WATER-ALTERNATING-GAS (WAG) Project in Malaysia

PRESENTATION BY MALAYSIA
The WAG Project

- WAG is a first EOR development project implemented in Dulang field, offshore Peninsular Malaysia.
- The R & D in EOR technology (Water-Alternating-Gas) has been aggressively pursued for Dulang Field as a case study.

Why Dulang Field?
- One of Malaysia’s major production oil field OIIP: 1,168 Mstb; EUR: 344 Mstb
- Presence of water and gas injection facilities.
THE EOR JOURNEY

- Started with thorough feasibility study in the laboratory and pilot since 1997.

2002: Pilot Launching
2007: Pilot WAG First Oil

- The main target in Dulang WAG implementation is to recover oil in non-water invaded area and attic oil.
- WAG injection (4 MMscf/ld gas and 3500 BPD water) for cycles of 3 months each in one of the fault block (S3).
THE FINDING

- Sufficient gas available for Dulang field-wide WAG implementation.
- Statistical analysis shows what the expected incremental recovery from field-wide WAG in Dulang is very promising.
- Based on pilot S3 block performance, the field-wide WAG implementation will realize 18.5 MMstb incremental reserves at P50 (after risk), with WAG incremental rate of 8,000 stb/d.
- The gas utilization reduce venting in line with PETRONAS policy.
- The “First in the SEA” to implement WAG field-wide.
THANK YOU