



**PETRONAS**

# Malaysia Production Enhancement Landscape and Key Challenges

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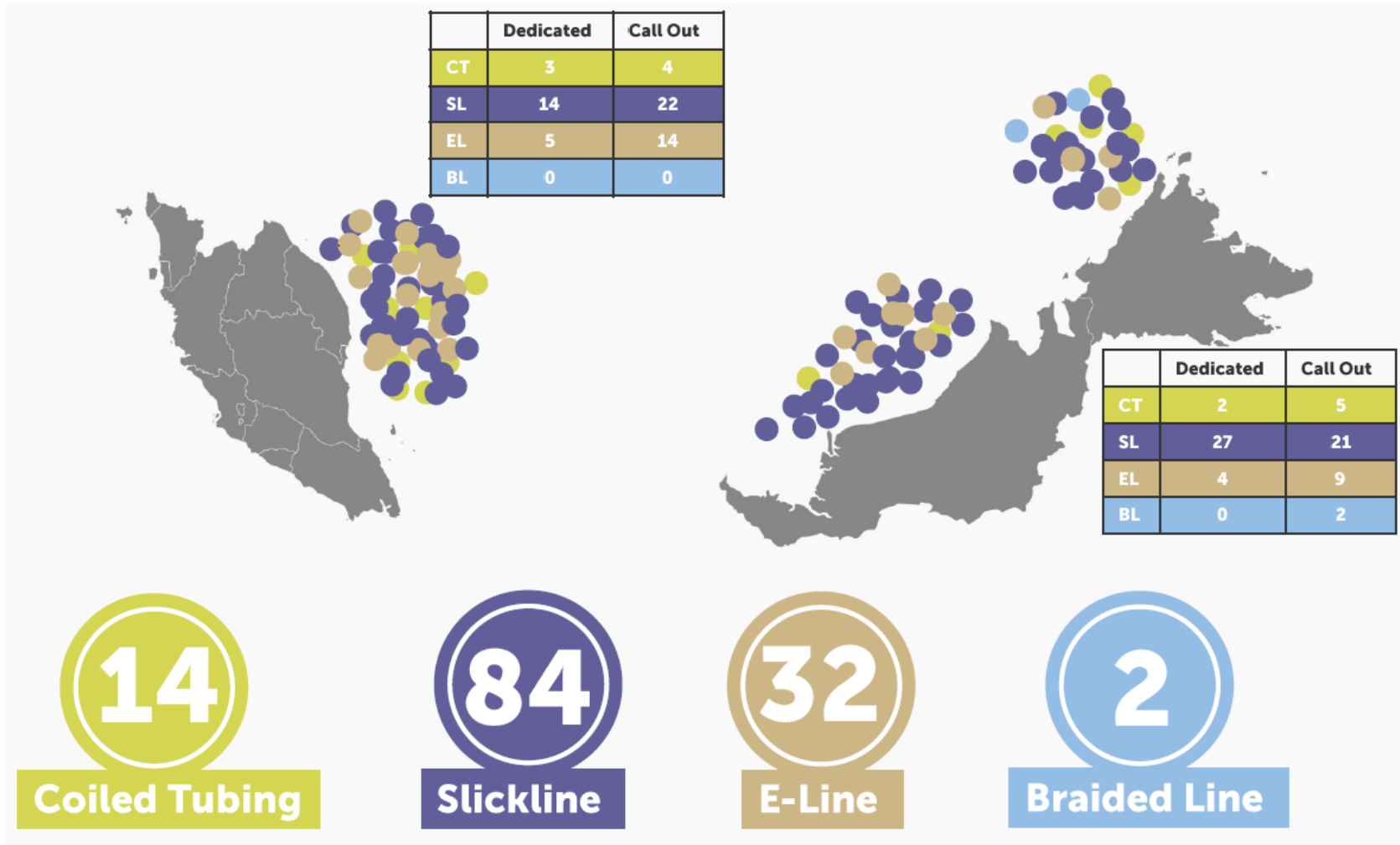
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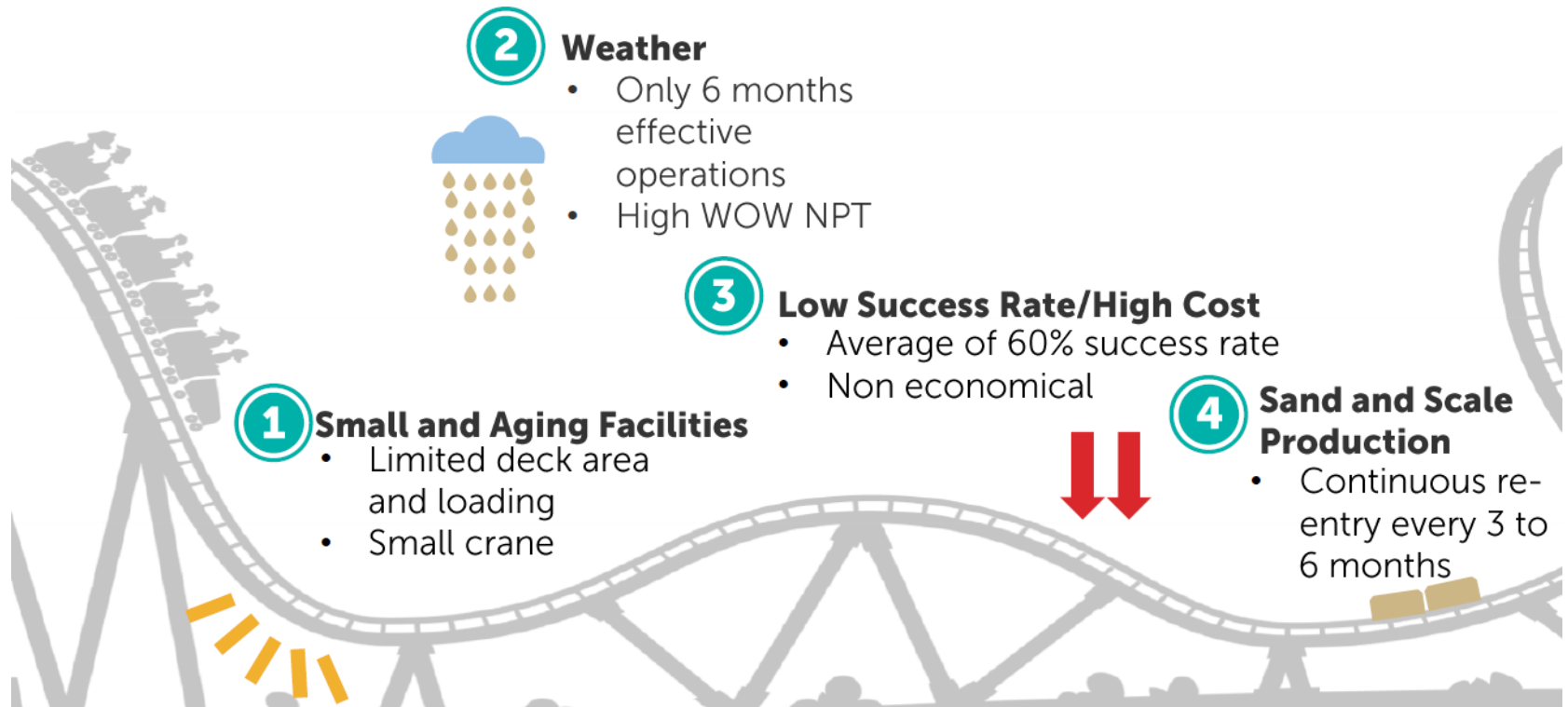
# Malaysia - At 30,000 feet

1. Total no of strings ~ 4200 of which 50% are idle
  - Target to achieve 80% active strings by 2020
  - Production enhancement and Idle well reactivation remain as key focus areas
2. More than 22 rigs to be deployed in 2018
  - More than 50 infill projects
  - > 150 new wells
  - Well cost reduction as key target
3. More than 650 wells idle more than 3 years
  - PETRONAS pushing firmly for well P&A
  - Abandonment cost are too high, require drastic reduction

# Malaysia Intervention Landscape



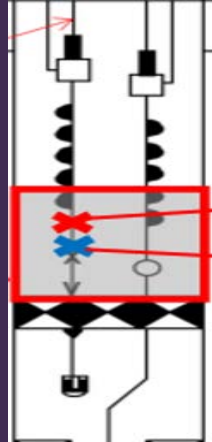
# Production Enhancement Key Challenges



# Perforating Key Challenges

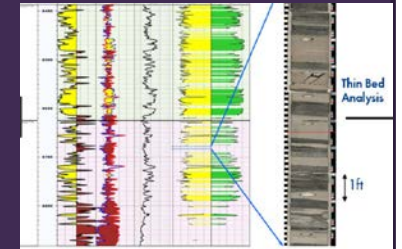
## Dual String Access

- 0 deg phasing
- Partial penetration
- Reliable orienting tool



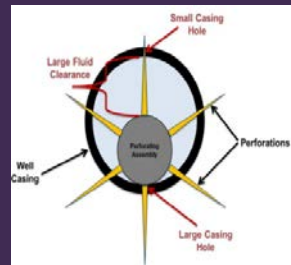
## Thin Bed Development

- Memory Contact Log
- Well Integrity

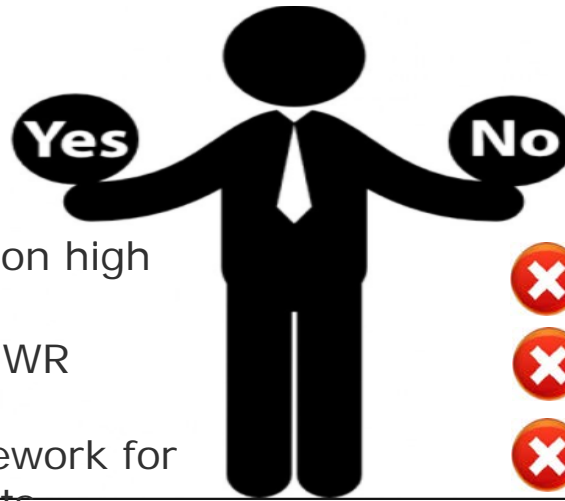


## Thru Tubing Perforation

- Non-uniform
- Cross flow
- Risk of gun stuck



# Enabler for Challenge – Innovative Contract

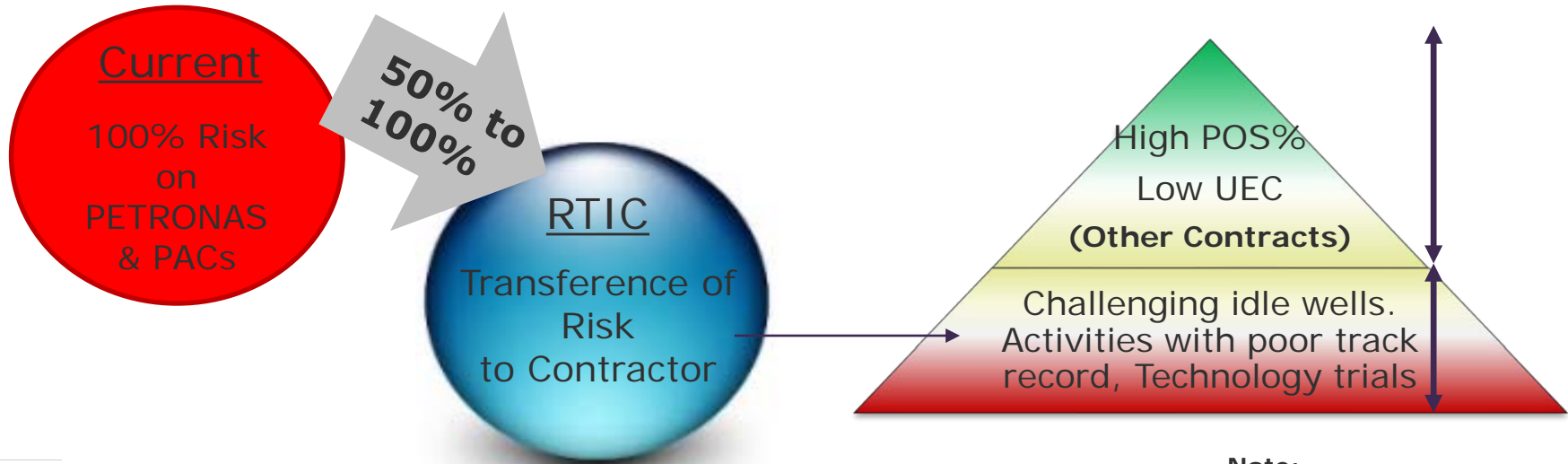


RTIC is:

- ✔ To reduce exposure on high risk activities
- ✔ To increase PE and IWR success rate
- ✔ To introduce a framework for risk transfer contracts

RTIC is not:

- ✘ A replacement of existing contracts
- ✘ A contract to be applied in common low-risk activities
- ✘ A rigid contract dictated by MPM to PACs



**Note:**  
**UEC: Unit Expenditure Cost**  
**POS: Probability of Success**



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**Thank you**