Municipal Advisory Gas Project Review Board

March 13th, 2015

Agenda item:

Payment in Lieu of Tax (PILT)

Commissioner Randall Hoffbeck

Basic equation:

$$\text{Actual Cost} \times \frac{\text{Actual Gas Flow}}{\text{Design Throughput}} \times \frac{\text{Year (n) Index}}{\text{Year (0) Index}} \times 20 \text{ mils}$$

Each component of the project would have its own PILT driven by different base parameters. This could also include different secondary parameters such as gas flow exponent, inflation adjuster, and Mill rate

Potential Building Blocks for a clear, unambiguous and durable approach to a PILT for AK LNG

Discussion Topics from 20th February

Measure	Discussion	Possible Modification	Comments
Actual Cost	Relatively well understood	None proposed	No analysis
Actual Flow Rate	Impact of flow interruptions	Use of rolling average or limits	Analysis carried out
Design Flow Rate	Fixed or amended as project evolves	Rebasing of project if major change	Data from historic projects
Flow rate exponent	Effect on PILT to recognise capital efficiencies	Use of different exponents	Analysis carried out
Inflation	Use of CPI, PPI or other measures	Fixed or variable measure	Sensitivity examined
Depreciation	Included or Excluded. Incorporated in inflation or separate formula	Use of additional formula component	Fixed and rolling depreciation examined
Term	Length of time that PILT mechanism should apply	Limited to eg contract duration, or longer	Potential triggers include gas supply or contracts

DISCUSSION I – FEEDBACK FROM AKLNG PRODUCERS

Initial Feedback from AK LNG Producers: Approach

- Simpler is better; fewer factors is preferred
- Prefer a formula that is general in nature and that would be enacted as a law of general application. The formula should be general enough to allow the parties to develop a result that would support the AKLNG Project and be acceptable to the municipalities.
- Prefer a property tax payment in the form of a unit rate per throughput basis (e.g., ¢/mcf or ¢/mmbtu) that is developed and incorporated into the ultimate durability measures.

Initial Feedback from AK LNG Producers: Specifics

1. **Mill Rate**
   - The proposed LNG plant and terminal (possibly the GTP also) are excluded from the definition of "taxable property" subject to the 20 mill rate under AS 43.56Mill rates under 29.45 are sometimes lower and prevailing rates in the relevant jurisdictions should inform final Mill rate in the formulaton
2. **Capital Cost**
   - The Project cost determined at FEED or FID (Final Investment Decision) could be adopted for additional simplicity and to remove uncertainty for an FID decision
3. **Depreciation/Obsolescence**
   - Depreciation/obsolescence are acknowledged features of the current methodology, and a factor should be included in the formula to address them
4. **Flow Adjustment**
   - The HOA between the parties contemplates payments in lieu of property taxes (PILT) for each property based on a simple unit rate per throughput basis
   - Use of an exponent may detract from ability to use a single, durable formula for debottlenecking and expansion
   - Flow variations could be dealt with through monthly averaging
5. **Inflation**
   - Inflation represents a risk which is not included in the current formula. A fixed escalation could be a better approach.
6. **Adjustment Factor**
   - This factor could be viewed as arbitrary. A better approach would be to focus on a formula that is sufficiently applicable to avoid use of an adjustment factor.

Initial Feedback from AK LNG Producers as Interpreted by the Administration

Initial Concept

$$\left(\text{Actual Cost} \times \left(\frac{\text{Actual Gas Flow}}{\text{Design Throughput}} \right)^{n} \times \frac{\text{Year (n) Index - y}}{\text{Year (0) Index}} \times 20 \text{ mills} \right) \mathbf{X} \text{ Adjustment Factor}$$

Refined Concept

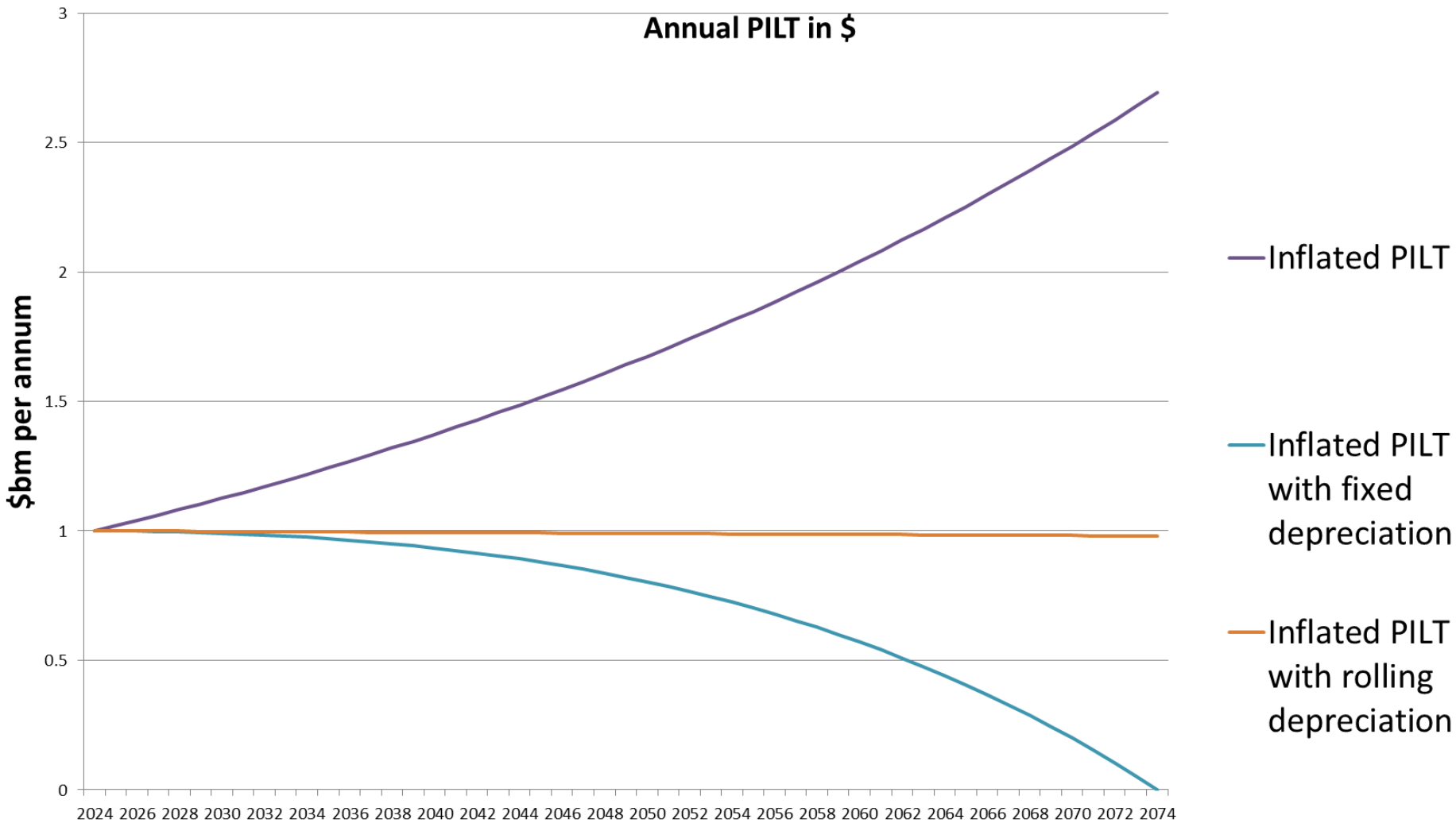
$$\left(\text{Capital Cost} \times \textbf{Depreciation Factor} \times \left(\frac{\textbf{Actual Gas Flow}}{\textbf{Design Throughput}} \right) \times \textbf{(1 + e)}^{\textbf{m}} \times \text{Mill Rate} \right)$$

n = exponent to dampen effect of actual flow
e = annual escalation rate
m= years of operation (startup = 0)
Mill Rate based on current statutes

DISCUSSION II – ESCALATION AND DEPRECIATION

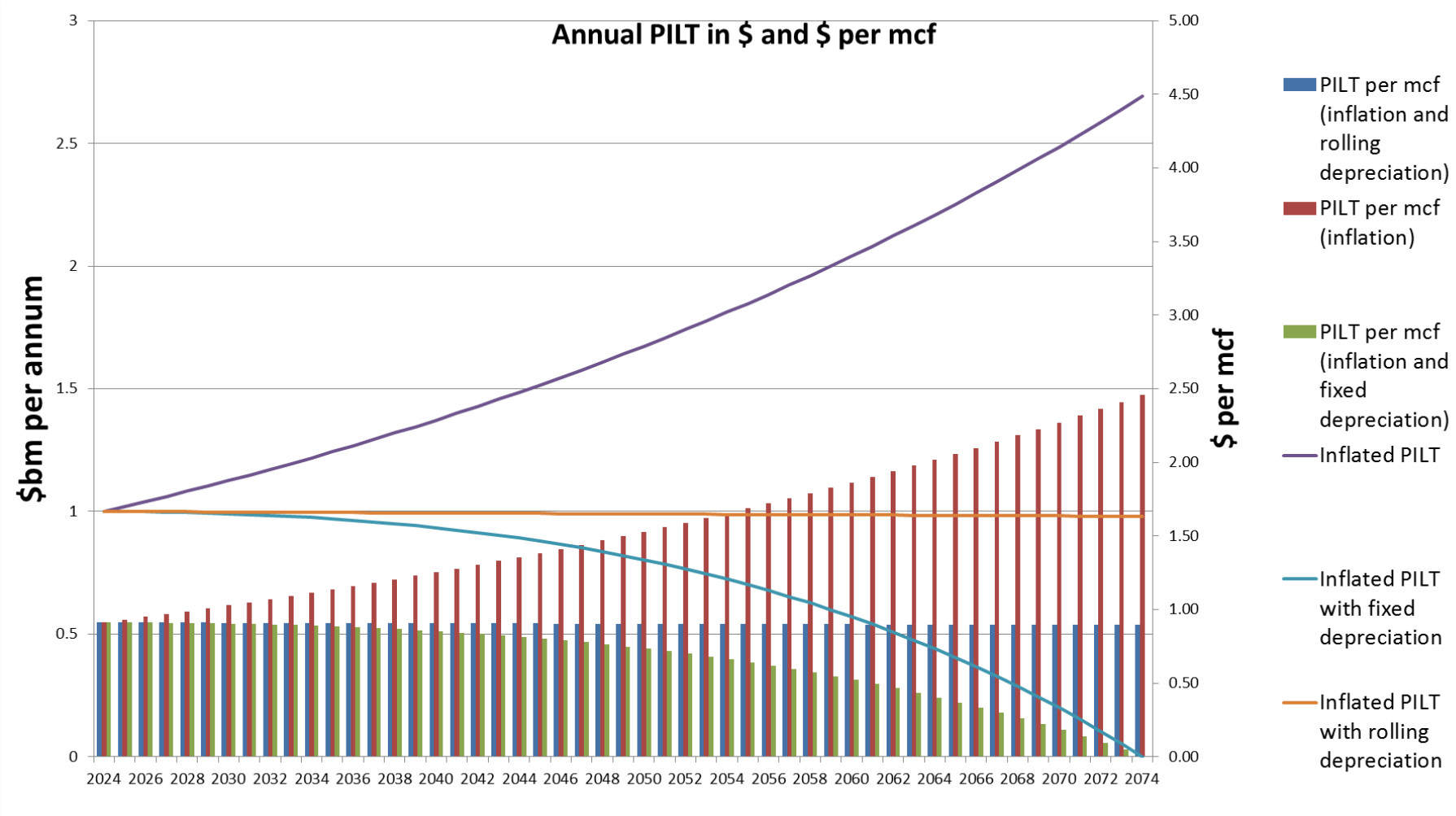
Inflation and Depreciation (Example 1)

2% inflation rate, a 50 year rolling depreciation horizon, or a fixed 50 year life (2% depreciation per annum) – rolling depreciation counteracts inflation



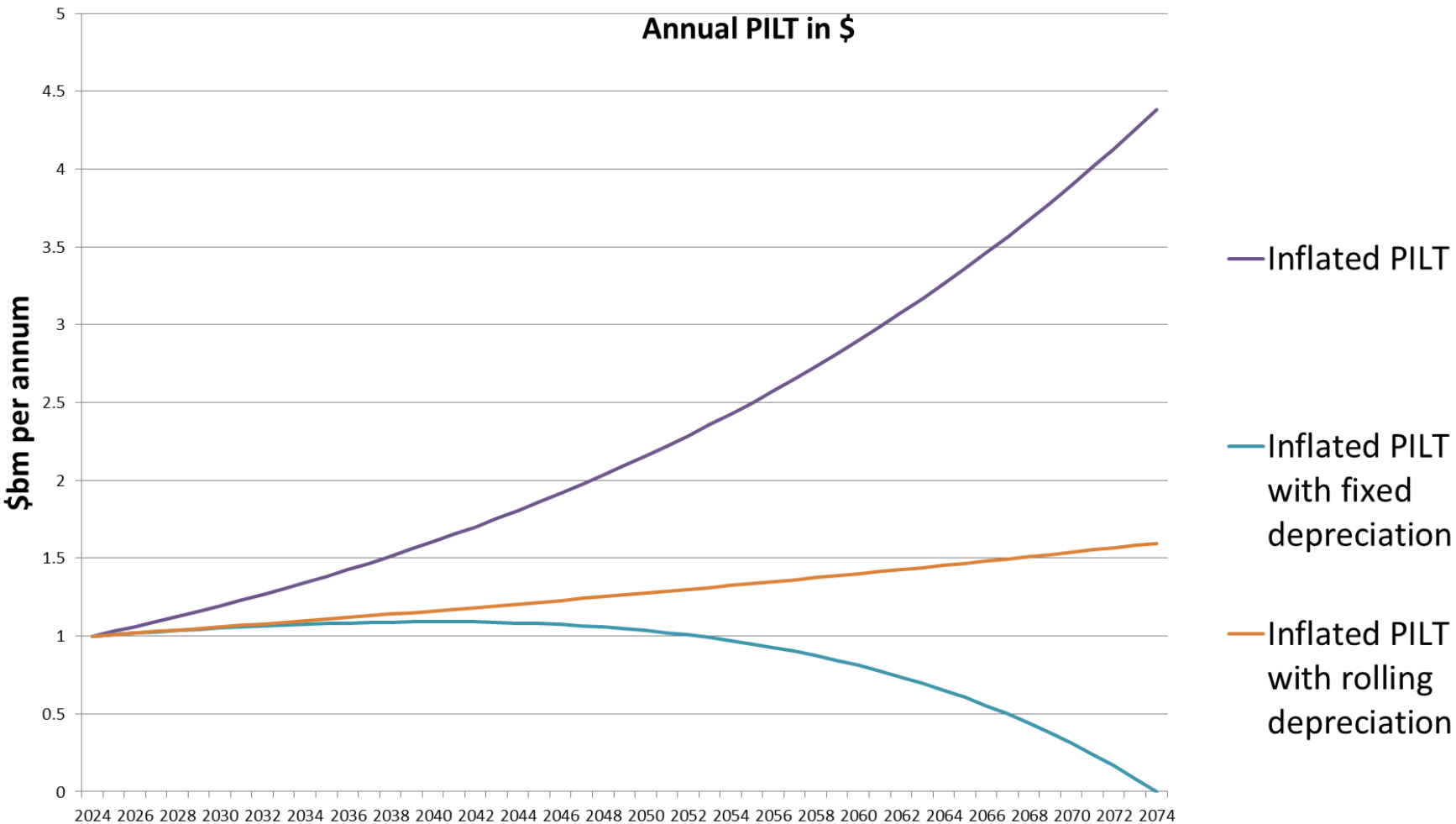
Inflation and Depreciation (Example 1 including PILT in $/mcf)

2% inflation rate, a 50 year rolling depreciation horizon, or a fixed 50 year life (2% depreciation per annum) – rolling depreciation counteracts inflation



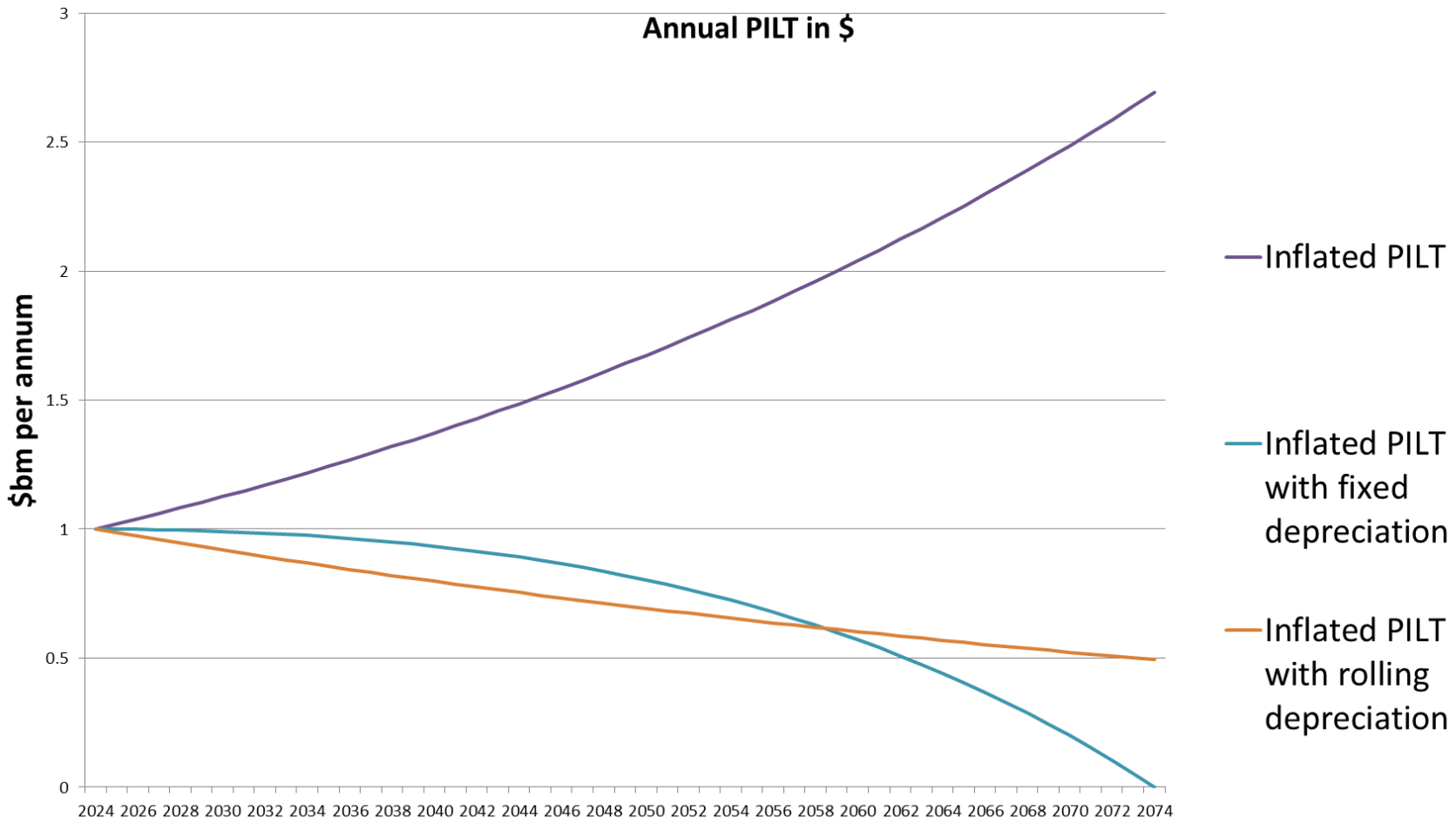
Inflation and Depreciation (Example 2)

3% inflation rate, a 50 year rolling depreciation horizon, or a fixed 50 year life (2% depreciation per annum) – rolling depreciation results in increasing PILT



Inflation and Depreciation (Example 3)

2% inflation rate, a 30 year rolling depreciation horizon, or a fixed 50 year life (2% depreciation per annum) – rolling depreciation results in 50% reduction in PILT over 50 years



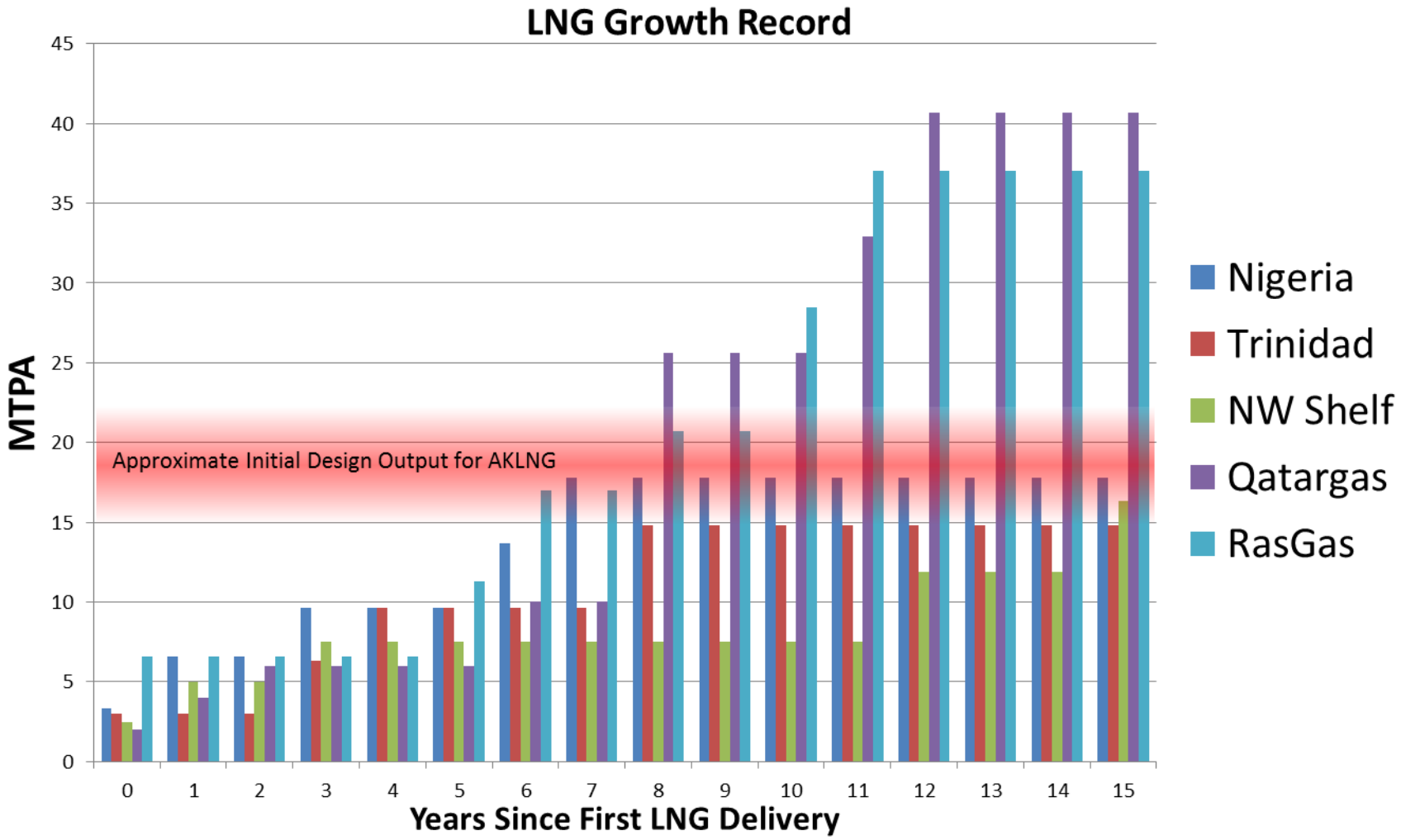
DISCUSSION III – FLOW RATE EFFECTS

LNG Growth Considerations

- LNG Plant Growth is usually achieved through one of the following mechanisms:
  - Debottlenecking. A process that enhances existing plant and equipment to improve performance, efficiency and availability
  - Additional LNG Trains as and when sufficient proven gas reserves are available.

LNG Growth Considerations

Historically, LNG projects have typically grown in size over a 10-15 year timeframe

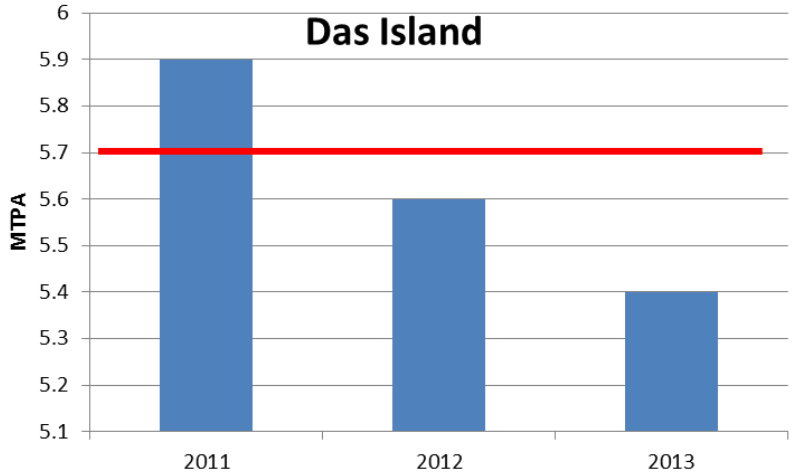


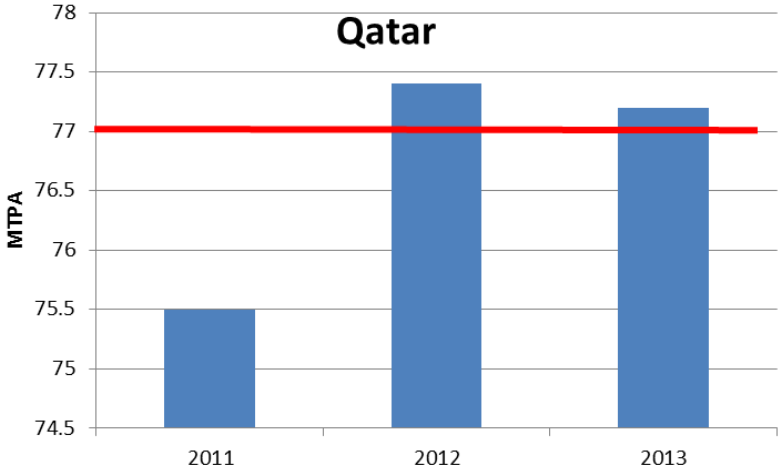
LNG Growth Considerations

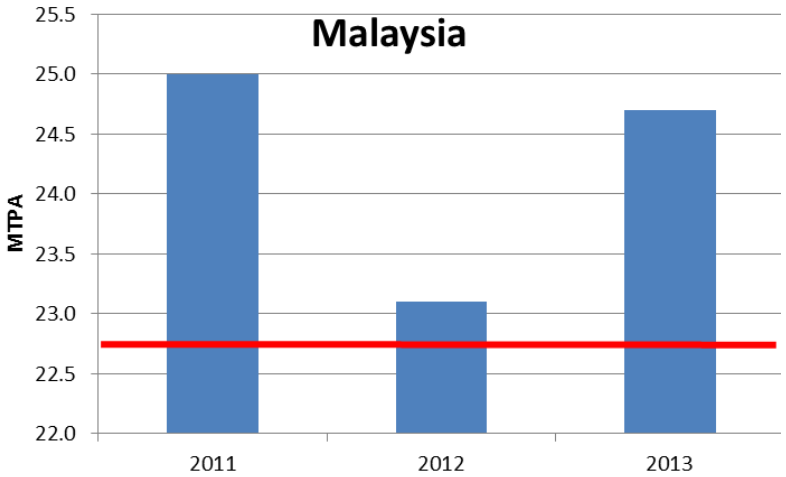
- AK LNG may not follow historic growth patterns for the following reasons:
  - Train size is bigger than for historic projects
  - Initial design capacity is bigger than most historic projects
  - Gas resource picture is not yet fully understood

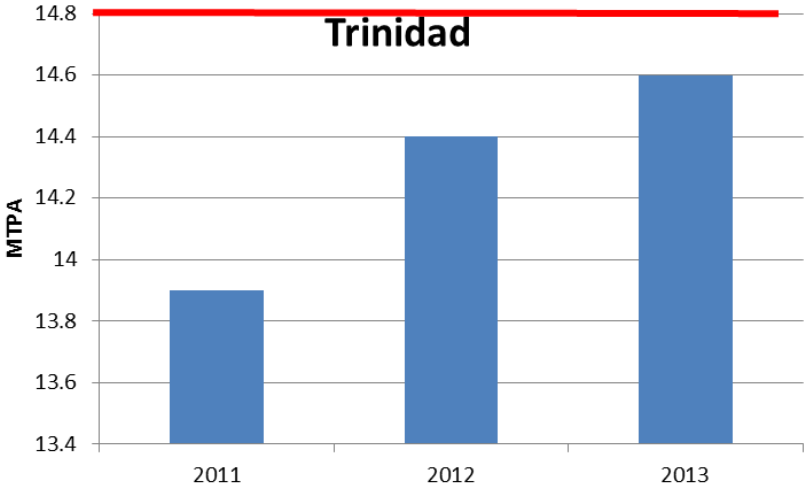
LNG Growth Considerations

Actual production versus nameplate can vary as a result of both technical and commercial factors:









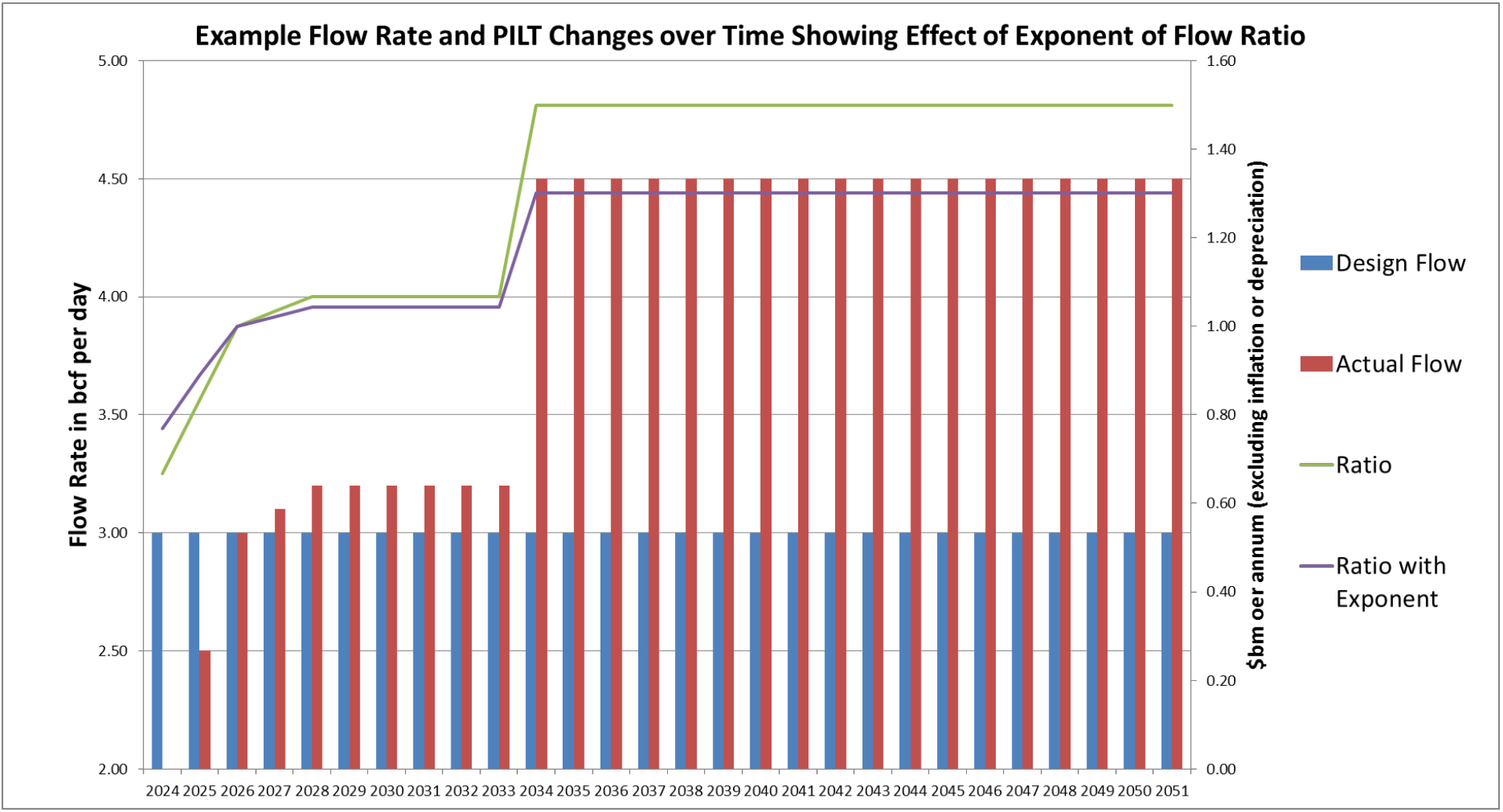
Note: Y- axis does not start at zero so comparison to nameplate (—) is easier to make

Effect of an Exponent on Actual/Design Flow Ratio

- Example adopted:
  - First gas in 2024, fully commissioned in 2026 with a design flow of 3bcfd (a combination of State gas and LNG exports)
  - Debottlenecking between 2026 and 2028, giving rise to a 7% increase in gas deliveries
  - Addition of an additional train(s) in 2034, with gas flow rising to 4.5 bcfd

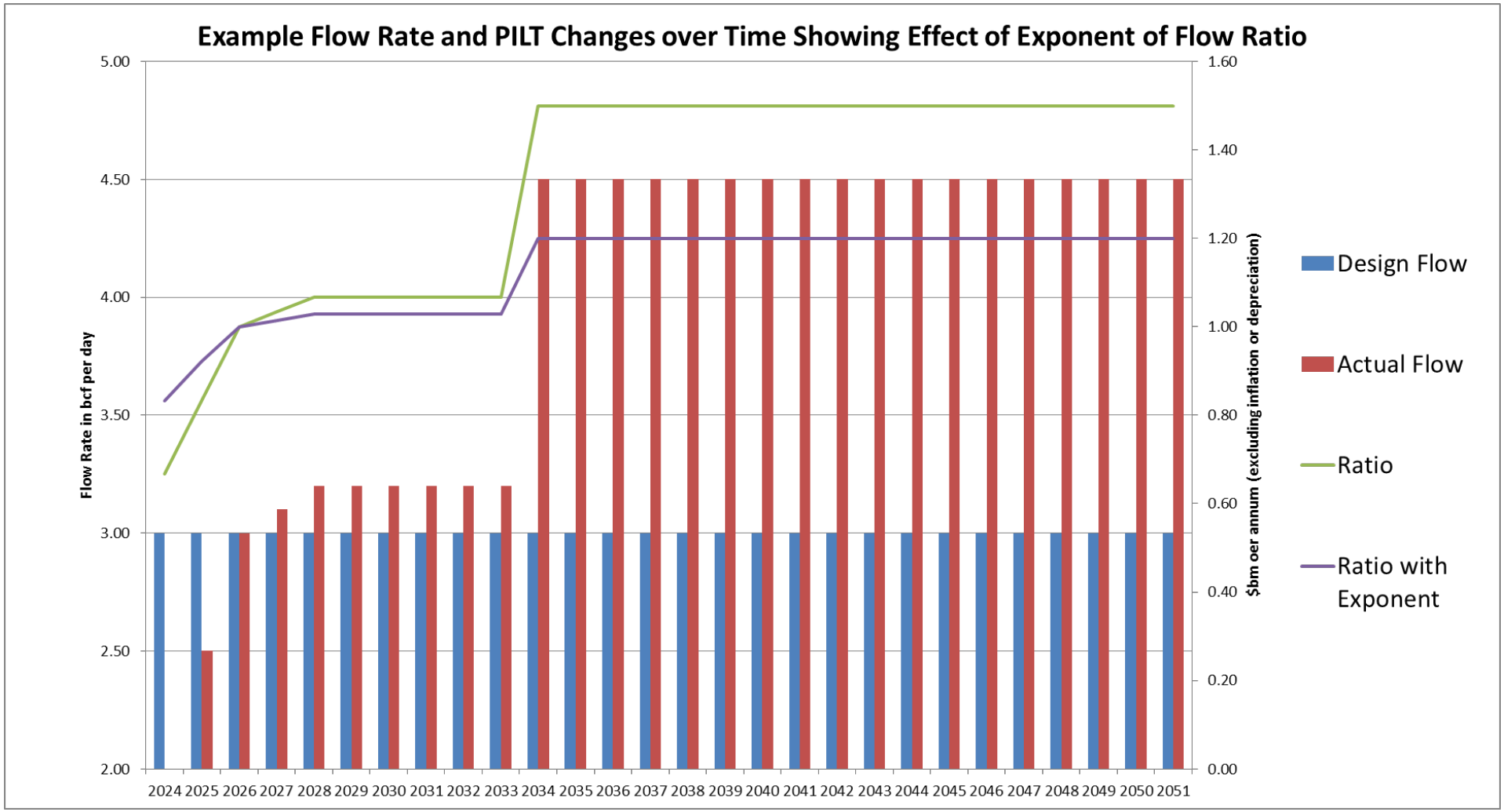
Effect of an Exponent on Actual/Design Flow Ratio

Effect of an 0.65 exponent:



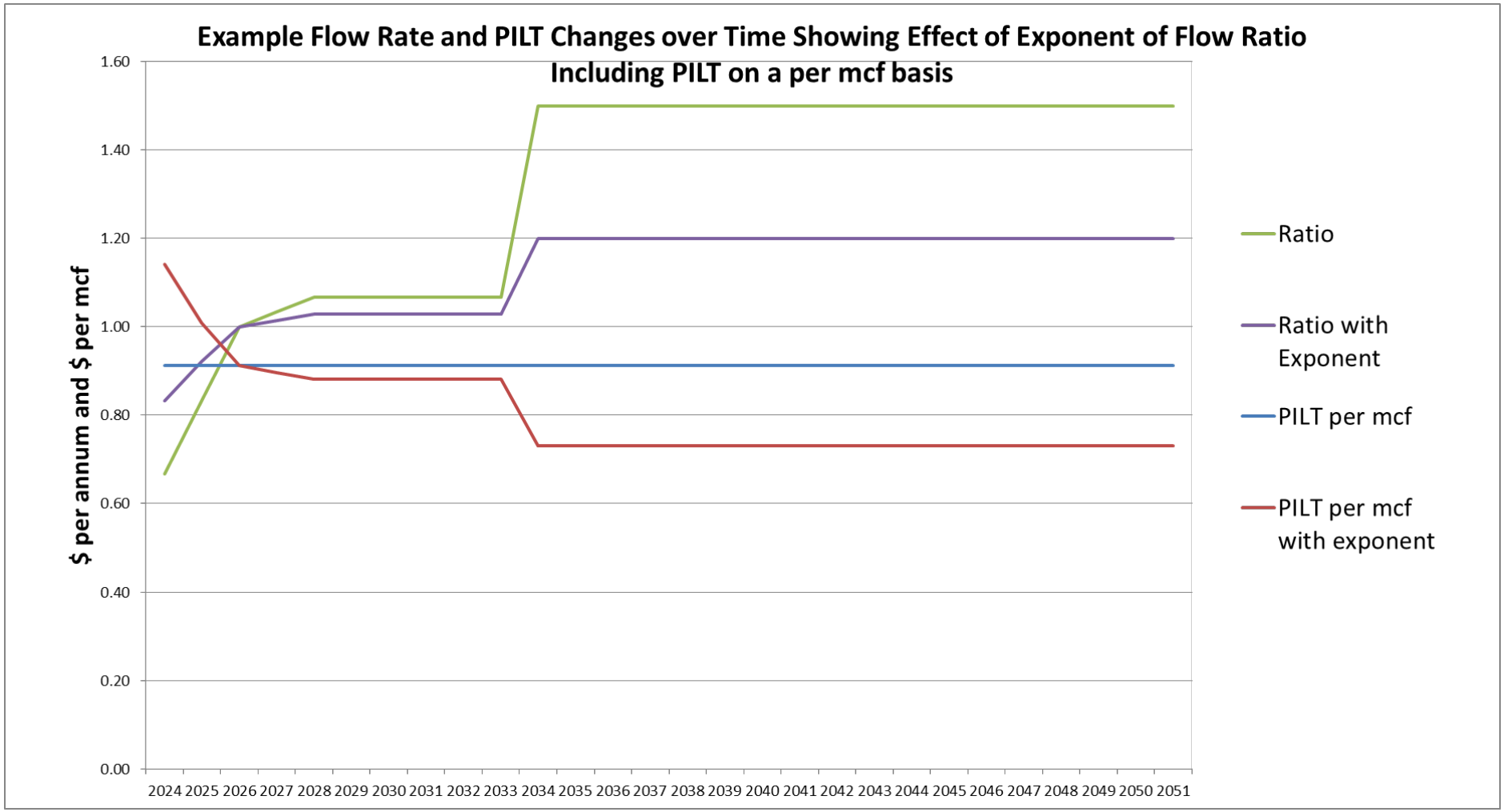
Effect of an Exponent on Actual/Design Flow Ratio

Effect of an 0.45 Exponent:



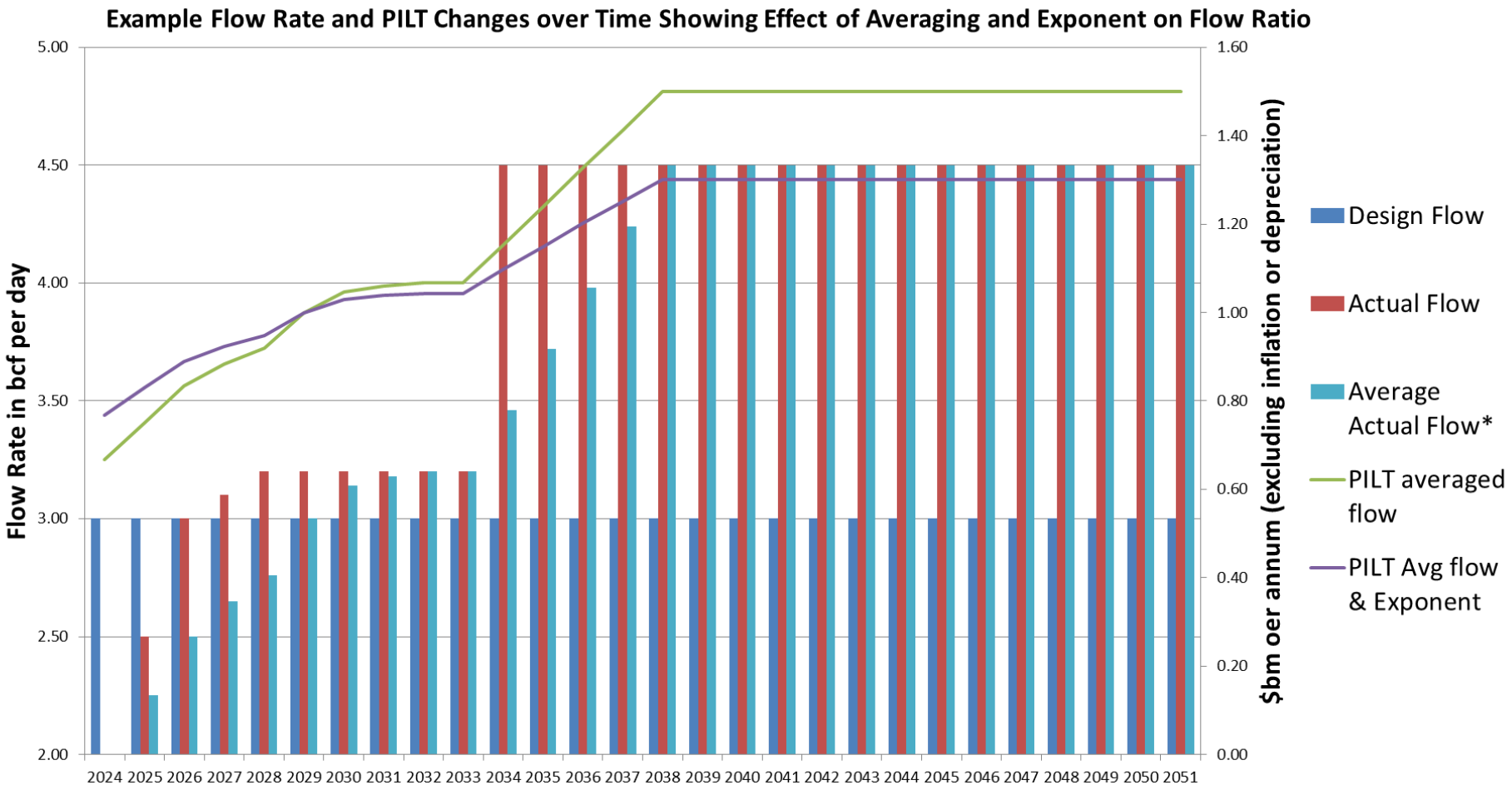
Effect of an Exponent on Actual/Design Flow Ratio (including on a per mcf basis)

Effect of an 0.45 Exponent:



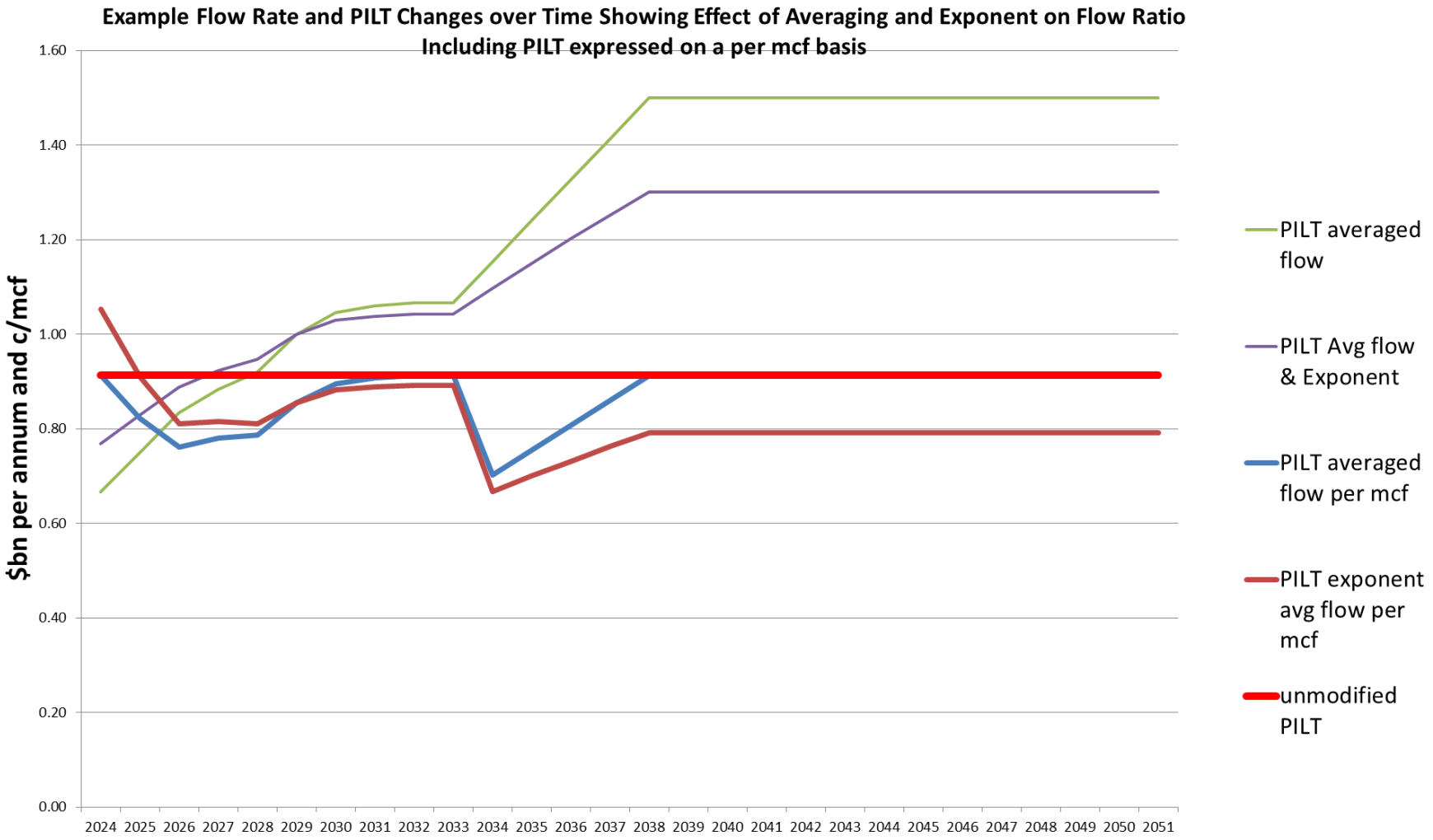
Effect of an Exponent Combined with a Five Year Rolling Avg.

Effect of an 0.45 exponent with five year rolling averaging:



Effect of an Exponent Combined with a Five Year Rolling Avg. (PILT shown on a per mcf basis)

Effect of an 0.45 exponent with five year rolling averaging:



Alternate LNG Growth Considerations

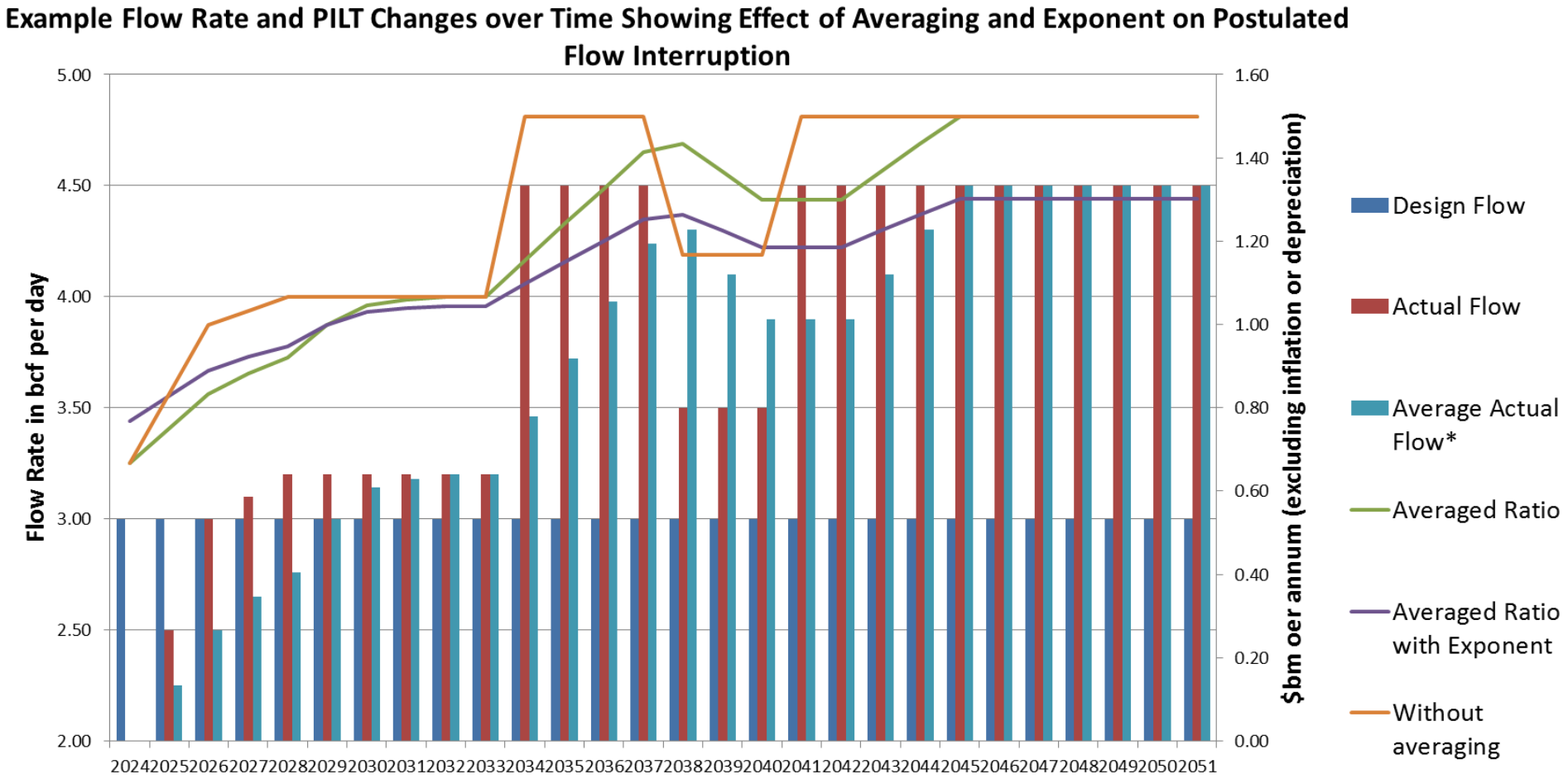
- Simple approach to flow considerations:
  - Create a relationship between actual flow and PILT formula such that all likely design changes are accommodated
- Alternatives:
  - Set a flow limit where PILT is reset (eg. More than 120% of initial design capacity)
  - Approach minor flow improvements (debottlenecking) within the formula, but reset parameters for major expansion (new train)

Effect of a Five Year Rolling Average on a Flow Interruption

- Example adopted:
  - Gas flows stabilise at 4.5 bcfd after expansion
  - Flow curtailment of 1bcfd during 2038-2040 (3 years)
  - Flow recovers to 4.5 bcfd in 2041
- NB. Flow interruptions are unusual for LNG plants over an extended period of time but certain scenarios are credible, such as:
  - Major upstream supply disruption
  - Major accident or failure of critical plant items
  - Market disruption

Effect of an Exponent Combined with a Five Year Rolling Avg.

Effect of an 0.45 exponent with five year rolling averaging:



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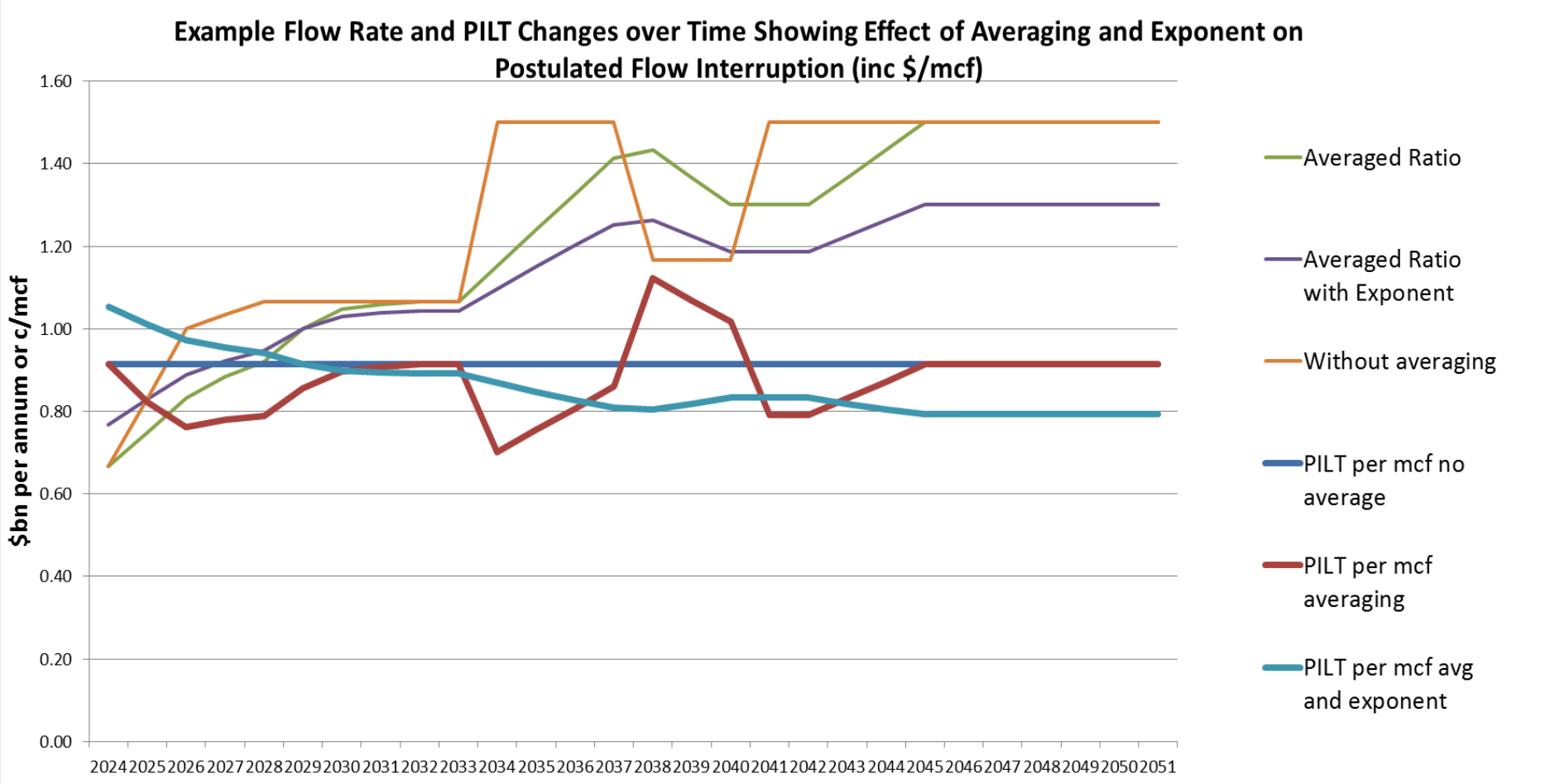


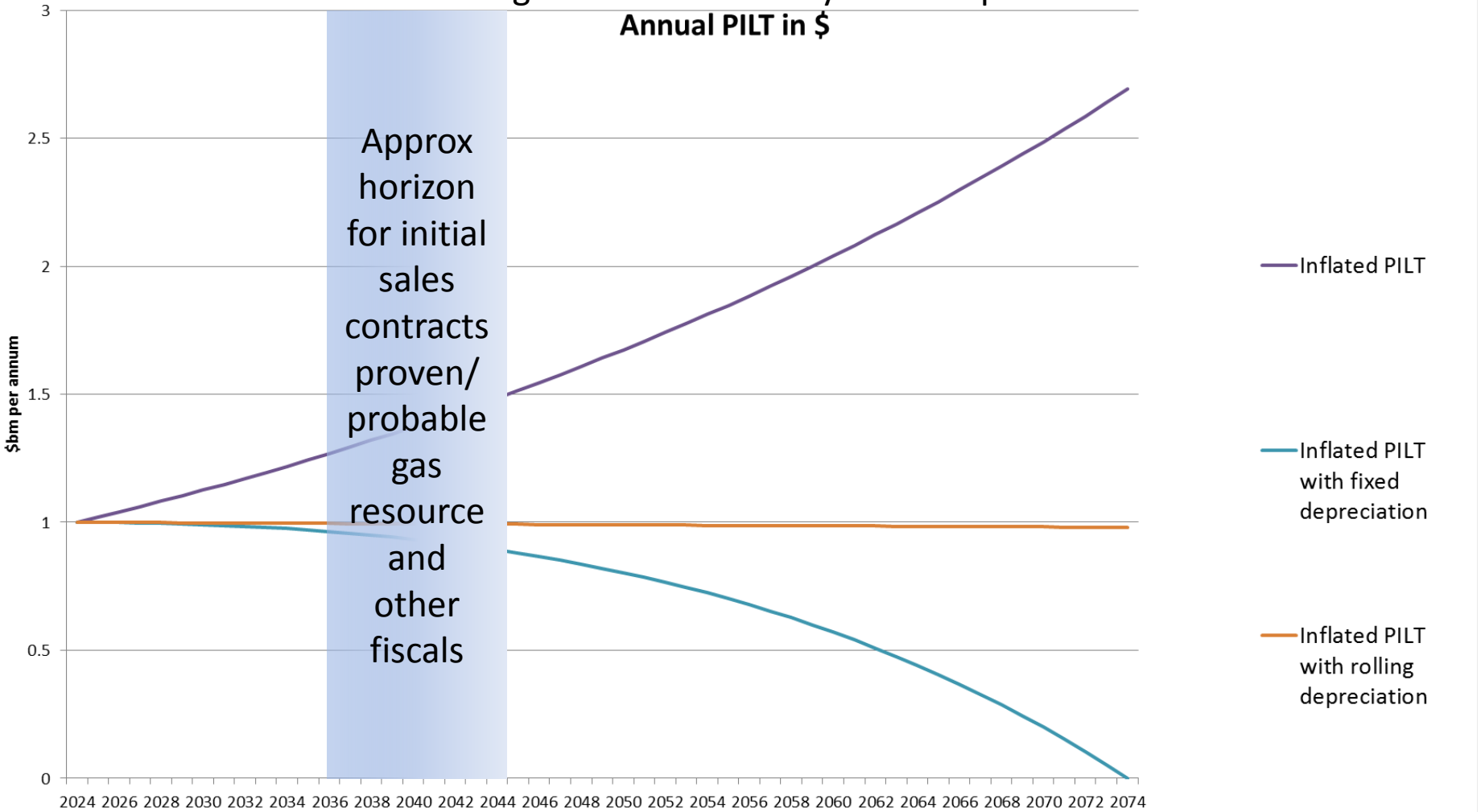
Alternate LNG Flow Stabilisation Considerations

- Simple approach to flow considerations:
  - Averaging of LNG flows over a set period
- Alternatives:
  - Minimum payment
  - Stabilisation fund established

DISCUSSION IV – DURATION

Duration of PILT Mechanism

Firm "Take or Pay" LNG Contract are likely to be of a 10-20 year duration.
Gas resource is anticipated to be of a similar time horizon, pending further delineation etc
Some other fiscal terms relating to AKLNG are likely to be required with a fixed time duration



DISCUSSION V – CONCLUSIONS AND RECOMMENDATIONS