

# **INTERNATIONAL ENGAGEMENT AND TECHNOLOGY TRANSFER:**

## ***REFLECTIONS ON ENGAGEMENTS AND TECHNOLOGY TRANSFER***

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# Outline

- Engagement/technology transfer experiences/case studies
- Challenges and recommendations for potential mechanisms to facilitate technology transfer



# Engagement – Steelmaker: “from *shrug* to *hug*”

- Steelmaker: Why are you here?
- Capacity development
  - Senior executives and mid-management
  - Professionals
- Technology development and collaboration
  - Own pilots
  - Testing platforms: for technology providers to prove
  - IP ownerships
- Revenue/business case
  - CAPEX concern: stranded assets
  - OPEX: cost vs revenue
- Lessons learned
  - Technology cost and efficiency critical for tradeable products
  - Commercial viability, sensitivity and competition



# Engagement –Petrochemical: Culture and commercial difference

- Technical assistance
  - Mid-management & professionals: detailed understanding of technology, operational improvement
  - Senior executives: high level investment support
- Technology development and collaboration:
  - Adaptation under local conditions(climate, raw materials, energy)
  - Resistance from international technology/equipment provider
  - IP/License arrangement
- MDB loan not materialized
- Lessons learned
  - Government policy/regulation flexibility for new technology
  - MDB finance for new technology needs broader engagement and support



# Engagement – Power: low emissions technology

- Pilot developed and operated in Australia
- Existing bilateral R&D collaboration
- Pilot to be relocated in developing nation
- Design standards and operating conditions difference
- Provided general technology package and re-design fabricate locally
- Lessons learned
  - Technology transfer should consider local adaptations. IP licensing needs to be tailored.
  - Pre-commercial collaborations lower IP barriers



# Engagement – Waste/biomass to power/heat

- Technical assistance
- Great pilot scale demonstrations
- MDB loans qualified and ready to proceed
- Local government budget issues
- Lessons learned
  - Firm commitment from local government vital
  - Commercial viability



# Challenges

- Culture sensitivity: top down, bottom up, hierarchy; functional departments collaboration
- Old business models /business cultures  
E+P+C vs EPC
- Forward looking technology planning (vision)
- Long term benefits vs near term costs
- Government regulations lacking for new technology



# Features of effective mechanisms

- Clear achievable objectives in consultation with relevant stakeholders
- Identify key priority areas : finite resources
- Framework to support international collaboration on R&D
  - Value chain: material suppliers, logistics, technology providers, producer, purchaser
  - Public private partnership(PPP) critical for the success of technology transfer: risk control, policy incentives, minimize commercial sensitivity, IP protection and effective transfer
- International green finance mechanisms to support pre-commercial collaboration on R&DD (developing national leap forward opportunity)
- Pilot/demonstration project: key to demonstrate technical and commercial viability of technology, improve public and private confidence; provide training of local skills and expertise.





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