

CLAYTON UTZ

NSW Gas Future 2020: Regulatory issues

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Regulatory issues shaping the market:

- Carbon
- Carbon
- Carbon
- Renewables
- Short-term trading market
- National retail regulation framework

National Energy Customer Framework

- Process driven by Ministerial Council on Energy
- Harmonisation of retailing rules across gas and electric energy
- Consistent regulation of retailing services across states
- Rules developed by AEMC, enforced by AER
- Implementation 2011-2013

What is the STTM?

- Compulsory market for the wholesale trading of natural gas
- 'Virtual' hubs at Adelaide and Sydney cover several wholesale delivery points relating to one or more distribution networks
- Commenced 1 September 2010 in Adelaide and Sydney.
- Potential for inclusion of Queensland hubs.

How does the STTM operate?

- Operated by the Australian Energy Market Operator (AEMO)
- Timing
 - Gas is traded one day before the actual gas day
- Market Schedule
 - Based on notice of expected quantities given 3 days ahead

The transaction

- All gas supplied through the hub is transacted in the hub
- Title, custody and control of the gas passes at the custody transfer hub directly from the supplier to the purchaser
- Supplier must have title or authority to dispose of the gas

Participants

- Trading Participant
- STTM Shipper
- STTM User
- STTM Facility Operator
- STTM Distributor
- MOS Provider

Forms of trading

- Ex ante offers to supply and bids to withdraw gas
- Price taker bids to withdraw gas
- Optional MOS increase and decrease offers being an offer to provide MOS by increasing or decreasing the quantity of gas supplied or withdrawn by that holder.
- Optional contingency gas supply and withdraw offers

Market Operator Service (MOS)

- MOS is the market operator service by which capacity (in GJ) is provided to balance pipeline deviations by increasing or decreasing the quantity of natural gas supplied to or withdrawn from a hub using an STTM pipeline.
- Participants make MOS increase offers and MOS decrease offers.

Contingency gas

- Balances supply and demand when other mechanisms (e.g. MOS) cannot
- Trigger events:
 - Forecast of pressure conditions over or under acceptable operating levels
 - Forecast inability to meet seasonal levels of daily delivery capacity
 - Event upstream of STTM distribution centre expected to adversely affect supply
 - Ex ante market schedule indicates inadequate supply

Price caps and floors

- The minimum market price is \$0/GJ
- The maximum price cap is \$400/GJ
- AEMO has the ability to enforce administered price caps at \$40/GJ

Trading schedule

Four principle types of trading:

1. MOS - 15 business days before
2. Ex Ante - 3 business days before
3. Contingency - by 6.00 pm day before
4. Market schedule variations - from 1.00 pm applicable gas day until 5.00 pm, 4 days after applicable gas day

Requirements for bidding and rebidding

- Market participants may submit, vary or revoke ex ante offers, ex ante bids or price taker bids.
- Bids and offers must be made in good faith.

Scheduling and Pricing Algorithm (SPA)

- Used by AEMO to create provisional schedules and determine prices
- Takes into account:
 - Capacity limits of registered trading rights
 - Priority flow and direction of registered facility services
 - Delivery capacity of STTM facilities
 - Flow from hub no greater than flow to hub

Scheduling constraints

- Hub energy balance
- Trade right capacity
- Pipeline hub capacity
- Pipeline flow-direction
- Bid and offer step

Information obligations

- Any information to be prepared and submitted in accordance with *good gas industry practice* which means:
 - *"the practices, methods and acts that would reasonably be expected from experienced and competent persons engaged in the business of providing natural gas services in Australia, acting with all due skill, diligence, prudence and foresight in compliance with all applicable legislation (including the STTM Rules), authorisations and industry codes of practice."*
- Some information may be confidential

Equipment obligations

- To be maintained in accordance with *good gas industry practice*
 - Metering equipment
 - Recording or forecasting conditions
 - Providing bids or offers
- Implications in relation to good faith requirements

Prudential requirements

- Protect AEMO from risk of not matching payments and receipts of trading participants transactions
- Security provided by participants by guarantee or bank letter of credit
- Undrawn amount not to fall below a participant's minimum exposure (calculated by AEMO)

Settlements

- Billing and settlement of transactions managed on monthly basis by AEMO
- AEMO to pay participant or participant to pay AEMO
- Calculation of trading amounts, settlement shortfall charge or surplus, fees, contributions, claims, amounts payable to and from AEMO

Settlements (Cont)

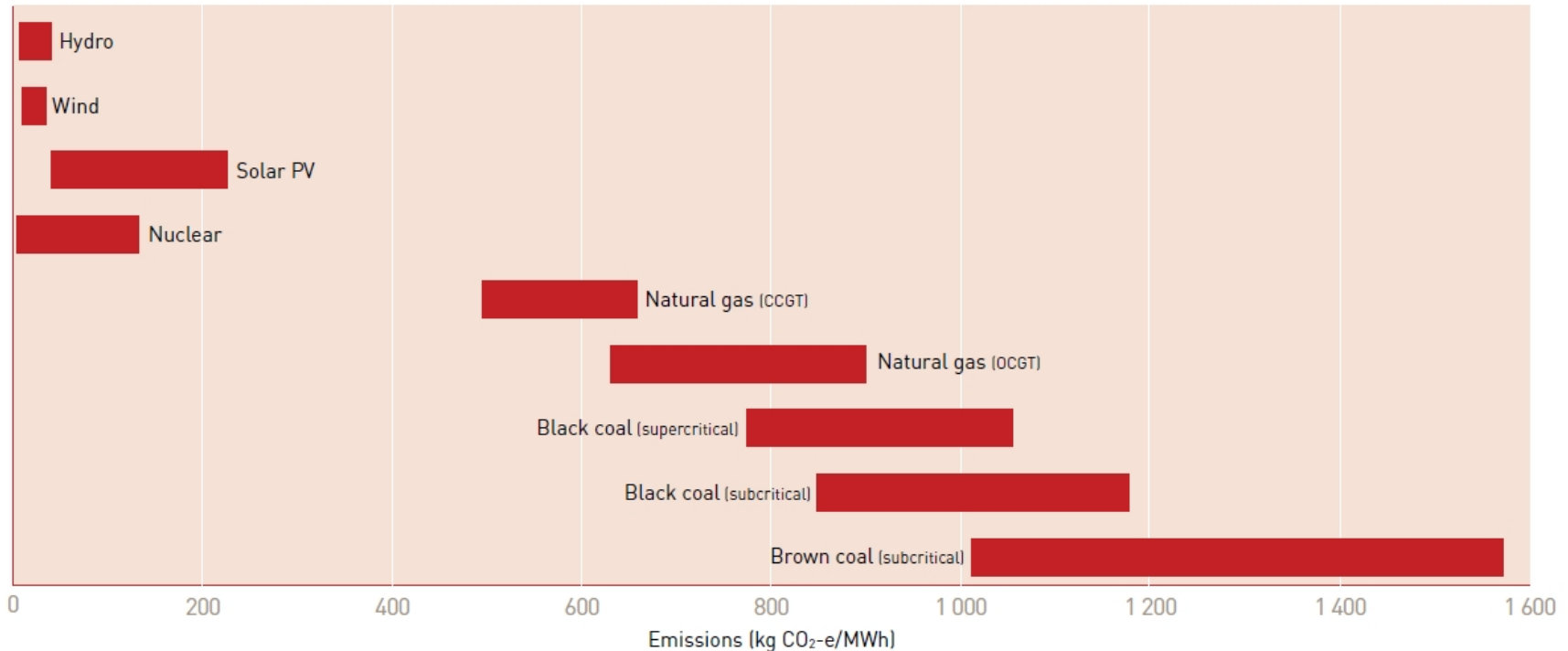
- Payable on 20th business day of each month
- Payments made by electronic transfer
- Can only query or dispute amount for most recently issued settlement statement

STTM reference materials

- Part 20 of Gas Rules available at www.aemc.gov.au
- STTM Publications at www.aemo.com.au

Renewables and carbon: Greenhouse gas intensity

Lifecycle greenhouse gas emissions from electricity generation



Source: Australian Energy Regulator, 2009

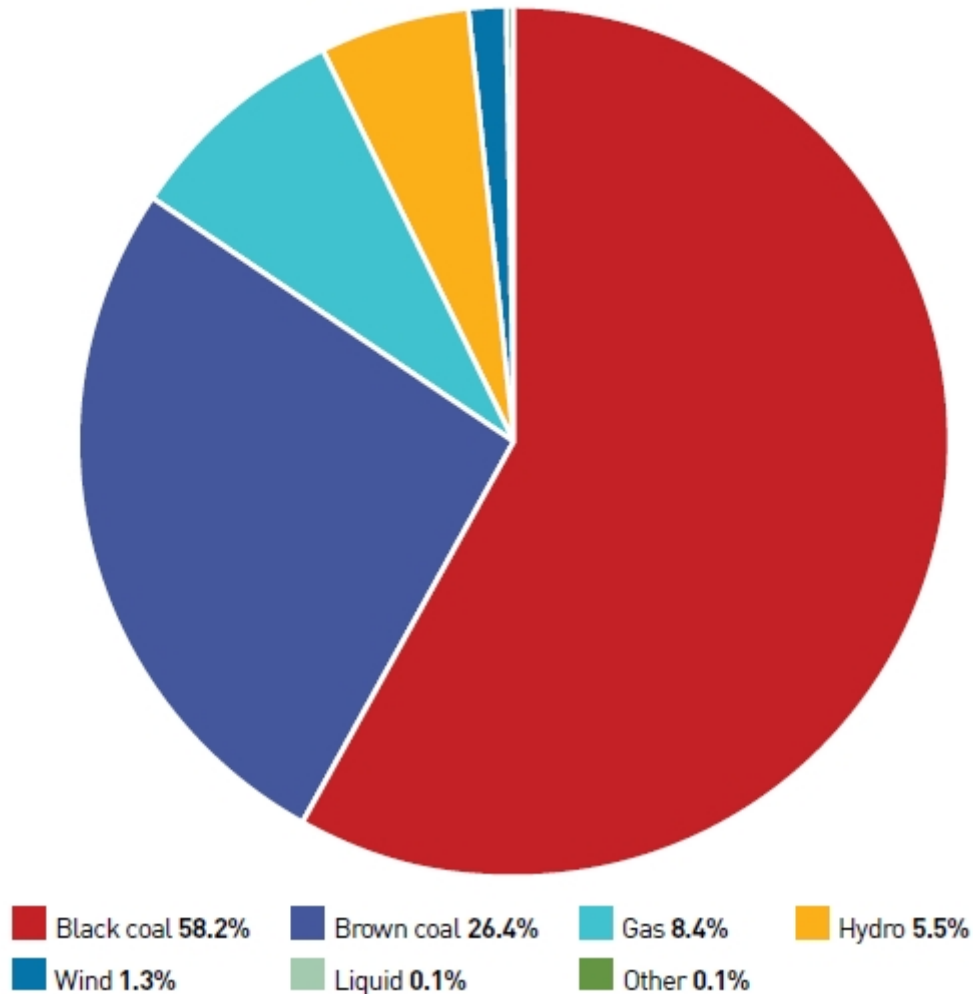
Renewables v Fossil Fuels (Australia)



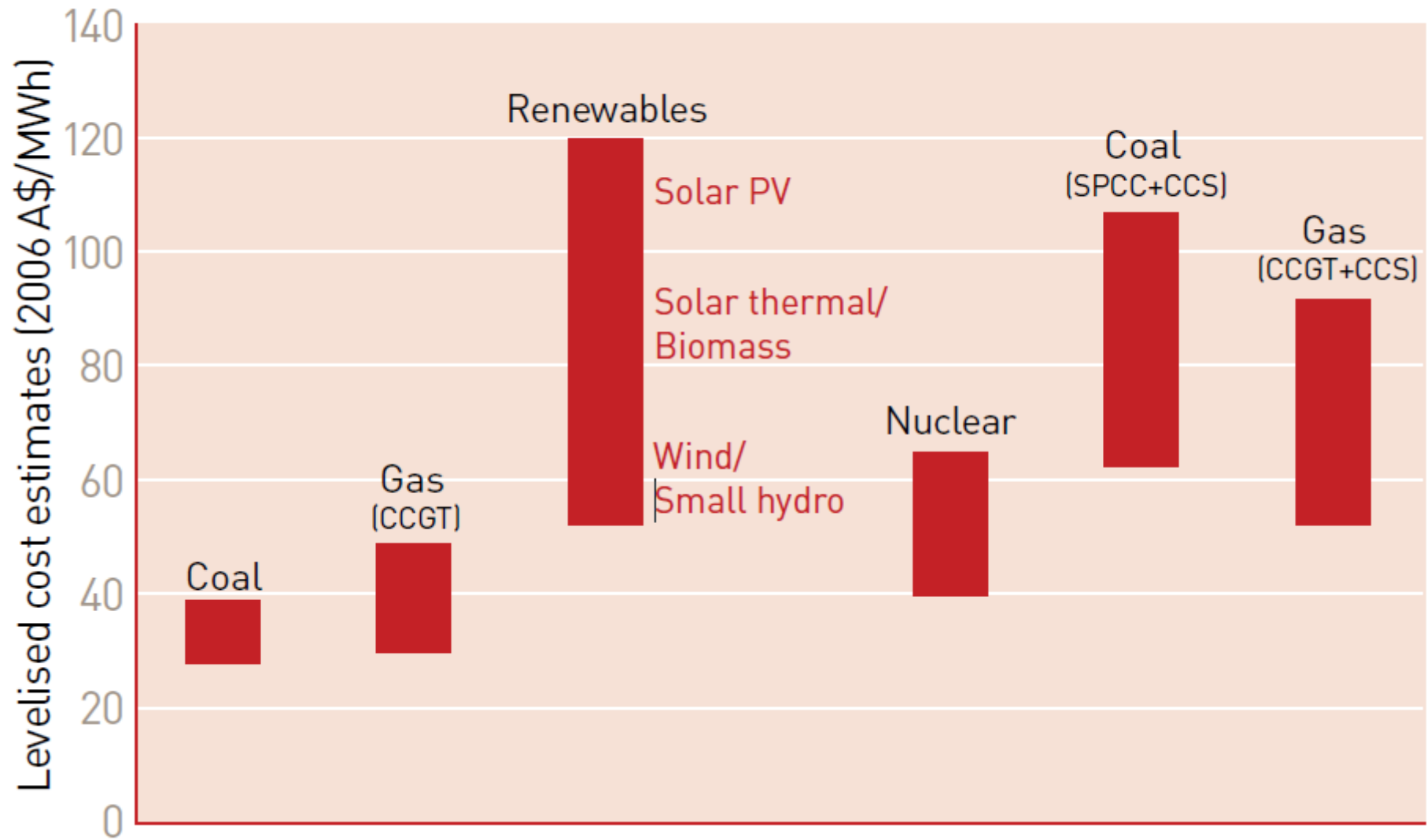
Source	% of output	Source	% of output
Hydro	5.5%	Coal	84.6%
Wind	1.3%	Gas	8.4%
Total	6.8%	Total	93.0%

Renewables v Fossil Fuels (Australia)

Registered generation output, by fuel source—
National Electricity Market, 2009



Lifecycle economic costs of electricity generation



Source: Australian Energy Regulator, 2009

Addressing cost by regulatory intervention: green certificates

- Mandatory Renewable Energy Certificate scheme:
 - since 2001
 - transferable credits for renewable generators
 - power utilities liable to surrender % credits per annum of power sales
 - Split into separate targets and credits for large scale generation (wind farms) vs small scale (households)
 - Solar bonus PV multiplier: 5 x credits

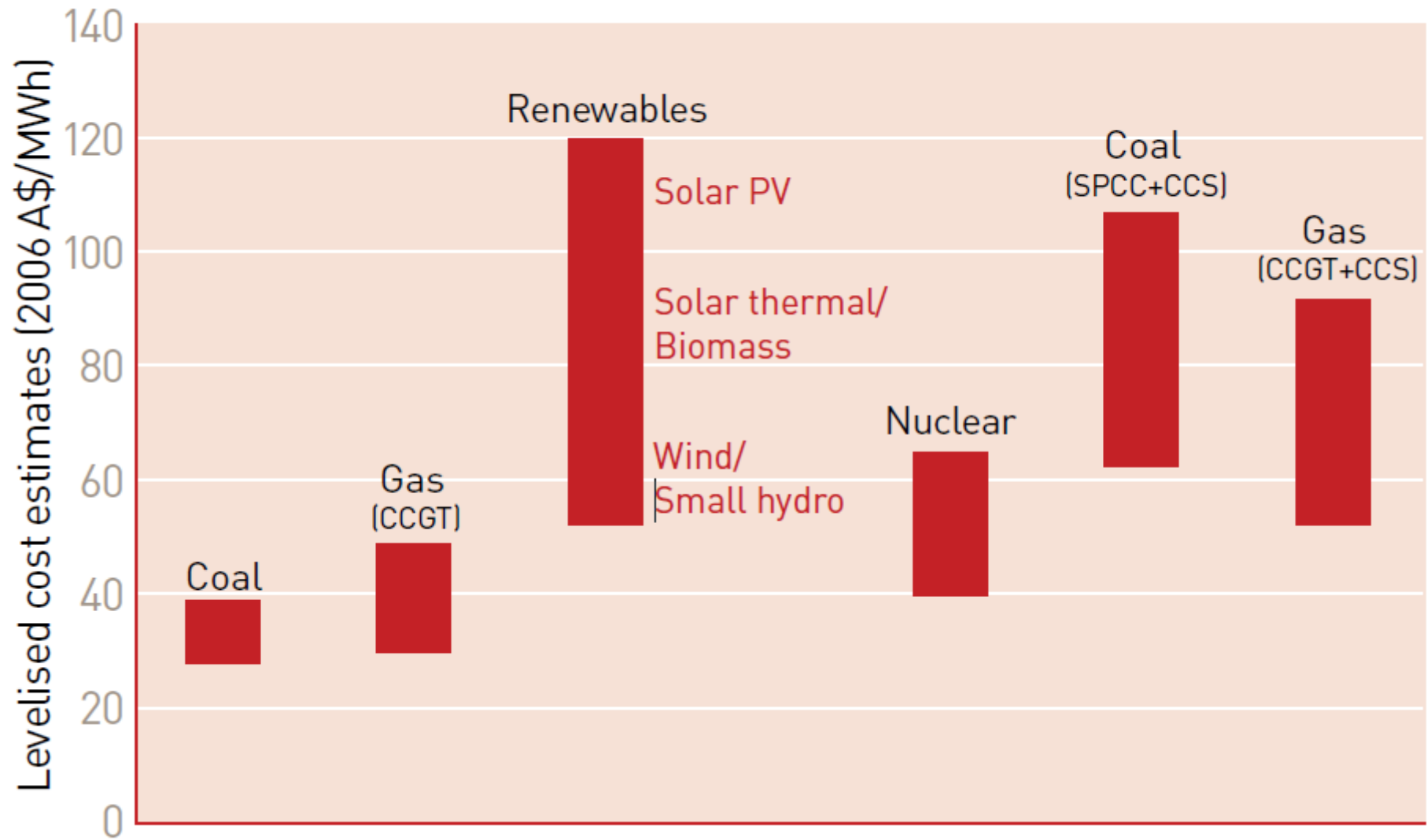
Renewables: Intermittency an opportunity for gas?

- Wind: approx 30% capacity factor
- Solar PV: 25% best, 15% about average
- Negative for price in competitive markets with high volatility

Renewables: Challenges for gas?

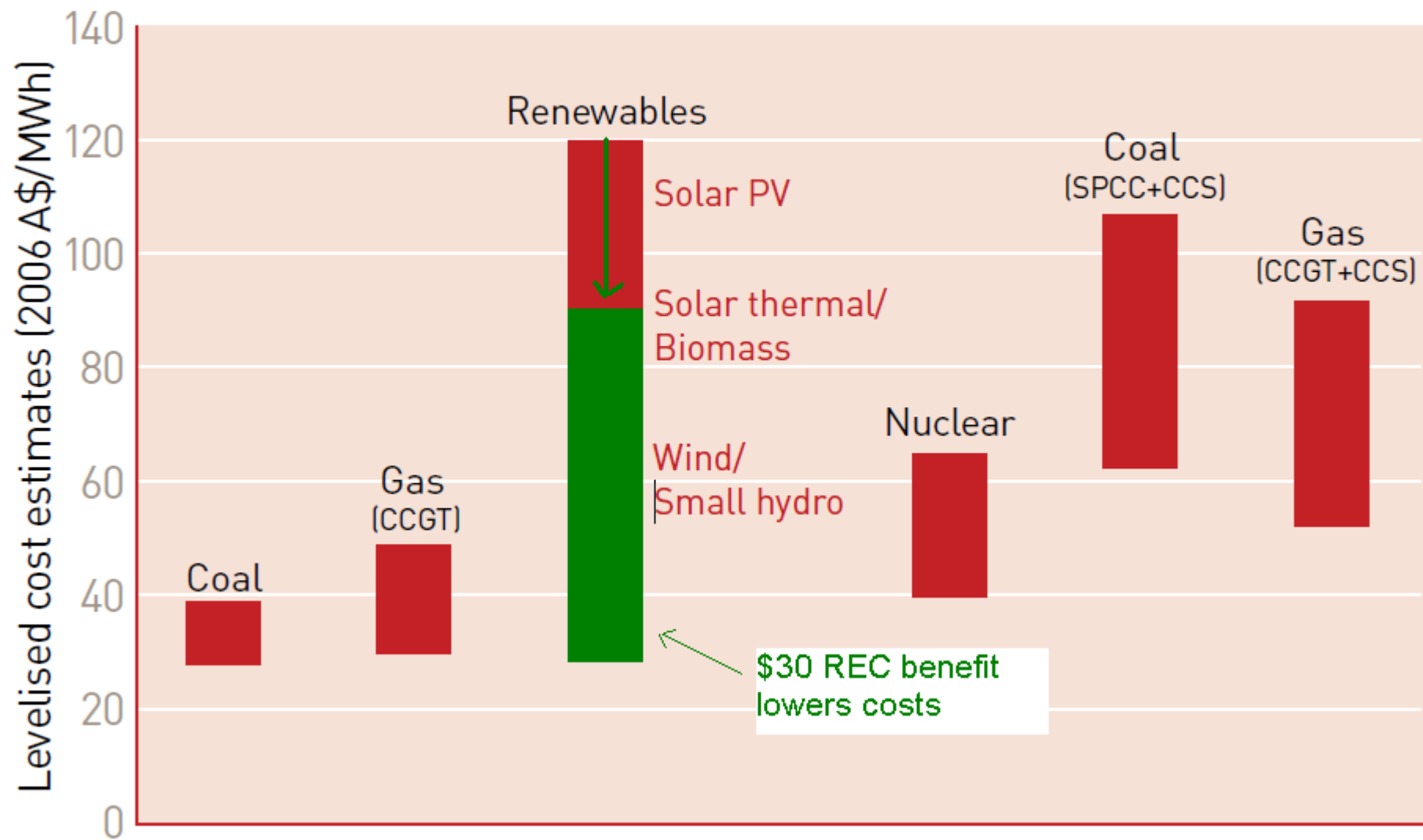
- Congestion / transmission constraints
- Fossil fuels are generating to cover the gap
- Renewable subsidy brings them down to below gas entry price
- Crowding out new entrant peakers?

Lifecycle economic costs of electricity generation



Source: Australian Energy Regulator, 2009

With benefits of REC revenue ...



Australian regulatory position

- Carbon Pollution Reduction Scheme Bill / emissions trading:
 - Failed to pass 3 times.
 - New minority government in Green coalition considering afresh.
- NGERs (greenhouse and energy reporting)
- Renewable energy (with EITE exemption)
- State-based schemes?????

New fossil fuel plants

- Permitting difficulties, challenges
- Commitment to carbon capture and storage “when commercially viable”.
- Commitment to deliver offsets?
- Carbon price lifts coal-fired generation back towards price of gas

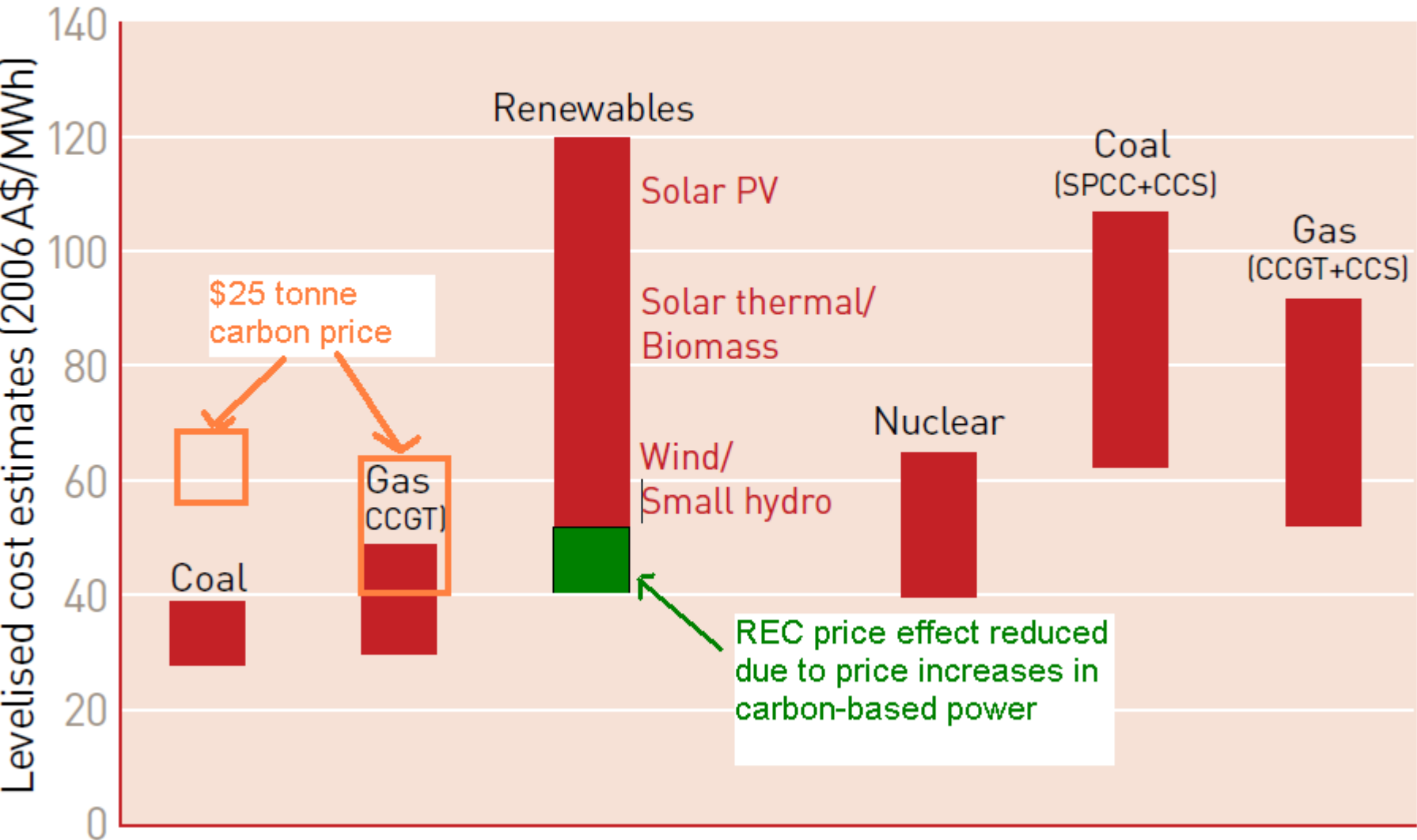
Potential carbon prices

- Border tax on imports
- Tax on mining or production of fossil fuels
- Tax on supply or sale of fossil fuels
- Tax on carbon emissions
- Tax on supply of electric energy produced from fossil sources
- Emissions trading scheme (cap or baseline)

Key difference between carbon tax and emissions trading scheme

- Carbon tax:
 - carbon price set by government
 - no cap on emissions - emit what you can afford
 - no offsets from positive activities or international action
- Emissions trading scheme
 - carbon price set by market (up to a price cap)
 - cap on emissions set by government
 - allows for offsets for positive activities, international action.

Carbon price impact



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