

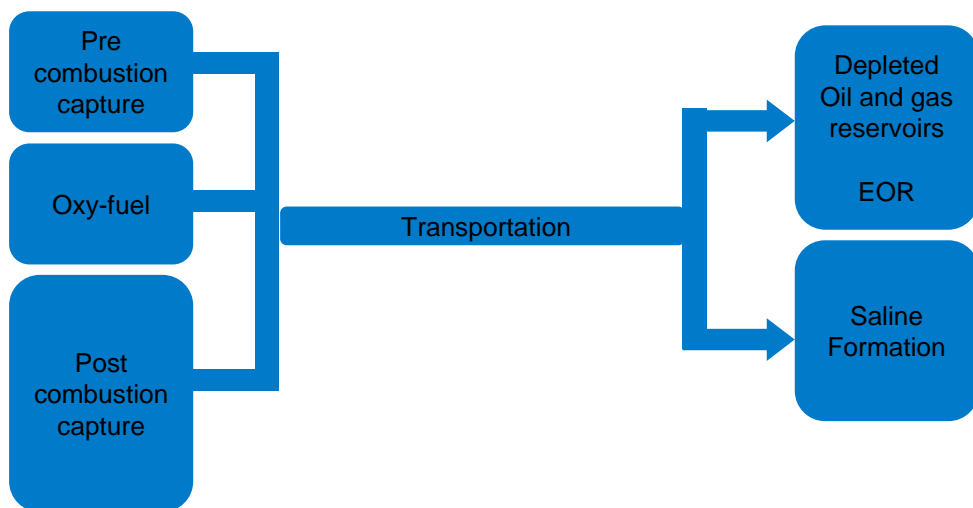


# Hydrogen Energy - revolutionary fuel

september 2008

Lewis Gillies, chief executive

## lower carbon energy diversity..



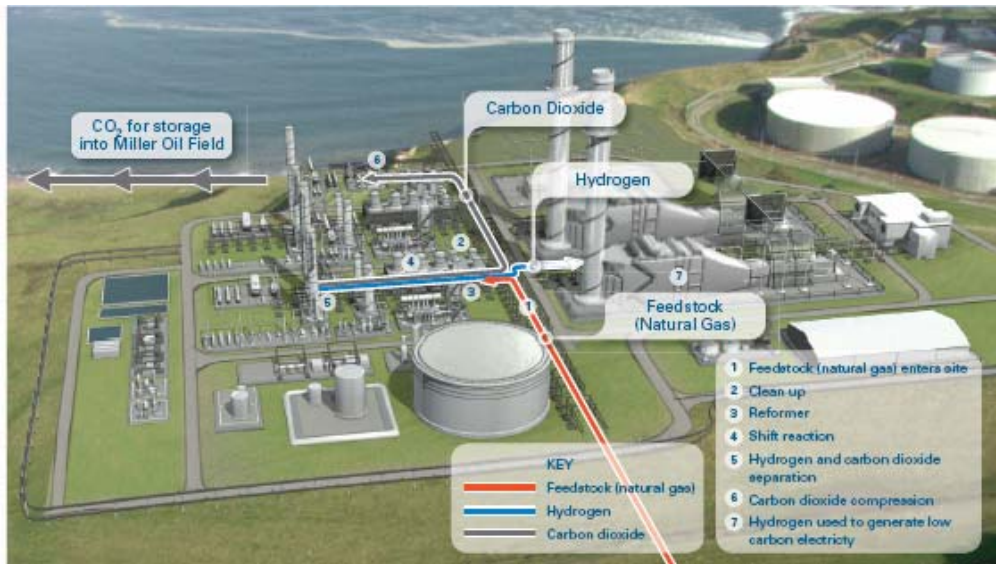
.....competitive but complex projects



**RIO TINTO**

A joint venture between  
BP Alternative Energy and Rio Tinto

# Peterhead, Scotland



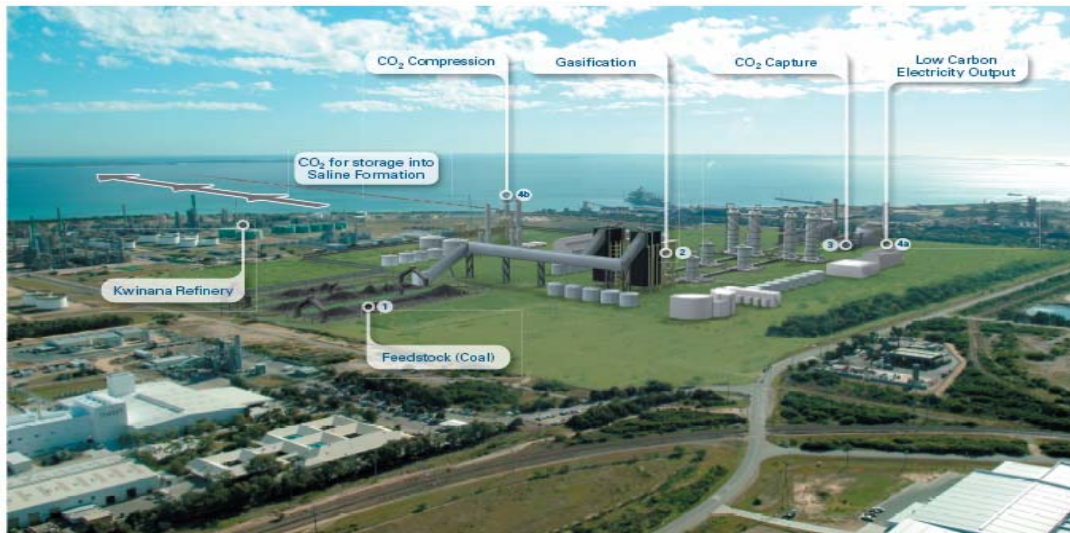
...failed as it was ahead of the political process



RIO TINTO

A joint venture between BP Alternative Energy and Rio Tinto

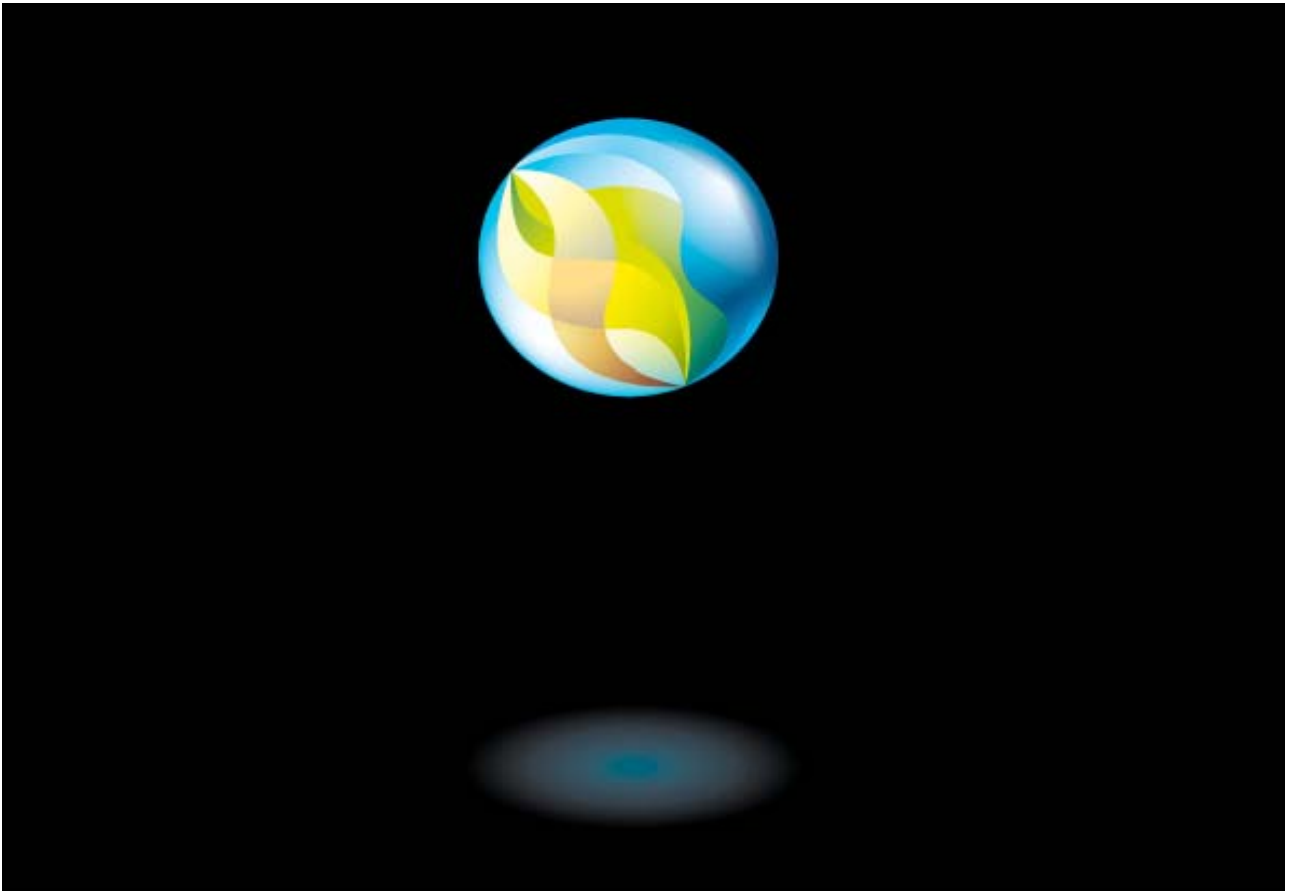
# Kwinana, Australia



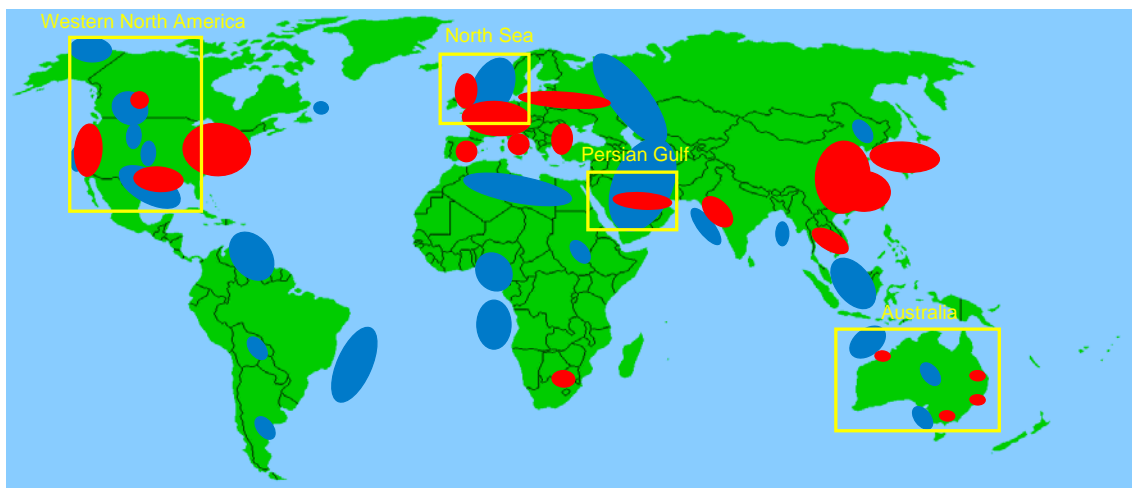
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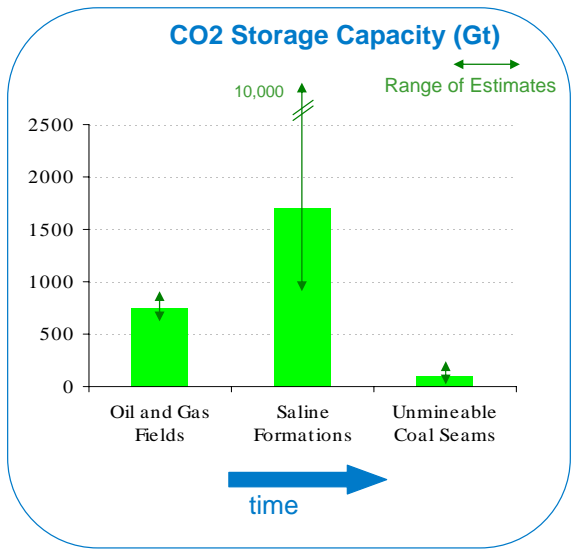
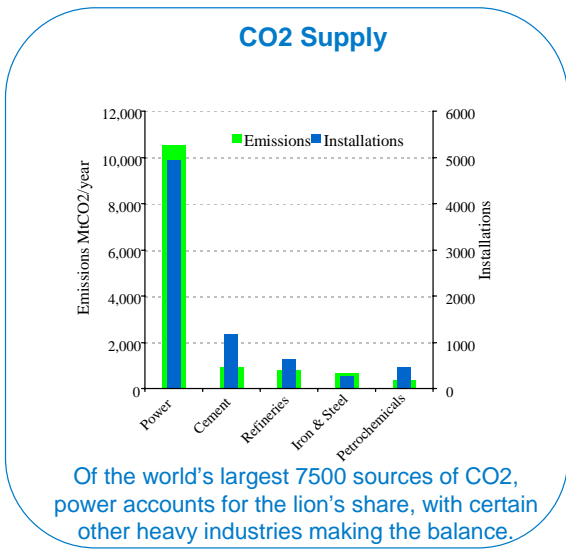
...failed technically



# initial geographic focus

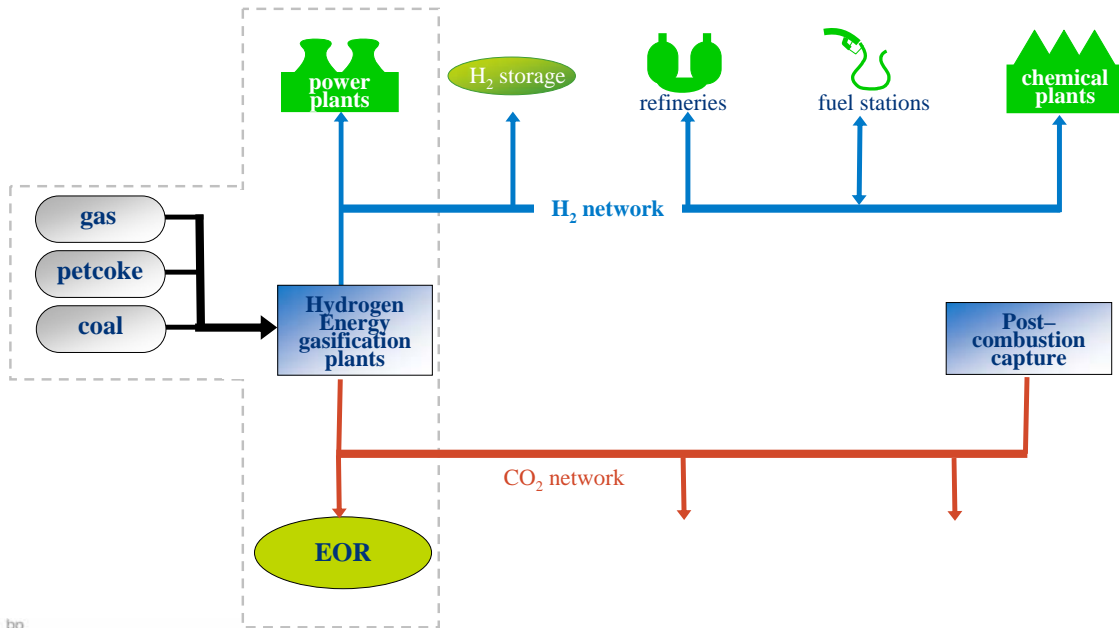


# focus on sources and sinks

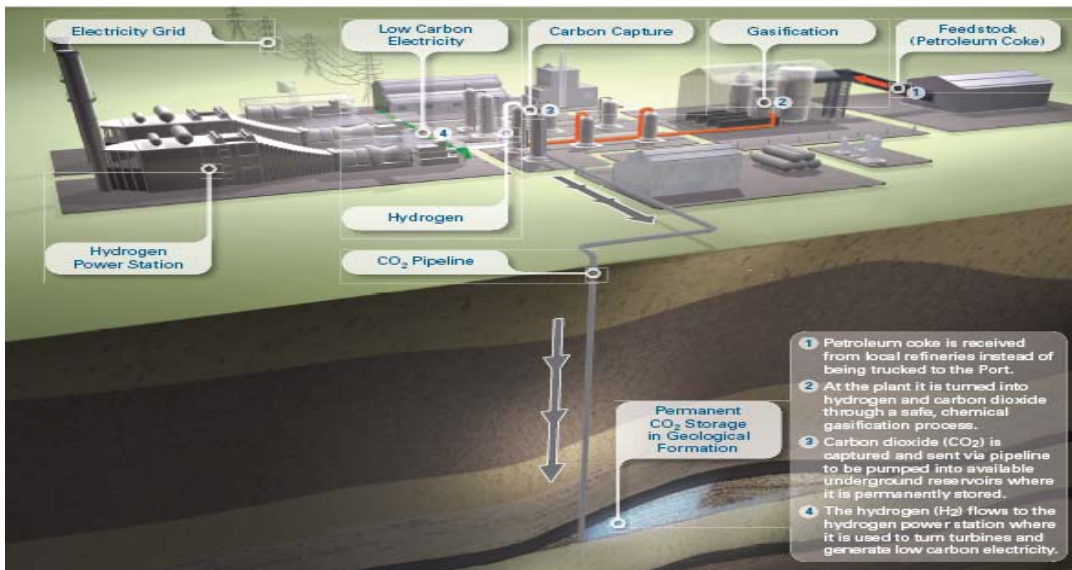


Source: IPCC

# Hydrogen Energy - a fuel supplier



# California, USA

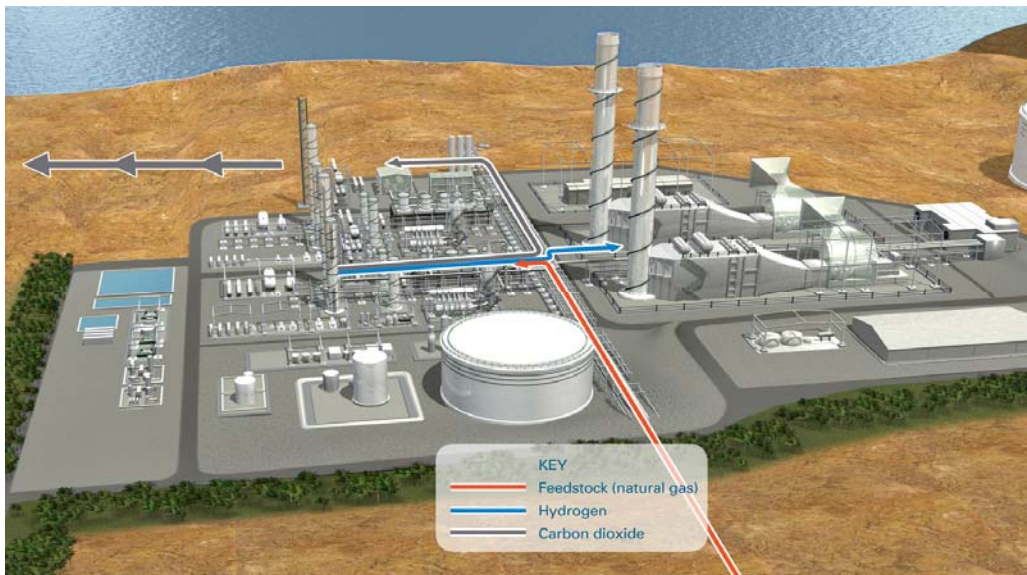


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...permit filed

# Abu Dhabi, UAE



...the most advanced project



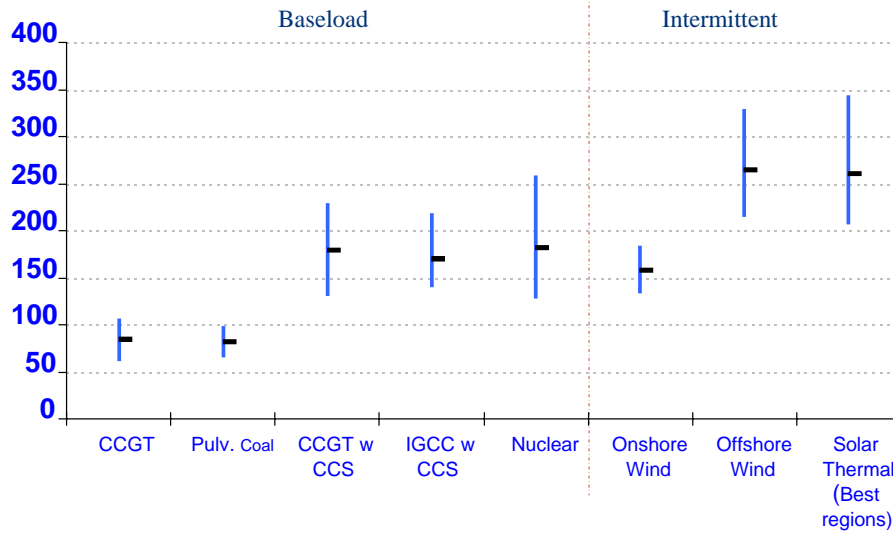
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## Hydrogen Energy offers competitive baseload power now for a carbon constrained world

Levelised CoE, \$/MWh - excluding carbon price





## policy

### form

- most forms of support are helpful
- expect a combination of mechanisms for early projects
- endorse introduction of cap-and-trade schemes
- performance standards likely in some jurisdictions

### scale

- CCS is already competitive with several forms of renewable and alternative energy; and nuclear energy, despite being at the top of its technology cost curve,
- >\$100/tonne CO<sub>2</sub> avoided (compared with coal)
- costs will decline over time



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TINTO

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## regulatory regimes



### permitting

- evaluation permit
- storage permit
- non-discriminatory criteria
- exclusivity
- overlapping licences?



### reservoir characterisation & assessment

- data collection
- simulation
- dynamic model
- hazard characterisation
- risk assessment



### operations & monitoring

- financial security
- CO2 purity
- monitoring
- reporting
- corrective measures



### closure & transfer

- final risk assessment
- decommissioning
- transfer responsibility
- no further liability to operator



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further information:  
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