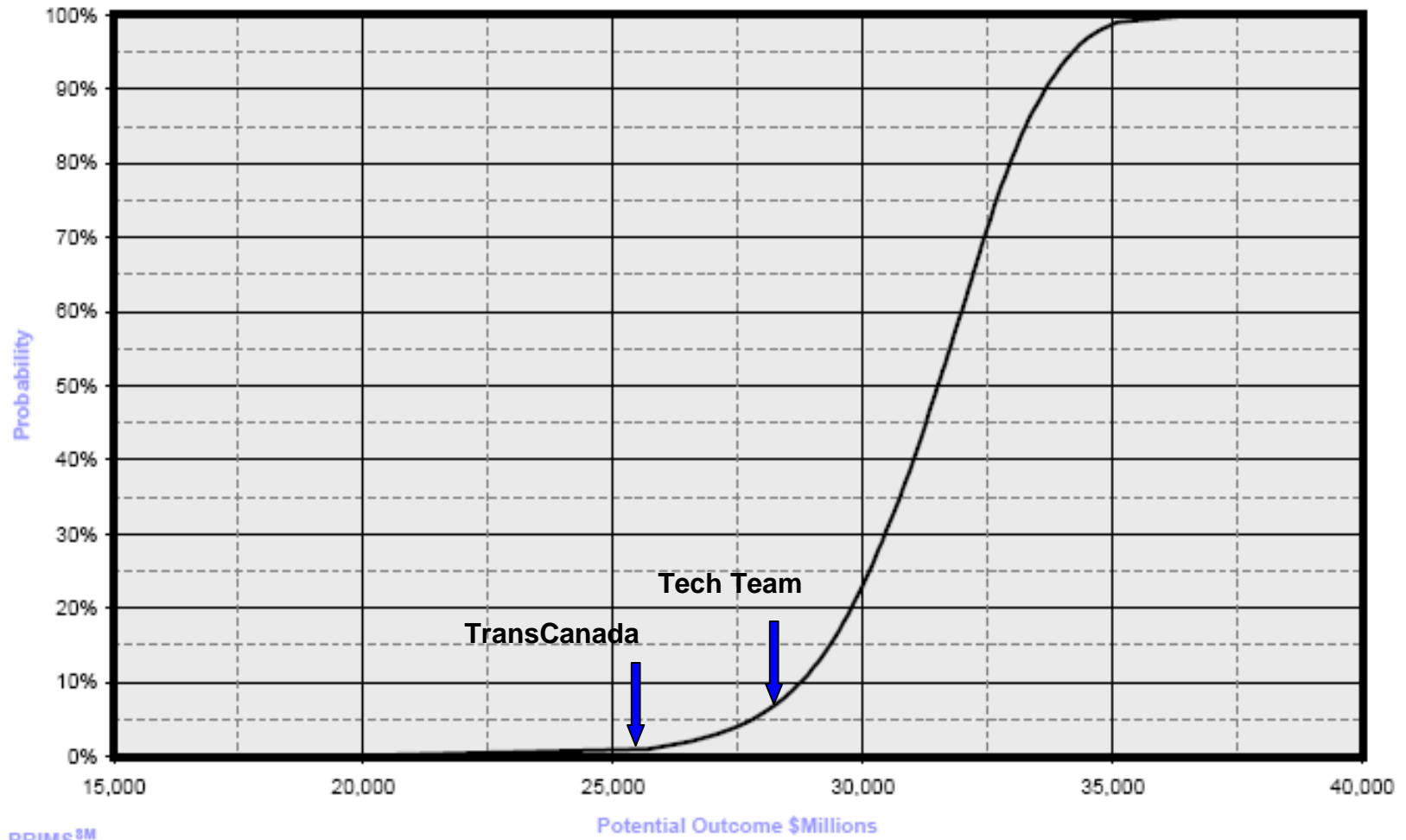
## Schedule

- Started with review of TransCanada schedule by subproject
- Prepared independent schedule and activity logic
- Established final schedule for ranging
- Established best/worse case schedule activity durations

# AGIA TransCanada Application - Base Case

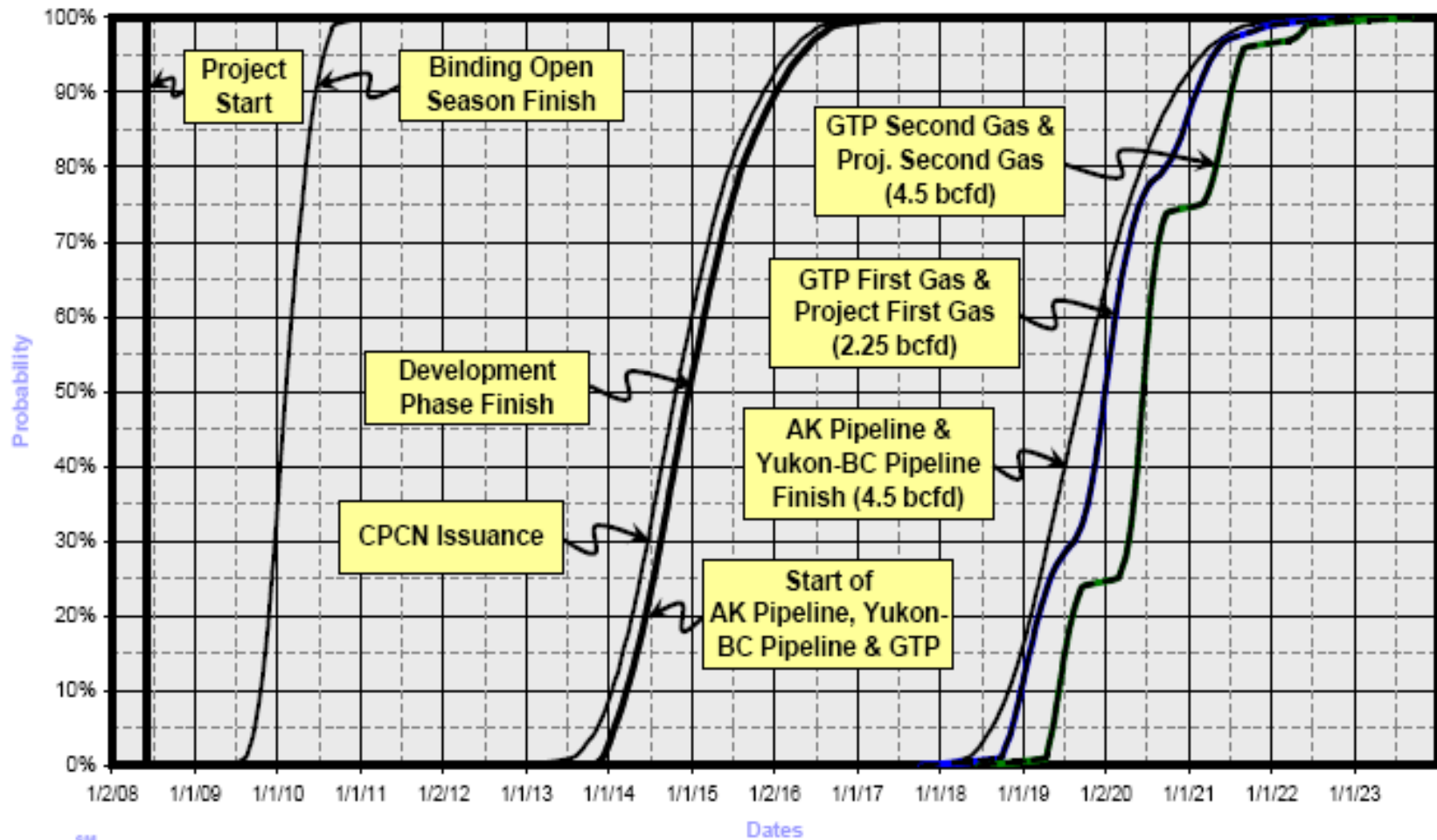
Cost-Risk Profile for Base Case: 4.50 bcfd

Integrated Project



# AGIA TransCanada Application - Base Case

Time-Risk Model Profile for **Base Case: 4.50 bcf/d (Base Case)**  
Integrated Project



PRIMS<sup>SM</sup>

# Miscellaneous Costs

- Line Pack
- Fuel
- Operations and Maintenance (O&M)
- Cost escalation
- Spend Curves (cash flow)

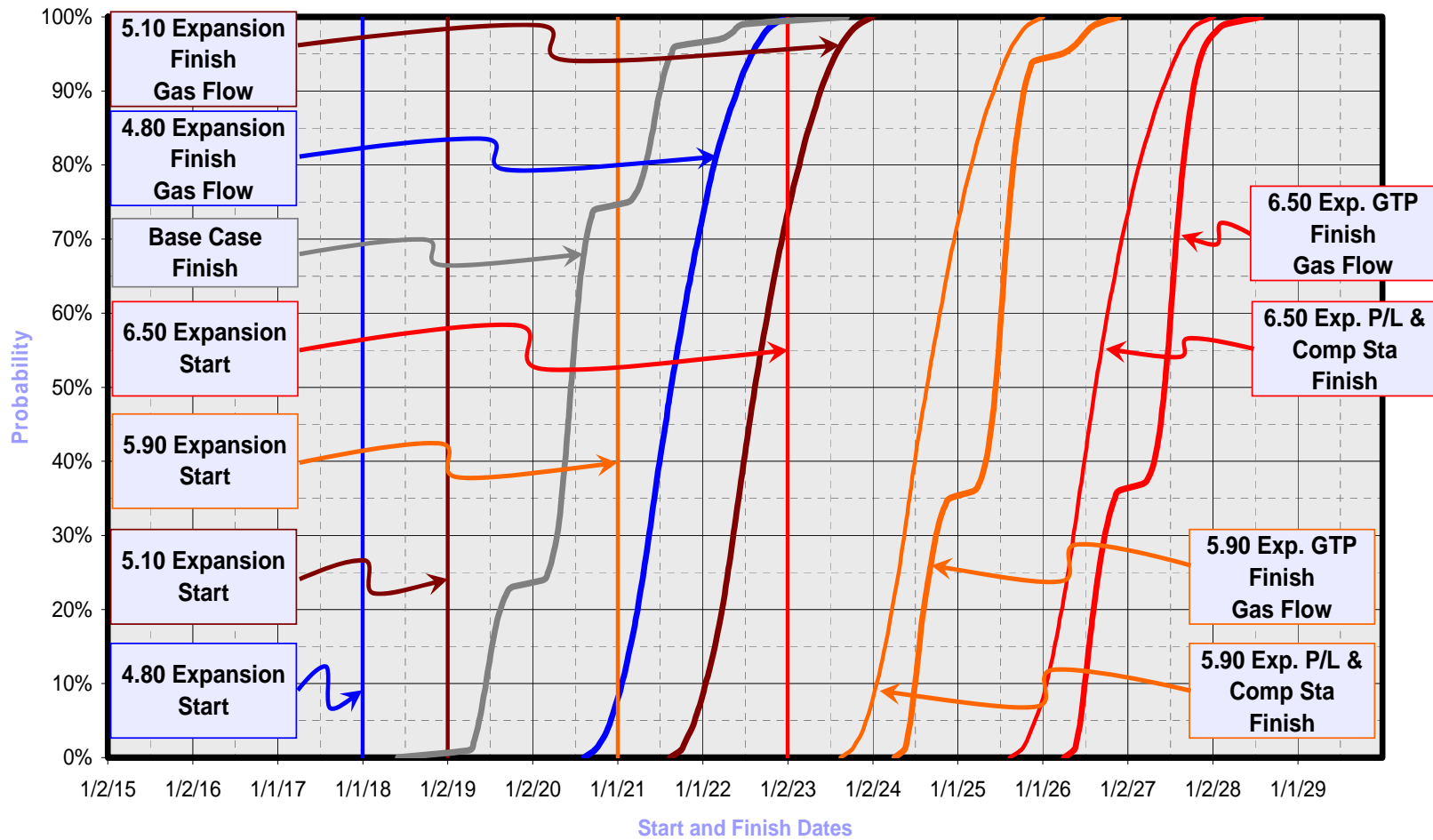
# Expansion Cases

- TC Alaska has committed to a project design that will accommodate volumes between 3.5 and 6.5 bcf/d by using only incremental compression for expansion  
“Simple-Low Cost-Fast”
- Base Case 4.5 bcf/d
- Expansion Cases
  - 4.7 bcf/d
  - 4.8 bcf/d
  - 5.1 bcf/d
  - 5.9 bcf/d
  - 6.5 bcf/d

# AGIA TransCanada Application - Expansion Cases

Time-Risk Model Profile for Expansion

All Expansion Projects



# Expansion

## The Bottom Line

- Simple
- Low Cost
- Fast