



Philip Daniel

Netback Pricing and Fiscal Regime Design

Bogota, September 30, 2015

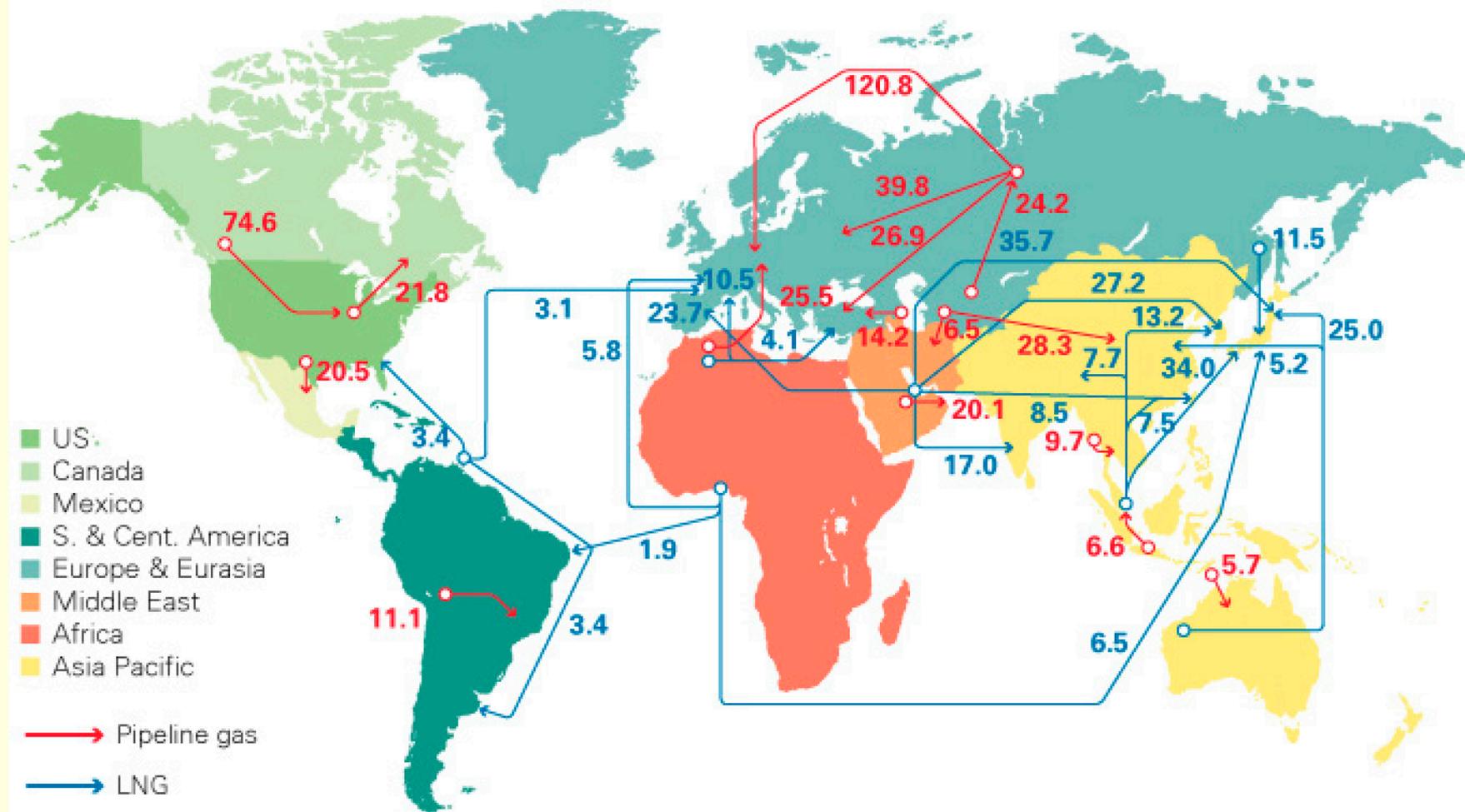


Netback pricing and fiscal regime design

- The case of natural gas

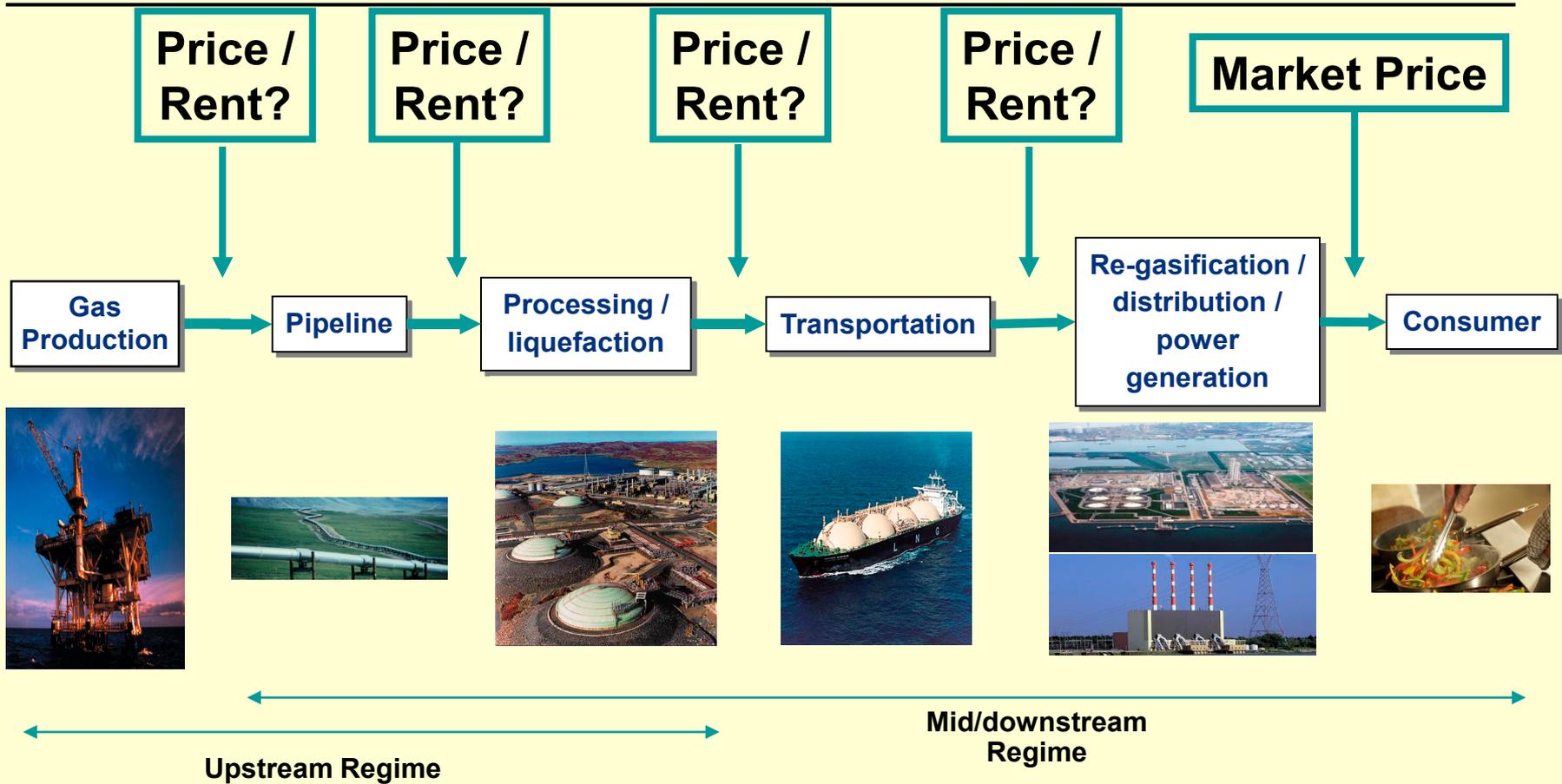
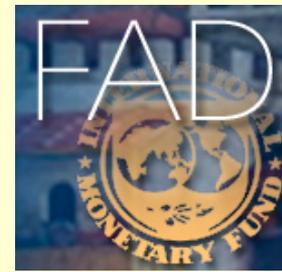
Natural gas major trade movements 2014

Trade flows worldwide (billion cubic metres)



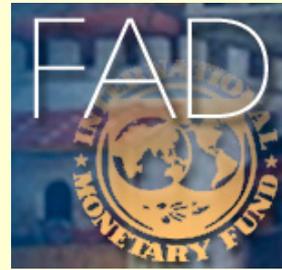
Natural Gas Projects

Natural Gas Value Chain



Note: number of links in each chain depends on the project (e.g. gas may be sold directly to consumer after processing)

Source: Wood Mackenzie



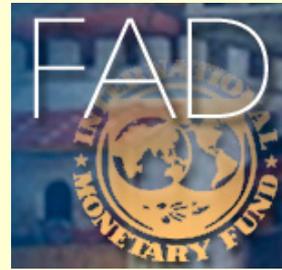
Natural Gas Value Chain

- Separation of gas and oil cost and revenue streams (in combined production) less necessary if fiscal regime profit-related
- The chain can be ‘segmented’ – different ownership of each link – or ‘integrated’ – the same companies own the entire chain
- Major distinction between domestic and export sales: **prices**
 - domestic energy prices in many countries regulated and kept low as – subsidies now reducing
 - export prices significantly higher under long term sales contracts, often linked to oil prices
- Another distinction: **costs**
 - export of gas normally incurs significant additional processing and transportation costs
- In a segmented chain, agreements set the price and level of economic rent achieved in each link – may or may not be at arm’s length
- Government may own one or more links of the chain and take economic rent
- With common ownership but different tax systems for each link, there are no ‘arm’s length’ prices and proxy transfer prices need to be established
- Alternative is to treat the entire project as the taxable entity



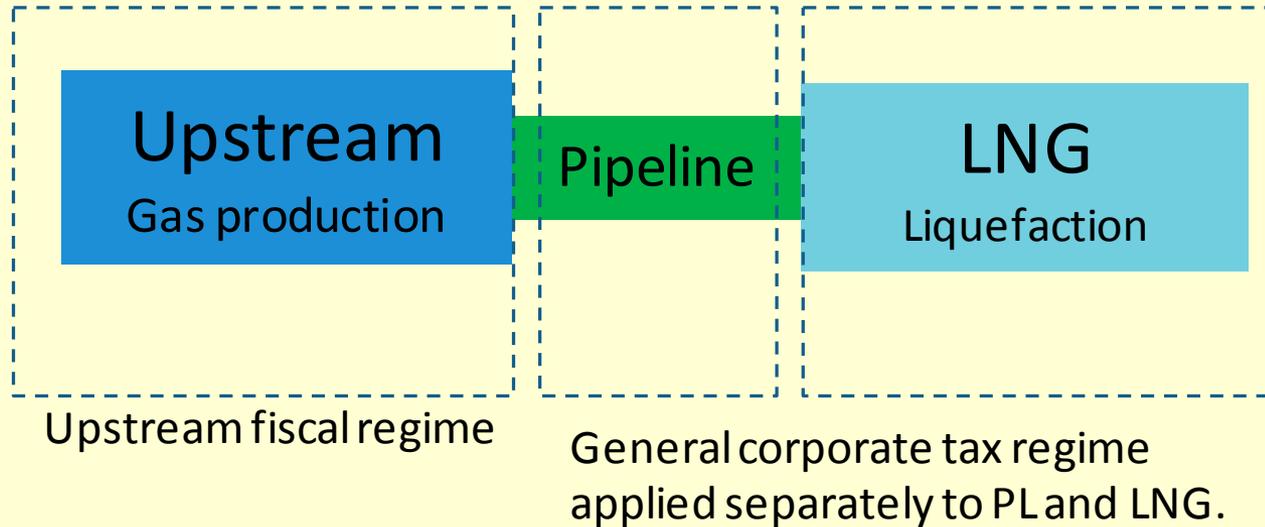
Defining the taxable entity

- Elements of the fiscal regime may only apply to specific links in the chain
- Mid/downstream elements tend to be treated as general industrial projects and are subject only to standard corporate income tax
 - major projects, such as greenfield LNG plants, sometimes receive fiscal incentives
- Upstream production tends to be subject to more complex fiscal terms
 - bonuses, royalty, production sharing, additional profits taxes
 - corporate income tax usually payable or replaced with a special petroleum profit tax
 - oil and gas production treated separately or together for tax purposes
 - individual licenses or fields may be ring-fenced for elements of the fiscal regime
- The fiscal ‘take’ tends to be much higher from upstream than mid/downstream
- Only projects which have a fiscal ‘ring fence’ around the entire project are truly ‘integrated’ - if different tax systems apply to upstream and mid/downstream then, even with common ownership, the project is ‘segmented’

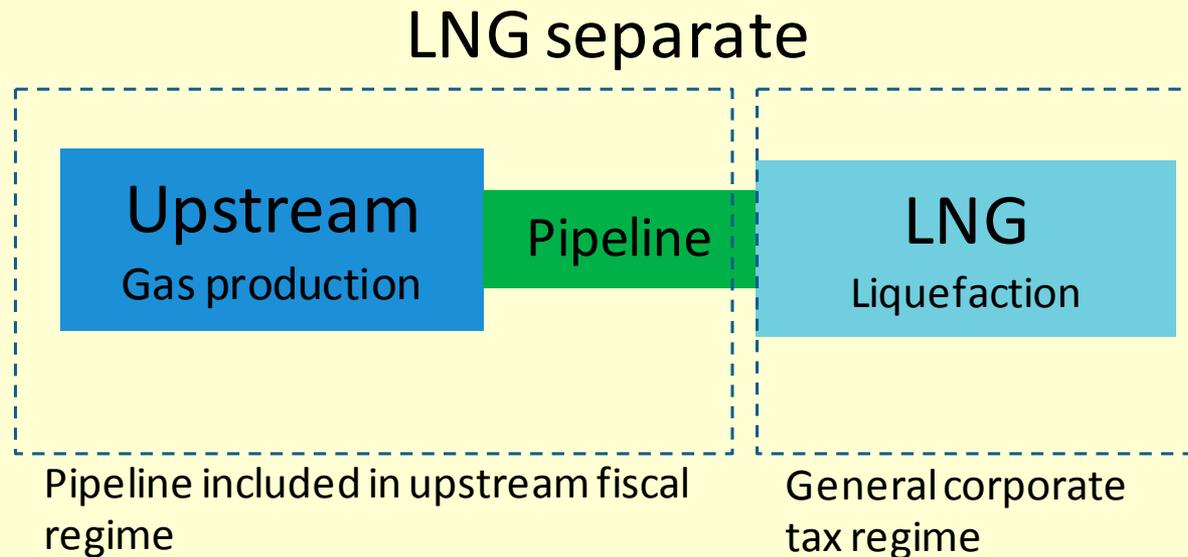


Segmented project (1)

Fully Segmented



Segmented project (2)

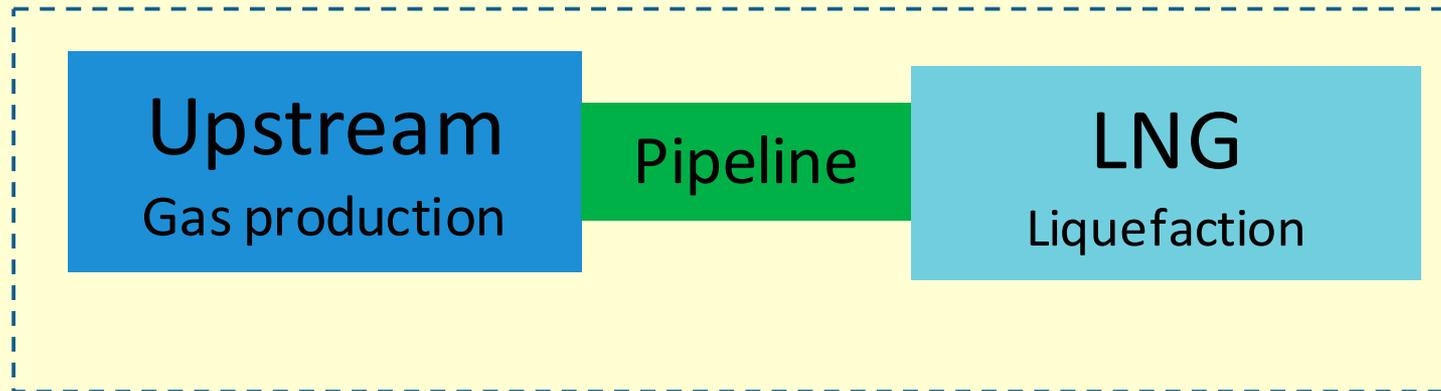


1. Upstream sells feed gas to LNG; LNG plant sells LNG
2. Or, Upstream sells LNG, pays processing fee to LNG



Aggregated project

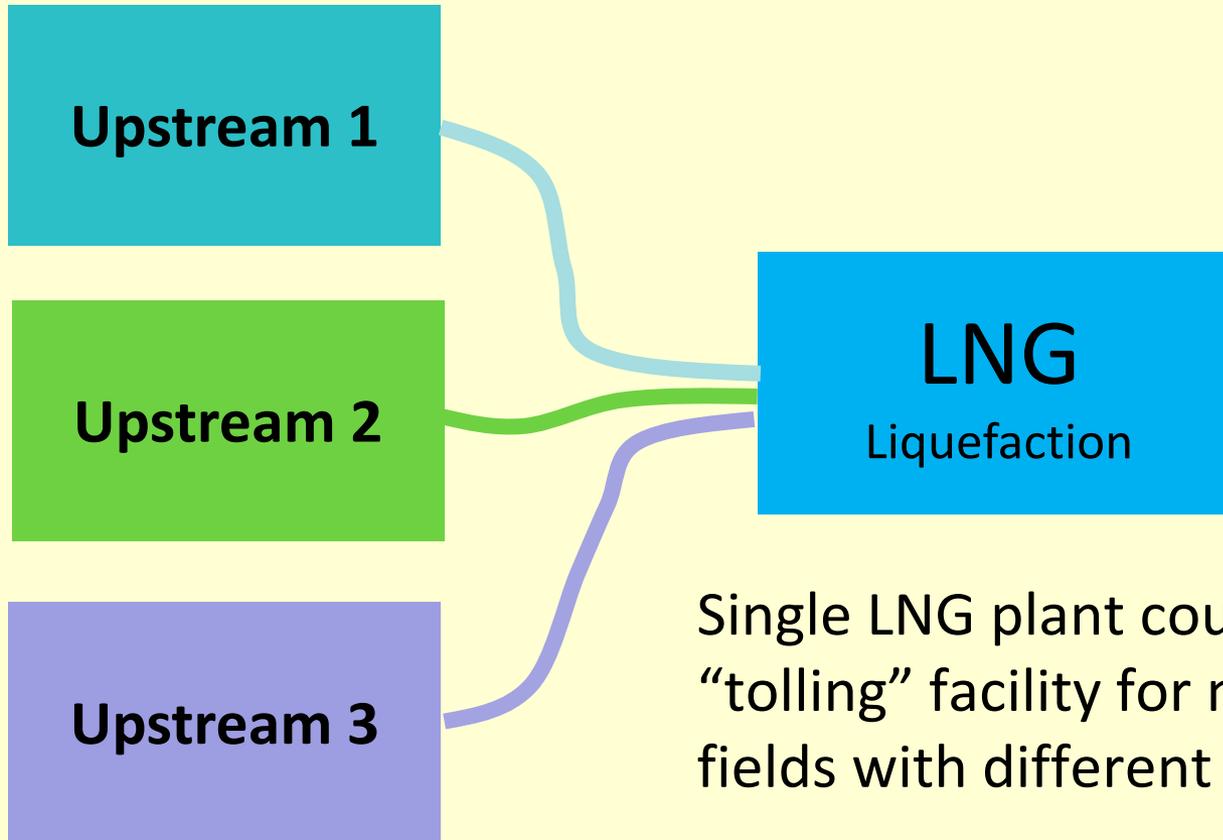
Fully aggregated



Single fiscal regime applied to aggregated project

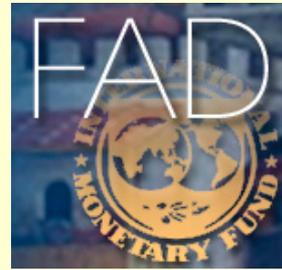


A key reason to segment



Single LNG plant could operate as “tolling” facility for multiple upstream fields with different owners.

Upstream natural gas prices

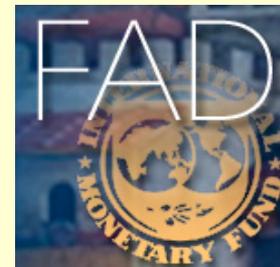


- Government owns gas and only reimburses costs: Algeria, Oman, UAE
- Government establishes prices for royalty/taxation purposes: Alberta's "select prices"
- Spot markets: currently USA, Canada and UK, and beginning to develop in Europe
- Gas price formulae are established in upstream contract: Egypt PSC, Timor-Leste
- Consumer contracts
 - normally 20-30 years with volume and price commitments – this is the most common form of pricing for direct sales to consumers in developing countries
 - consumer contracts for export sales are normally agreed with the plant owners and the upstream "share" of the price (netback) needs to be established
- Consumer price netbacks
 - upstream receives final sales price less regulated tariffs/tolls payable to mid/downstream operations (Indonesia, Trinidad (Atlantic LNG 2/3/4))
 - upstream receives a fixed % of FOB sales price (Nigeria LNG)
 - upstream and downstream agree sharing of final sales price (e.g. Trinidad (Atlantic LNG 1))
 - Upstream price agreed by "competing fuels" formula: Mozambique to South Africa project
- If upstream and mid/downstream owners are the same but tax rules are different, a proxy transfer price is required



Petroleum valuation

- Value for profits tax, royalty, production sharing should be identical or easily reconciled
- Taxing point = delivery point
- All liquids (except LNG) treated as oil
- Government right of approval over gas contracts and pricing terms
- Recognize arm's length prices/terms where available
- Rules for determining pricing where no contract
 - Advance Pricing Arrangement
 - Comparable Uncontrolled Price
 - Index to competing fuels



Conventional gas pricing mechanisms

Cost-plus principle (additive methodology)

Sales price = production cost + transportation services + overheads + profit margin

“Market-value” or netback value principle (subtractive methodology)

- Introduced in 1962 by Dutch Minister of Economic Affairs as the basis for natural gas marketing (previously the cost-plus principle was used)

“Netback value” at the point of sale = “market value” of natural gas in inter-fuel competition (in each market sector) - costs of transport services - overheads and profit margin

Long-term oil-indexed contracts

- Remain the dominant form of GSAs in northwestern Europe

Europe Model

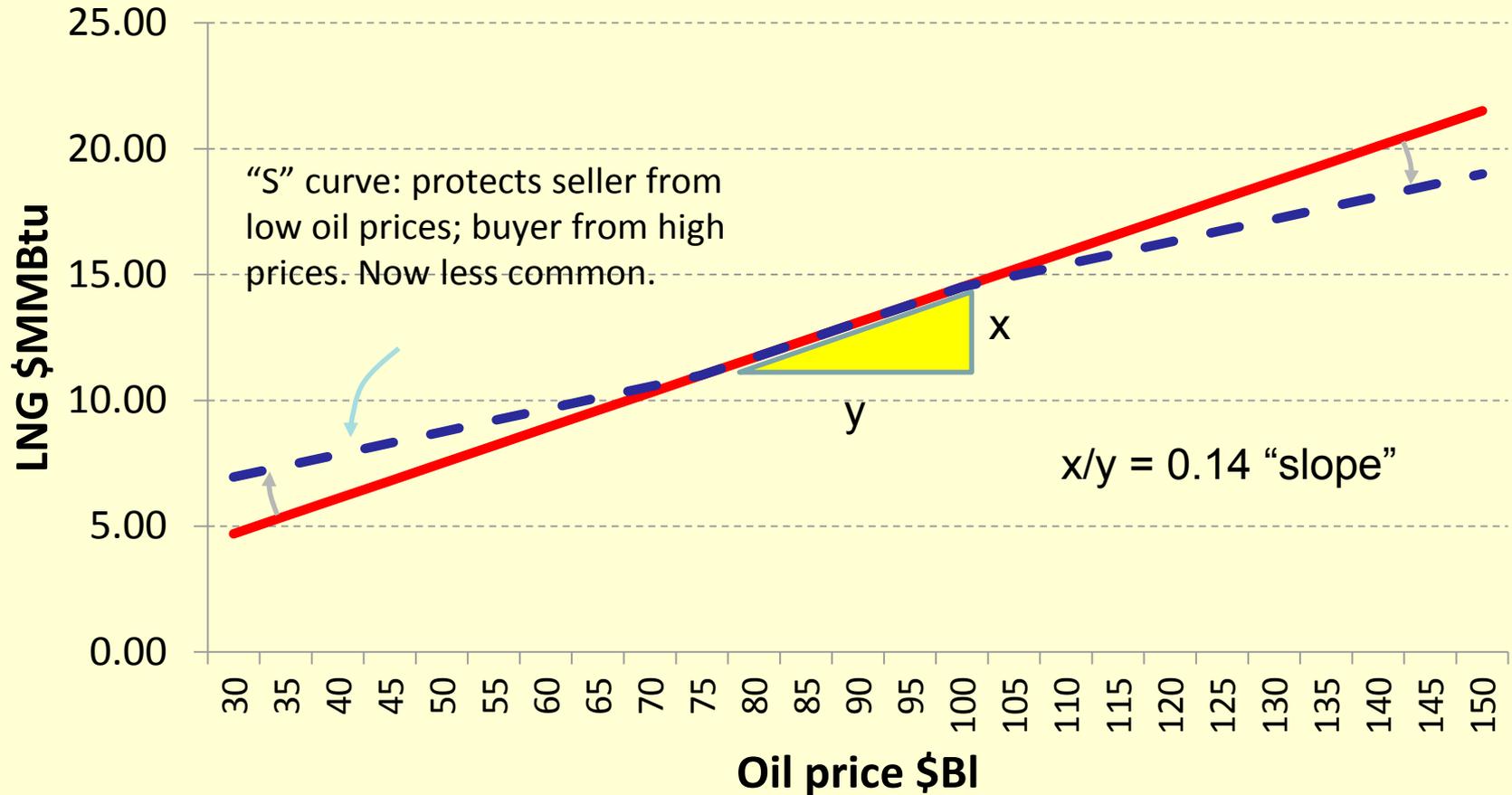
$P_n = P_o \times (W_1 \times F_1 / F_{1(t=0)} + W_2 + F_2 / F_{2(t=0)})$	
P_o	Original negotiated price at time 0
W	Weighting factors/percentage of alternate fuels
F_1, F_2	Alternate Fuels' prices published by third parties, low/high sulfur fuel oil, and coal are common alternative
Inflation Component	May be added.

Japanese Model

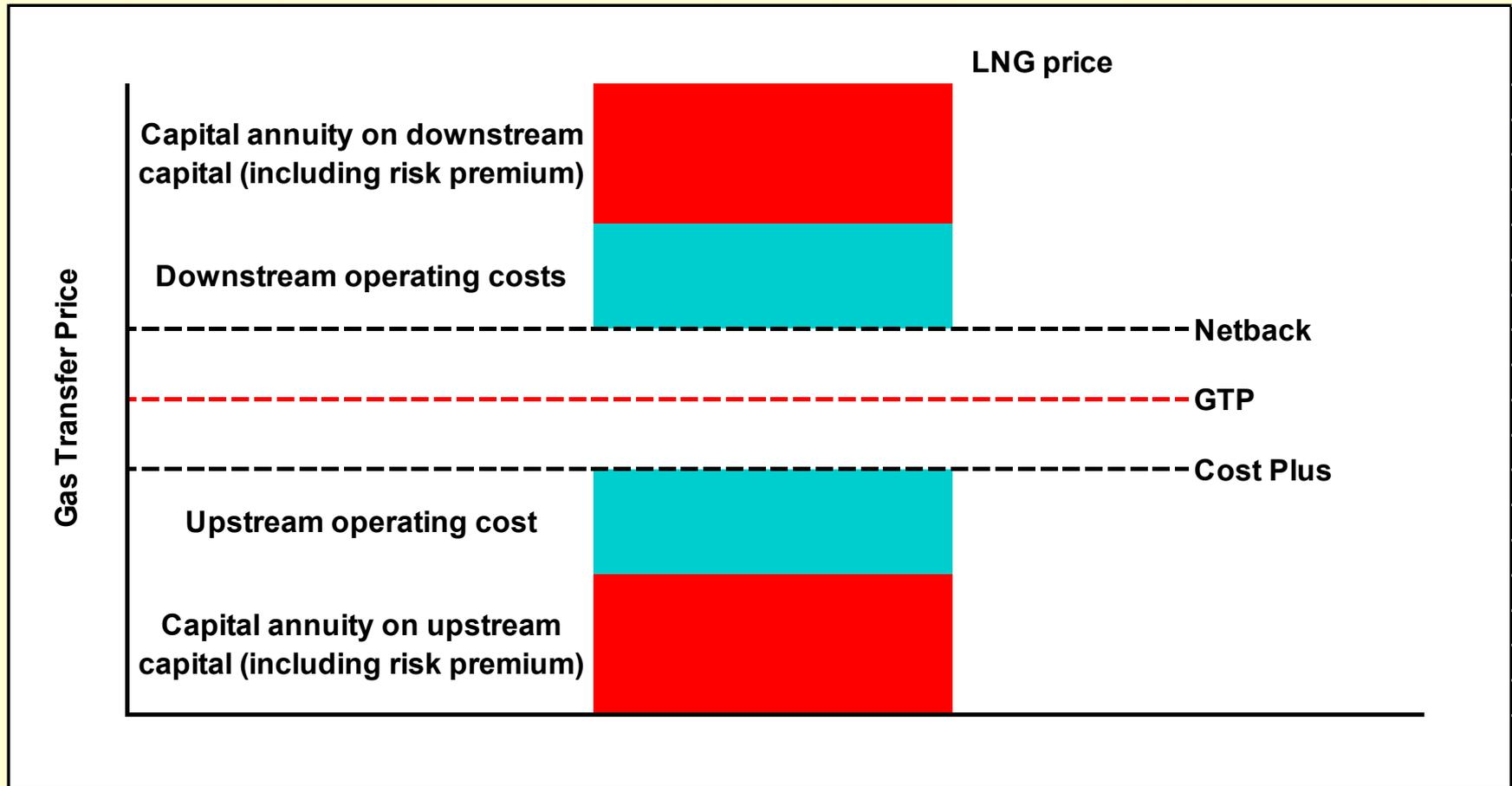
$P_n = C_o + B_1 \times \text{Brent}$	
C_o	Base Price
B_1	Coefficient of adjustment
F_1, F_2	A basket of fuels' prices published by third parties,
Inflation Component	May be added.

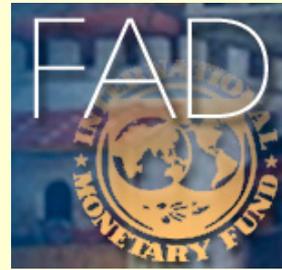


LNG “slope”



Residual Pricing Mechanism - Australia





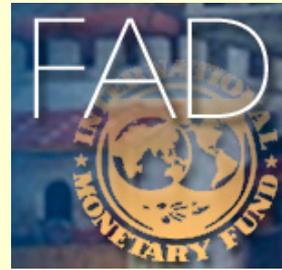
Conclusions and implications for tax policy

- Domestic gas pricing and fiscal policies must be developed simultaneously
- If upstream and downstream fiscal regimes are different – which is normal – there is a strong rationale for upstream and mid/downstream operations to be segmented
- Where ownership of upstream and mid/downstream operations is the same, a proxy transfer price needs to be established
- Alternative approach is to have a separate tax regime for integrated gas projects and treat the entire project as the taxable entity
- Role of national oil company normally very important as it may have different equity interests in upstream and mid/downstream
- In integrated export projects, government needs to closely monitor and benchmark agreed market prices and costs in each link of the chain to ensure taxable income is fairly calculated
- Government and producers should aim to share in realised market prices which are greater than expected – needs to be addressed in gas sales agreements
- Gas projects may require more attractive fiscal terms than oil projects - although fiscal terms linked to project profitability could apply to both
- Where liquids are taxed at a higher rate than gas, it is important to consider how condensate is treated – if liquids, then higher tax revenue, but also a higher price will be required for gas



Netback pricing for mineral royalty

Acknowledgment



- Mineral value-added chain chart by professor Pietro Guj
- Presented at Conference on Natural Resource Taxation in the Asia-Pacific region, August 11-13, 2015



A tax and royalty base for mineral products

- Most mineral products are sold after some value has been added by downstream processing
 - Crushed and screened ores
 - Concentrates (physical) and Intermediate (metallurgical) products and
 - Refined metals
- royalty value bases should be derived with reference to the price realised in the arm's-length sale of the first mineral product sold along the mining value-adding chain

Mining value-added chain and possible taxing points

