



Gas Conservation in PDO

Middle East Forum on Flaring Reduction
& Gas Utilization
10th May 2010

John Malcolm, Managing Director PDO

Petroleum Development Oman



Petroleum Development Oman is the major Oil & Gas exploration & production company in The Sultanate of Oman

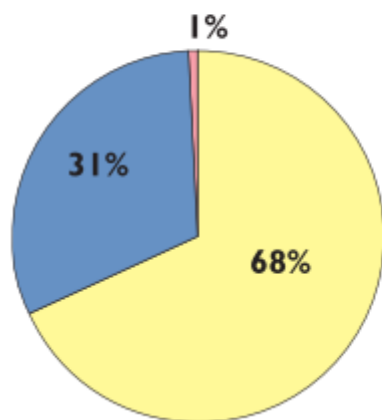
- ❖ Concession area 100,000 km² (40% of The Sultanate's geographical area)
- ❖ Oil & Condensate production ~650,000 barrel/day
- ❖ Gas Production ~400,000 BOE/d
- ❖ More than 120 producing fields
- ❖ Over 4,000 producing wells



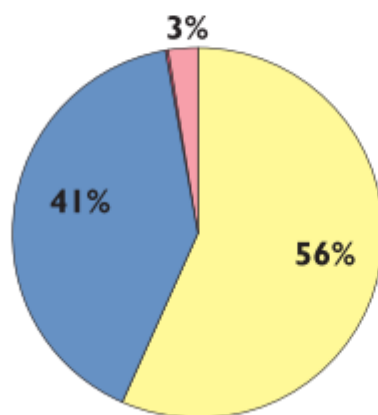
PDO's Changing Oil Portfolio



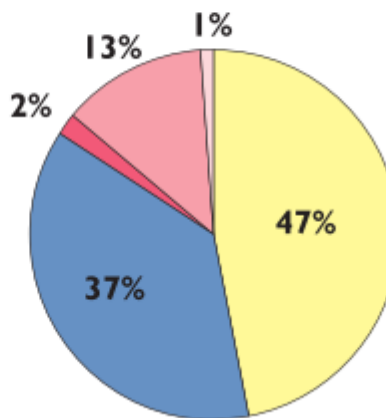
2000



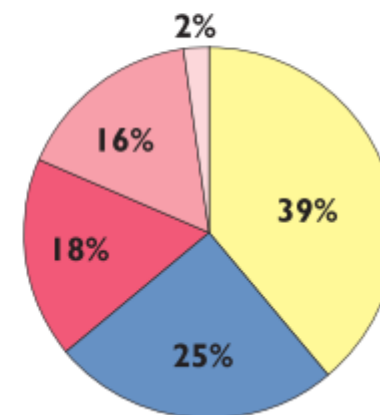
2008



2011



2018



Primary

Secondary

Thermal EOR

Miscible Gas Injection EOR & Sour Oil

Chemical EOR

PDO Gas Conservation Strategy



- ❖ PDO needs gas to run its increasingly complex oil and gas business
- ❖ Natural Gas is a precious resource and needs to be managed responsibly
- ❖ By implementing a comprehensive gas conservation strategy, PDO is conserving significant volumes of gas and reducing GHG emissions

Reducing Flaring



PDO Flare Reduction



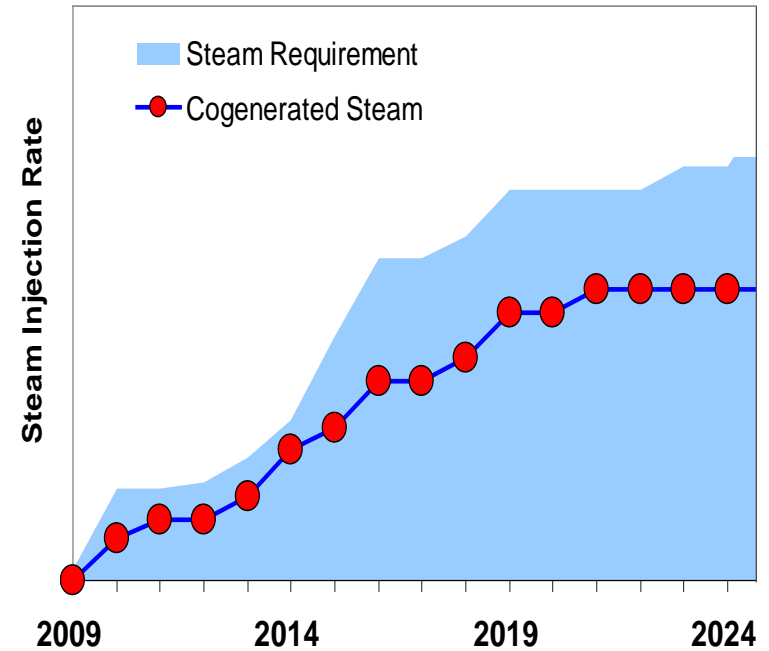
PDO Flaring Reduction

Improving Energy Efficiency



Power Station
Waste heat is
>500 °C

By capturing exhaust heat that is normally vented, steam can be generated and injected



PDO will generate over 60% of it's steam from heat that might otherwise be wasted

Co-Generation of Steam and Power

Reducing Gas Consumption



Nimr Water Treatment Project

Alternative Energy Sources



Solar Steam Trial

PDO Gas Conservation Strategy

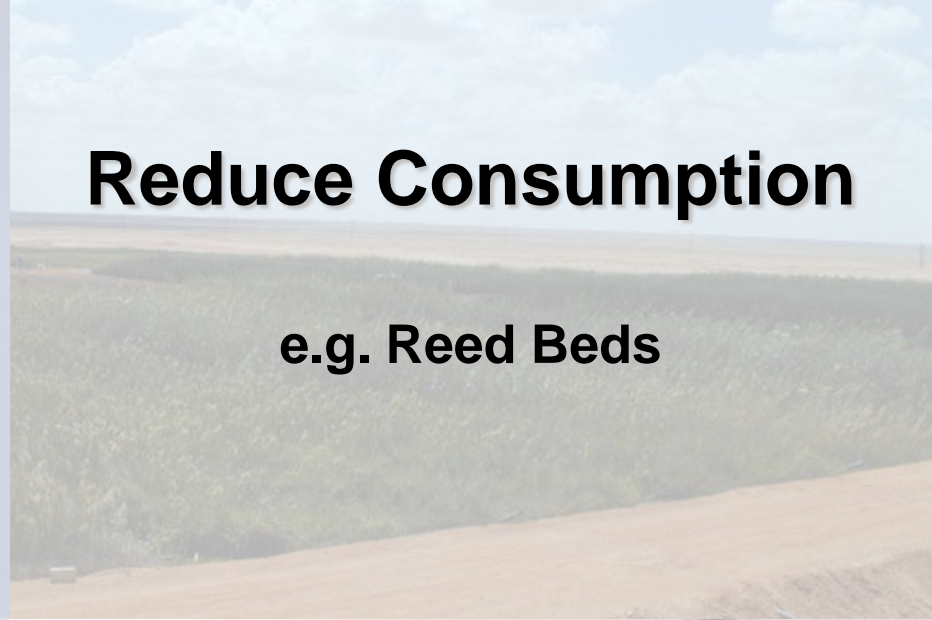
Reduce Flaring

e.g. Improve Compressor
Availability
Investment



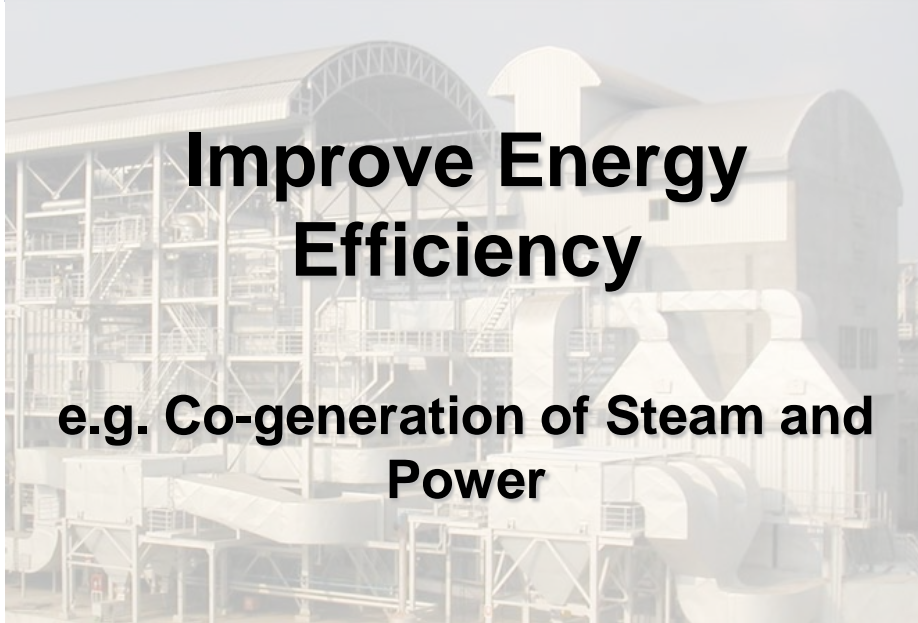
Reduce Consumption

e.g. Reed Beds



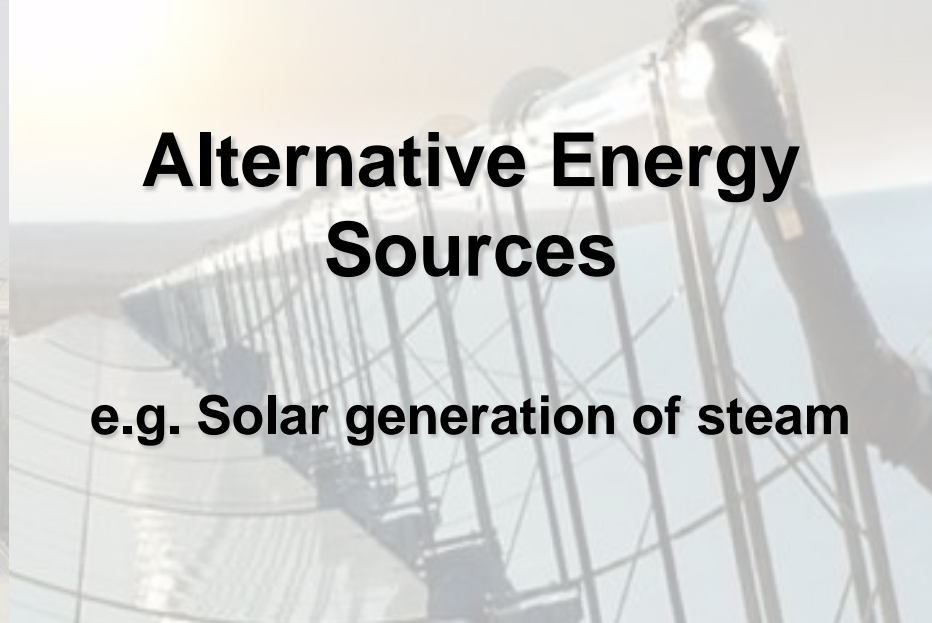
Improve Energy Efficiency

e.g. Co-generation of Steam and
Power



Alternative Energy Sources

e.g. Solar generation of steam





Shukran

PDO Green House Gas Strategy



Reduce

Focus: Existing operations

- Cut Flaring
- Energy Efficiency projects
- Improve Power Planning
- Reduce Deep Water Disposal

Sequester

Carbon Capture and Storage (CCS)

Focus: Large emission sources

- Feasibility Studies on Saline Aquifer injection
- CO₂ Mineralization

Minimise

Focus: New facilities, esp. EOR

- Power Station Waste Heat for Thermal EOR
- Solar for Thermal EOR
- PV in Remote Ops

Trade

Focus: Existing operations

- Framing Opportunities