



G L O B A L F O R U M

**On Flaring and Venting Reduction  
and Natural Gas Utilisation**

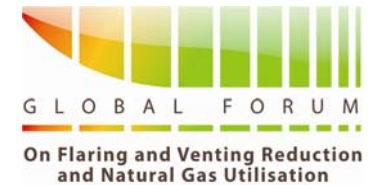
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Qualitas International Inc.

Turnkey Facilities Contractor

Flare Gas Utilization Projects - Central Asia and Africa

# Turnkey Flare Gas Projects

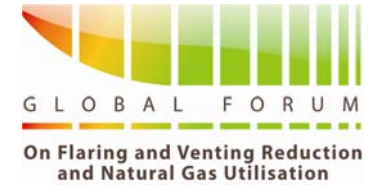


- Many Flare Gas Recovery Projects are Economical
  - Environmental Effects Are a Colorful Benefit
- Problems
  - Capital
  - Discount Rate Used
  - Risks on the Assumptions
- 2 Types of Projects
  - Internal – Reservoir Reinjection
  - External – Gas to Market

# Internal – Gas Reinjection

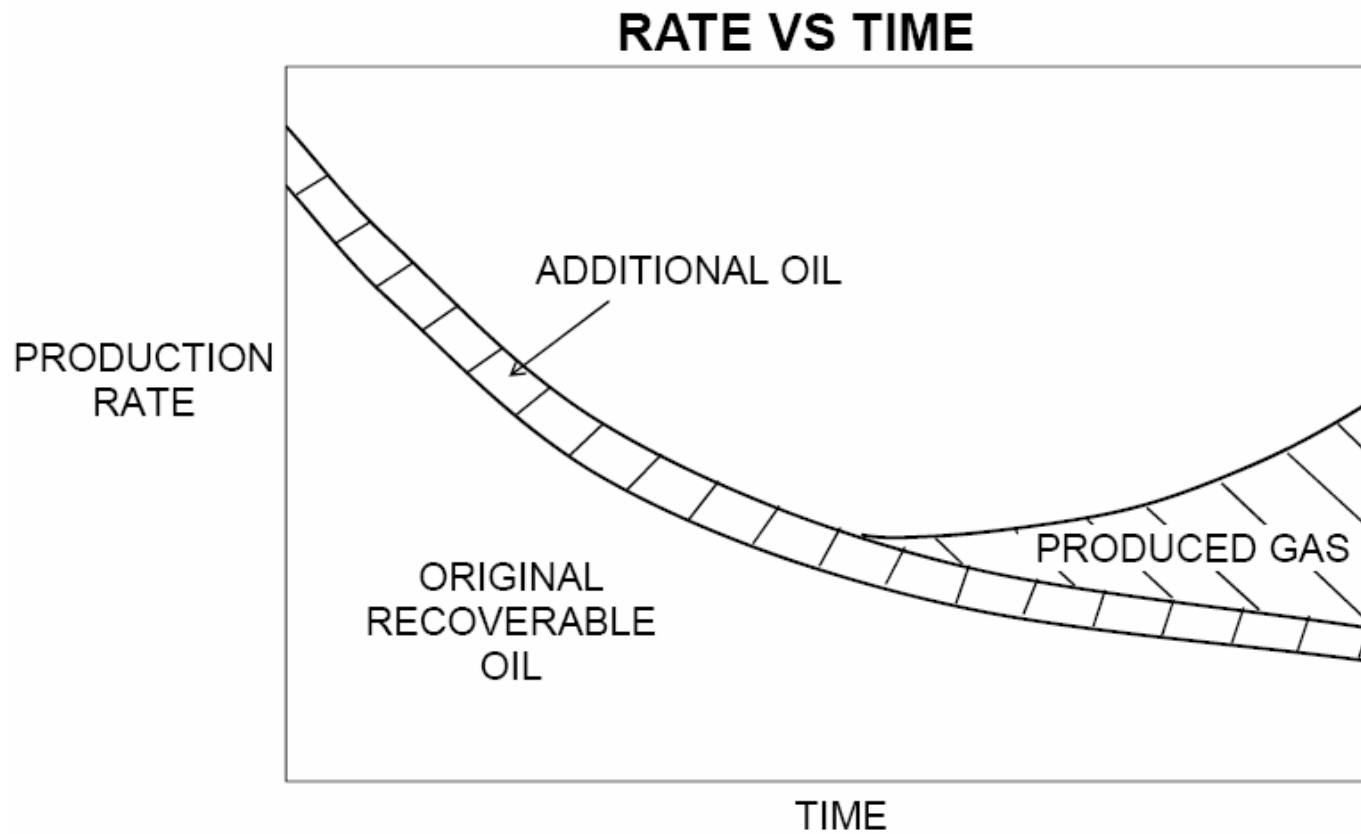
- Costs
  - Injection Compression
  - Injection Well
- Benefits
  - Additional Oil Recovery
  - Future Produced Gas
- Discount Rate used for Decision Making
  - Producer
  - Government

# Injection Economics



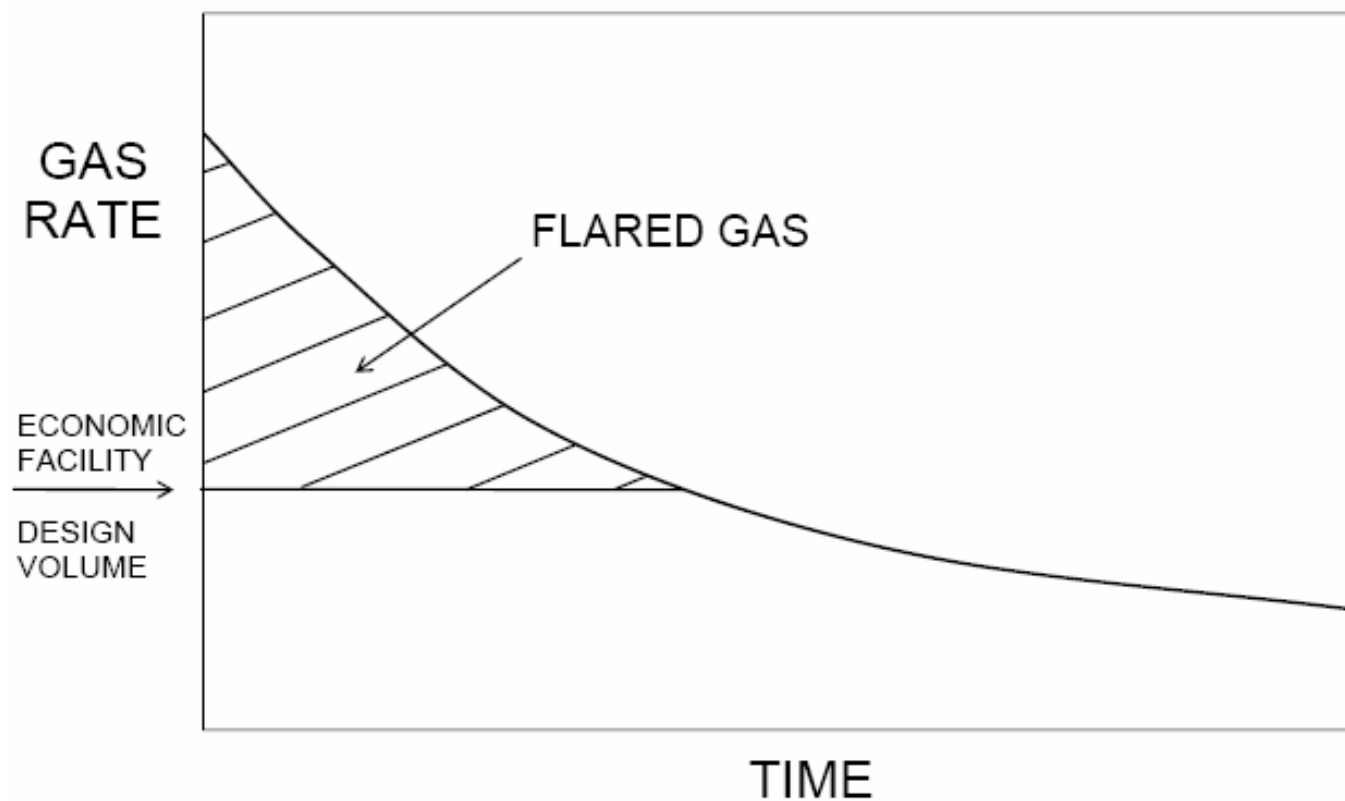
- Producer
  - Incented for maximized immediate production
  - Use cash stream to obtain capital for other development
  - Shareholder expectations
  - 25% discount rate - \$80 bbl in year 5 has \$26 PV
- Country/NOC
  - Maximize value over project life at appropriate return
  - 10% discount rate - \$80 bbl in year 5 has \$50 PV

# Production Profile – Gas Reinjection



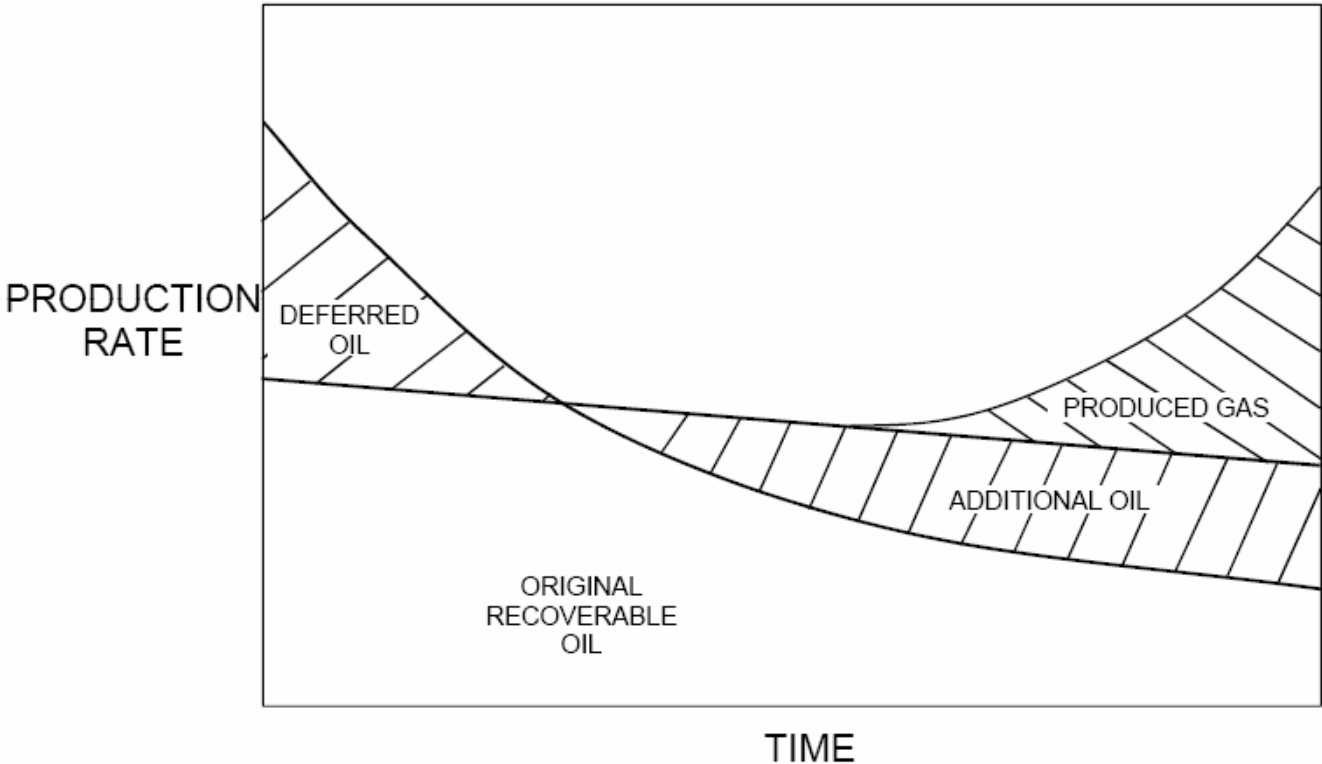
# Production Profile

## GAS RATE VS TIME



# Production Profile

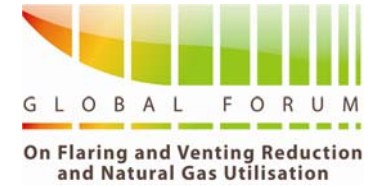
### RATE VS TIME



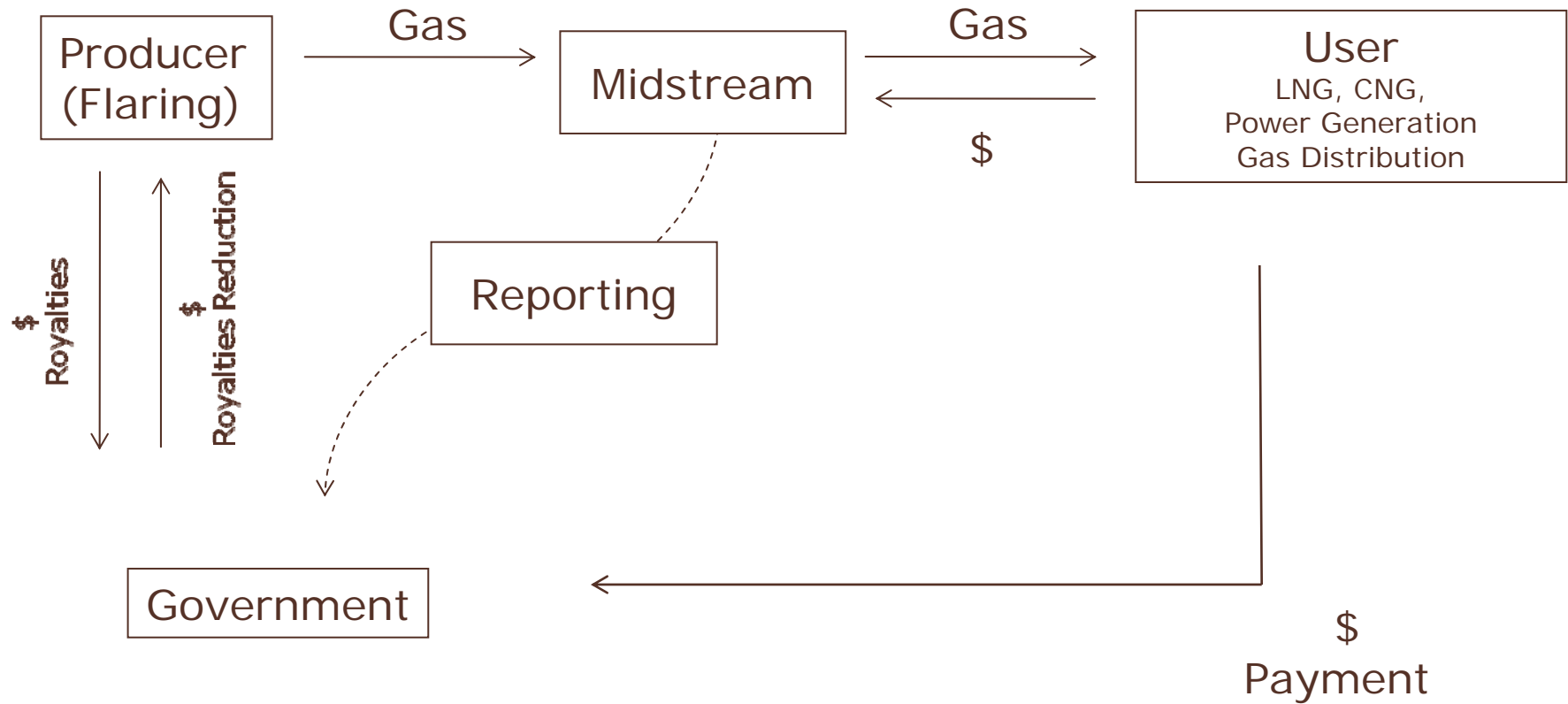
# Aside - Liquids Removal

- Liquids should ALWAYS be removed from associated gas
  - C3+ (cooking gas) has high socioeconomic value
  - C5+ (condensate) returned to crude for sales
- 7 barrels of C5+ per 1 mmscfd
  - \$9.5 million/year @ 50 mmscfd, \$80/bbl

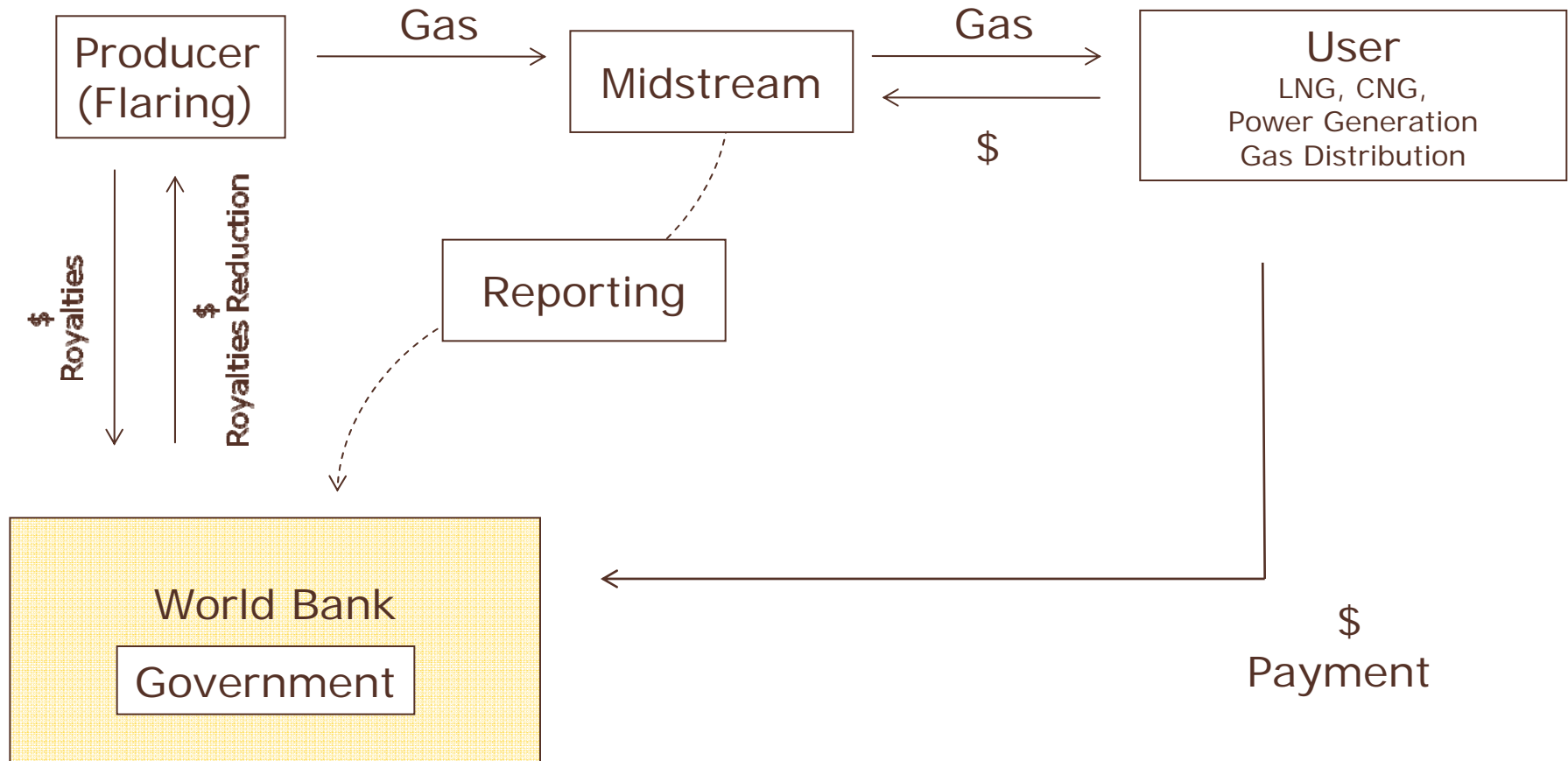
# External - Monetize The Future Gas



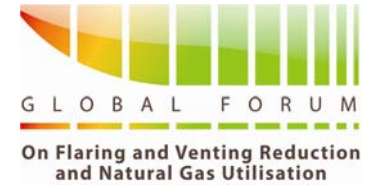
# External - Monetize The Future Gas



# External - Monetize The Future Gas



# Conclusions



- Require long term economics to prevail
- Government leadership and policy to influence production decisions
- Reservoir education and modeling
  - Questions - [bob@qualitas.ab.ca](mailto:bob@qualitas.ab.ca)