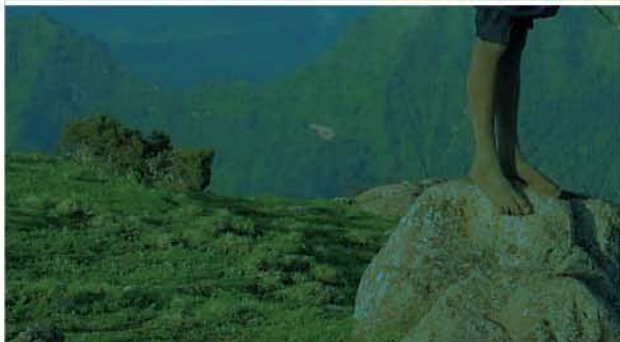




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STAKEHOLDER INFORMATION SESSION 4  
24-28 OCTOBER 2011**



# Outline

- Environmental impact assessment
- Environmental framework
- Key issues
- Approvals timeframe
- Contact details



# Environmental impact assessment

## Environmental Impact Statement (EIS)

- **Bilateral agreement** between Qld and Cwlth Govts
- Terms of Reference (**TOR**) issued by DERM
- Informed by **technical studies**
- DERM undertakes **adequacy review** (EIS meets TOR)
- **Published** for public and government agency **comment**
- Arrow prepares **supplementary** EIS to address submissions
- Qld and Cwlth Govts decide **approval and conditions**

# Environmental impact assessment

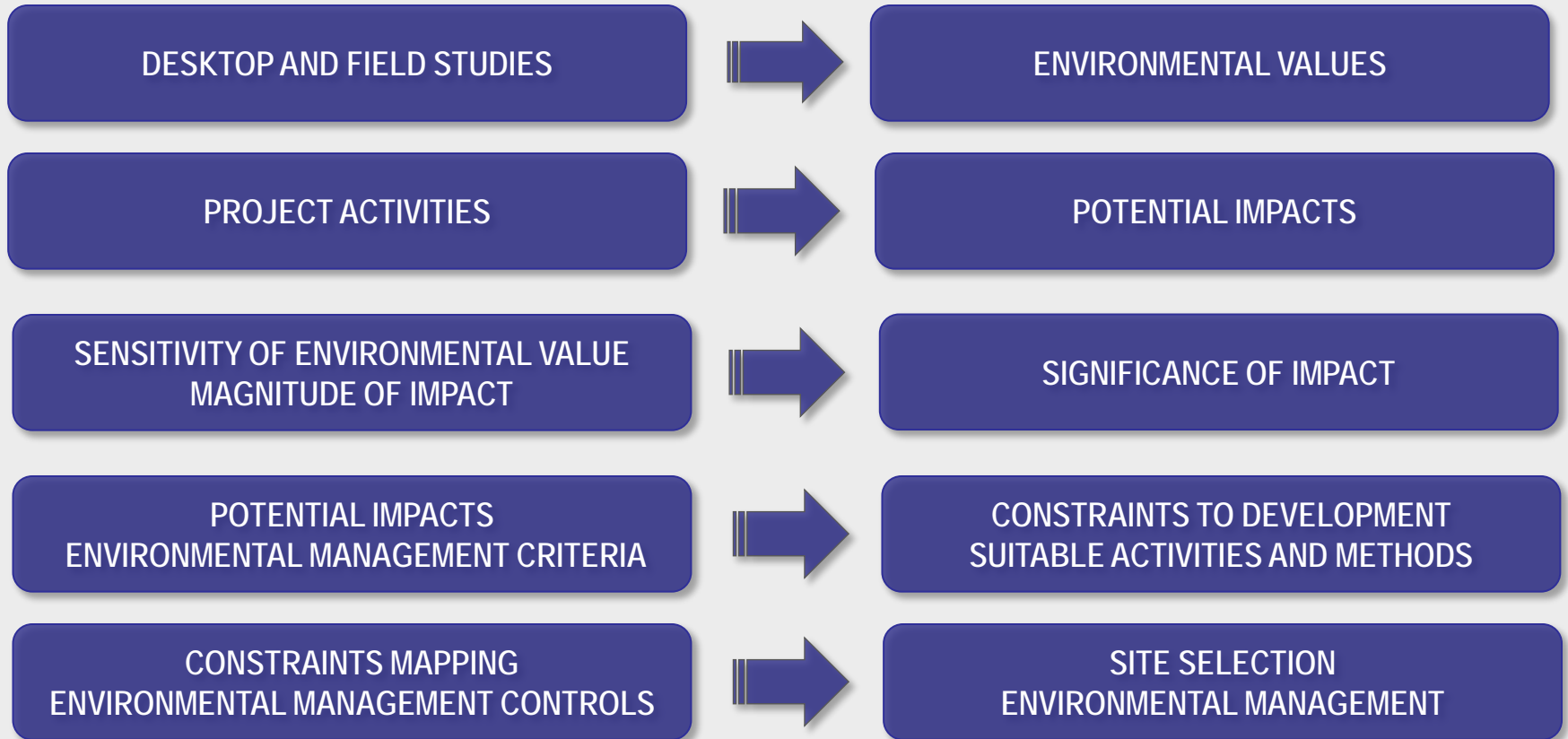
## Purpose

- Assess **potential impacts** on environment, society and economy
- Propose feasible ways to **manage** them

## Approach

- We know **what** is going to be done
- We know **how** it is going to be done
- **Where** and **when** managed by the **Environmental Framework**

# Environmental framework





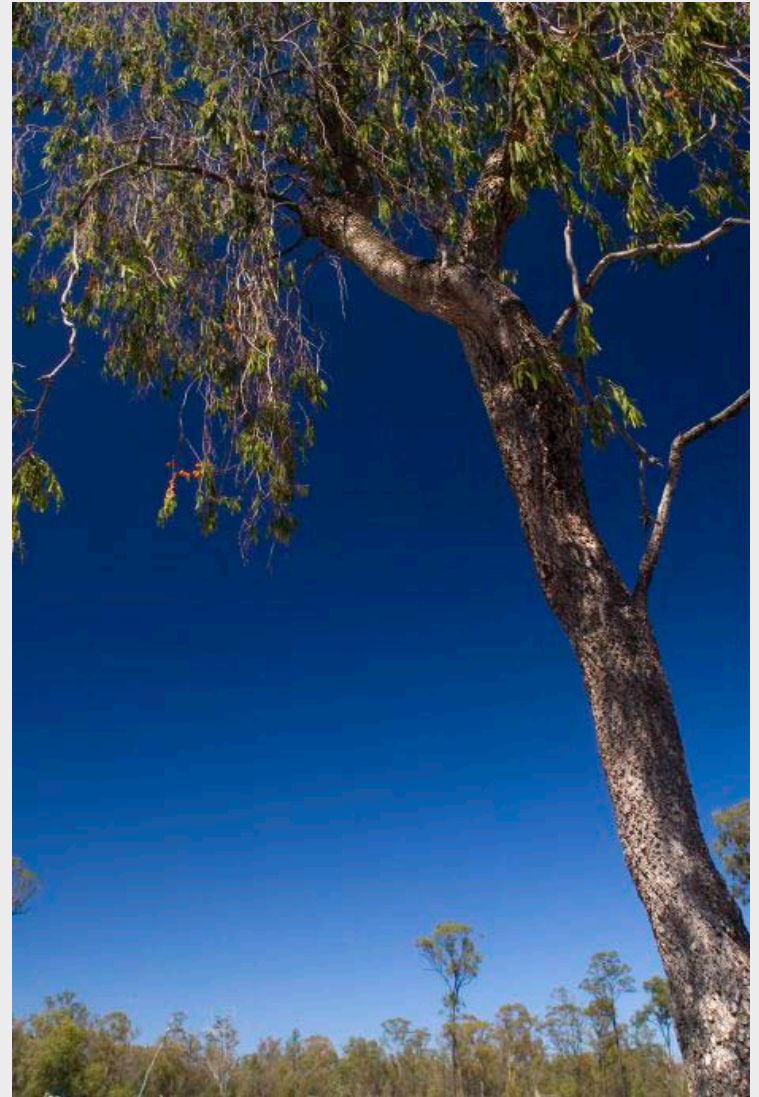
## Environmental framework cont'd

Constraint	Infrastructure			Applicable Framework
	Wells	Flowlines & Pipelines	Production Facilities	
No Go	N	N	N	No project activities permitted
High	Y	Y	N	Project activities permitted only with very strict controls
Moderate	Y	Y	Y	Procedural and specific environmental controls
Low	Y	Y	Y	Procedural environmental controls



## Key environmental issues

- Groundwater
- Agriculture
- Amenity (noise, air quality, visual)
- Socio-economic
- Roads and traffic



# Noise

- Sources
  - Production facilities (compressors, gas turbines)
  - Well head infrastructure (gas engines)
  - Vehicles, plant and equipment
- Impact assessment
  - Typical installation modelled; worst-case meteorological conditions
  - Very quiet background > more onerous noise limit criteria
  - Facilities: criteria met at 1 km with attenuation; unmitigated at 3-5 km
  - Production wells: criteria met at 300 m



# Air Quality

- Sources
  - Production facilities (gas turbine exhausts, flares)
  - Well head engines
- Pollutants
  - Key indicators are oxides of nitrogen ( $\text{NO}_x$ ) and ozone ( $\text{O}_3$ )
- Impact assessment
  - Peak development (2020) modelled (production facilities and wells)
  - Worst-case meteorological conditions (three regions)
  - No exceedences at regional level ( $\text{NO}_2$  /  $\text{O}_3$ )
  - Ground level concentrations achieved at 175 m to 225 m

## Socio-economic

- Influx of workers within organic growth estimates but locally significant
- High labour costs may affect local business viability
- Increased demand for local services
- Increased demand for medical services
- Housing availability and affordability
- Landholder anxiety (development timeframes)
- Community anxiety (health, safety and environment)
- Increased likelihood of traffic accidents

## Roads and traffic

- Road network
  - Highways and arterial roads more resilient to increased traffic
  - Local roads most susceptible to impacts
- Traffic
  - Modelling based on conceptual location of production facilities/depots
  - Project traffic estimated to be 1-2% of total traffic in region
  - Northern roads (Chinchilla/Wandoan) more susceptible to impacts
- Mitigation
  - Traffic management plan (in consultation with Councils and DTMR)
  - Road safety e.g., protected turning lanes, traffic controls etc

## Approvals timeframe

EIS Process	Target Date
Voluntary EIS application and Initial Advice Statement lodged	Q4 2009
Draft Terms of Reference published for public comment	Q1 2010
Terms of Reference issued to Arrow	Q3 2010
Arrow prepares EIS (including undertaking technical studies)	Q4 2009 – Q4 2011
Arrow submits draft EIS to DERM for adequacy review	Q4 2011
EIS published for public and government agency comment	Q1 2012
Arrow prepares Supplementary EIS (addressing submissions)	Q1 2012 – Q2 2012
Qld and Cwlth Govts decide approval and conditions of approval	Q2 2012 – Q3 2012

## Contact details

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# Questions



Source: Arrow Energy