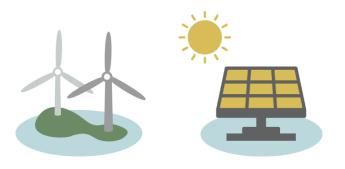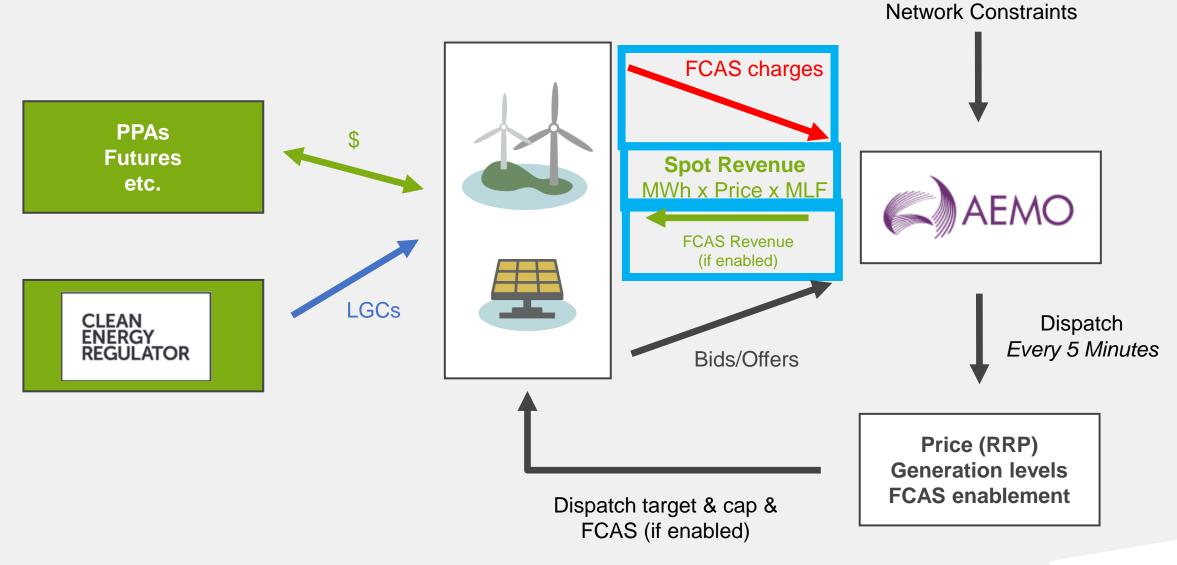# Maximising revenue
– and meeting your obligations

Marcelle Gannon

AEMO Intermittent Generation Forum 7 Dec 2020
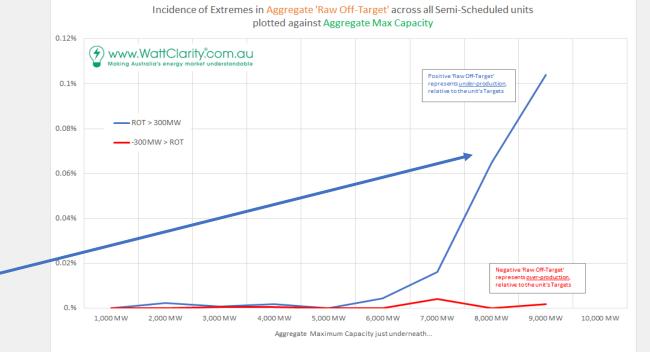
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Manage unfavourable prices

- **Know your market position!**
  - What's the impact of generating in this half-hour vs not generating?
- **Make a decision and rebid**
  - Can't just switch off
  - Enter a compliant rebid reason
  - Check the AER guidelines! These have been revised for 5 minute settlement.
  - New semi-scheduled rule to outlaw reducing generation without rebidding
    - What else is causing under-production?
- **Respond to the dispatch instruction**
  - Non-compliance (4.9.8(e)) vs non-conformance
  - 24/7 obligations
    - to maintain dispatch systems
    - have personnel to keep AEMO informed and respond to AEMO's enquiries and instructions

Incidence of Extremes in Aggregate 'Raw Off-Target' across all Semi-Scheduled units plotted against Aggregate Max Capacity

www.WattClarity.com.au
Making Australia's energy market understandable

Positive 'Raw Off-Target' represents under-production, relative to the unit's Targets

ROT > 300MW

-300MW > ROT

Negative 'Raw Off-Target' represents over-production, relative to the unit's Targets

Aggregate Maximum Capacity just underneath...

http://www.wattclarity.com.au/articles/2020/07/semischeduled-aggrot-extrapolation/

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Manage FCAS costs

- **Look out for high contingency raise FCAS costs**
    - Depends on your share of market/region generation
    - Might want to rebid – can't just turn off

- **Look after the Causer Pays Factor**
    - Depends on the accuracy of output tracking dispatch targets and supporting of system frequency
    - You can improve the dispatch accuracy!

- **Improve the dispatch accuracy by fixing the SCADA**
    - Compliance obligation to have working SCADA
    - Bad stuff can happen if you don't:
        - Sustained offset (bad for CPF!) if Local Limit isn't correct. Talk to the Operational Forecasting team about this.
        - Nasty oscillations and/or uncontrolled ramp-up (bad for CPF)
        - Getting stuck under a constraint (bad for generation)

- **Improve the dispatch accuracy by self-forecasting**
    - Make it work correctly
        - Not just a mathematical game. There's often a feedback loop over multiple dispatch intervals.
        - A "UIGF" is "Unconstrained". Even when the turbines are paused.

http://www.wattclarity.com.au/articles/2020/02/dont-forget-about-fcas/

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Self-forecasting – get it right!

What the forecast should have done?

Understand and manage constraints

- **Network constraints are everywhere**
  - System strength
  - Transmission line thermal limits
  - Stability constraints
  - Temporary constraints due to network outages
- **Which ones affect your plant?**
  - Curtailing your generation?
  - Increasing your generation?
- **May need to bid differently**
  - Can have a "Local Price" due to constraint effects
- **Know your MMS data**

N^^N_NIL_3
Out= Nil, limit power flow on line X5 from Balranald to Darlington Point (X5) to avoid voltage collapse for contingency trip of Bendigo-Kerang 220kV line in NW Victoria

	Factor	Id	Term
▶	+1.000	LIMOSF21	Limondale 2 solar farm
	+1.000	LIMOSF11	Limondale 1 solar farm
	+1.000	SUNRSF1	Sunraysia 1 solar farm
	+0.6665	BROKENH1	Broken Hill Solar Farm
	+0.6665	STWF1	Silverton wind farm
	+0.5197	KARSF1	Karadoc Solar Farm
	+0.5197	YATSF1	Yatpool Solar Farm
	+0.4487	BANN1	Bannerton solar farm
	+0.4487	WEMENSF1	Wemen Solar Farm
	+0.3952	KIAMSF1	Kiamal Solar Farm
	+0.2706	MUWAWF1	Murra Warra Wind Farm stage 1

Equation LHS Terms

…. (lots more)

http://www.wattclarity.com.au/articles/2020/11/casestudy-x5-constraint/

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One final obligation – forward availability

- **Forward forecasts are also important**
  - Doesn't directly affect **your** dispatch outcome **BUT:**
    - Affects accuracy of pre-dispatch forecasts and prices
    - Particularly affects decision making of batteries and slow-start plant
    - Also impacts bidding around negative prices, including auto-bidders

- **Compliance obligation**
  - Update the AEMO portal with turbine/inverter outages and/or plant level limits
  - Update this **as soon as you know** - your best guess is better than none
  - Phone the AEMO control room as well if it's something sudden and major

- **Play your part in being a "good citizen" of the NEM**

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