Cutting Your Gas Bill: Efficiency Guide for Manufacturers

AiGROUP

energy efficiency COUNCIL

CEFC
CLEAN ENERGY FINANCE CORP

Welcome: Our presenters

Tennant Reed
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Housekeeping

- **Questions** via the chat box at anytime
  - ➢To the right of your screen

- **Technical Support**
  - ➢Scroll down to consult our troubleshooting tips
  - ➢Call the **web helpdesk** on **1300 55 66 77** – Option 3

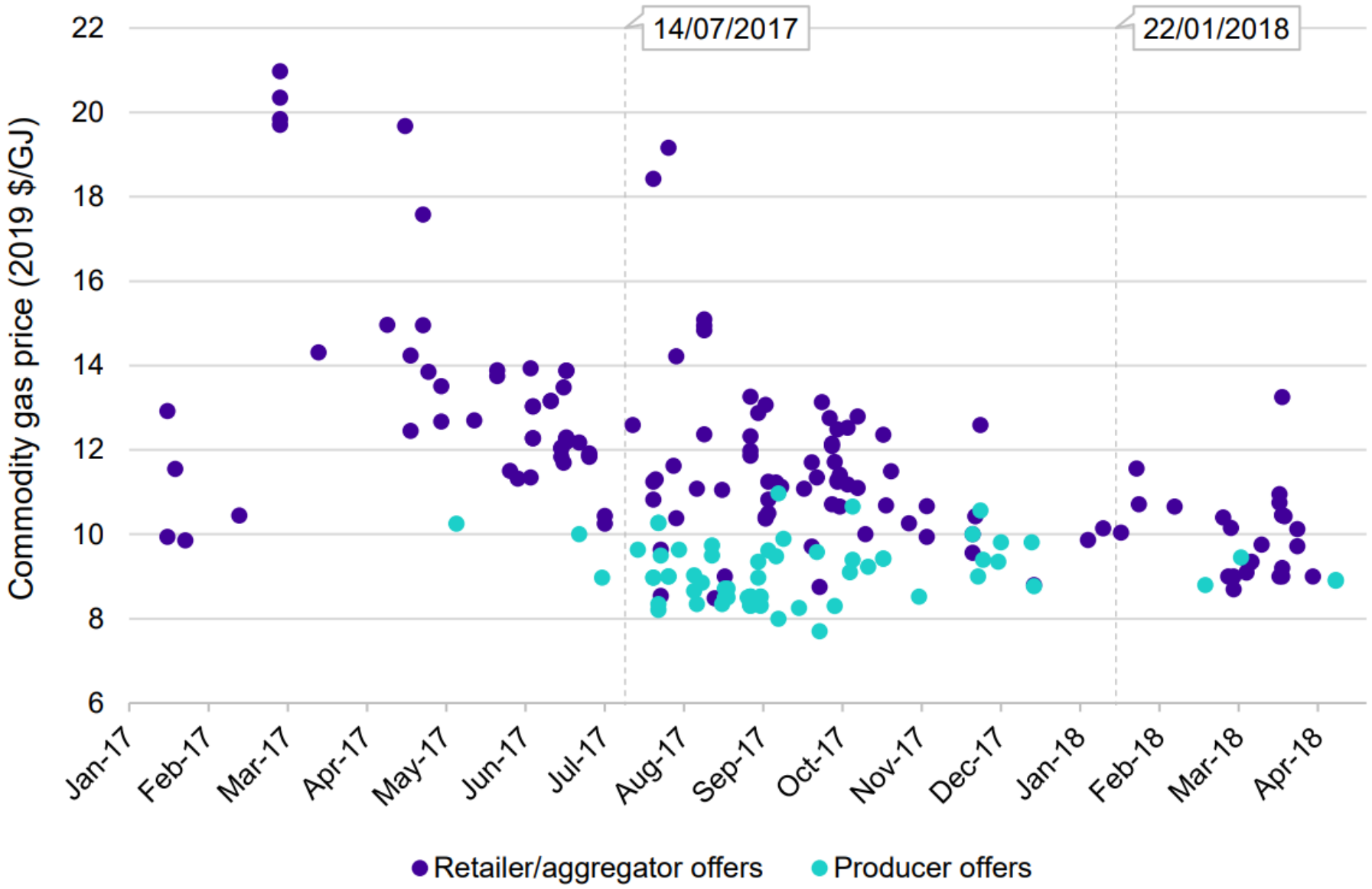
- **Mobile access:** https://www.aigroup.com.au/live/mobile

- **If all else fails… A copy** of the presentation will be available tomorrow

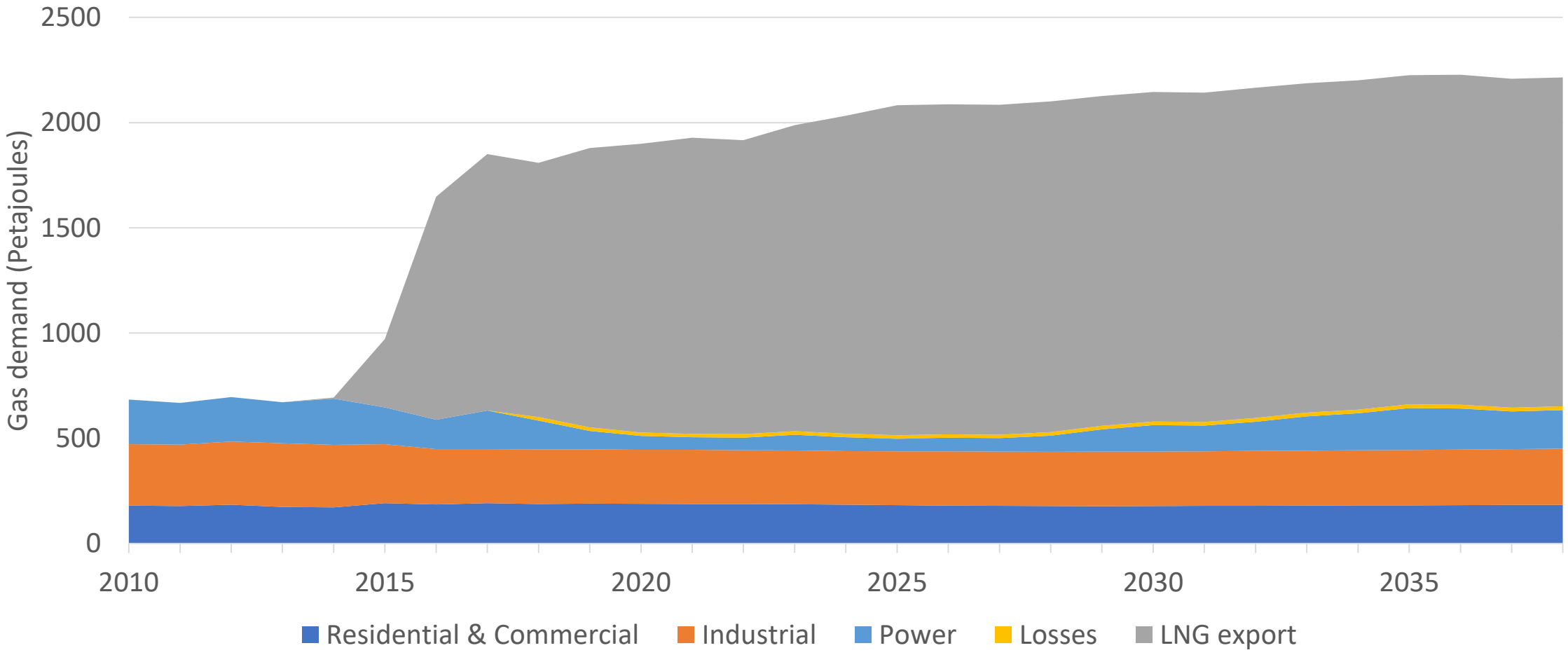
Gas price context

Tennant Reed

ACCC lagging data shows fade in extreme gas prices of 2017

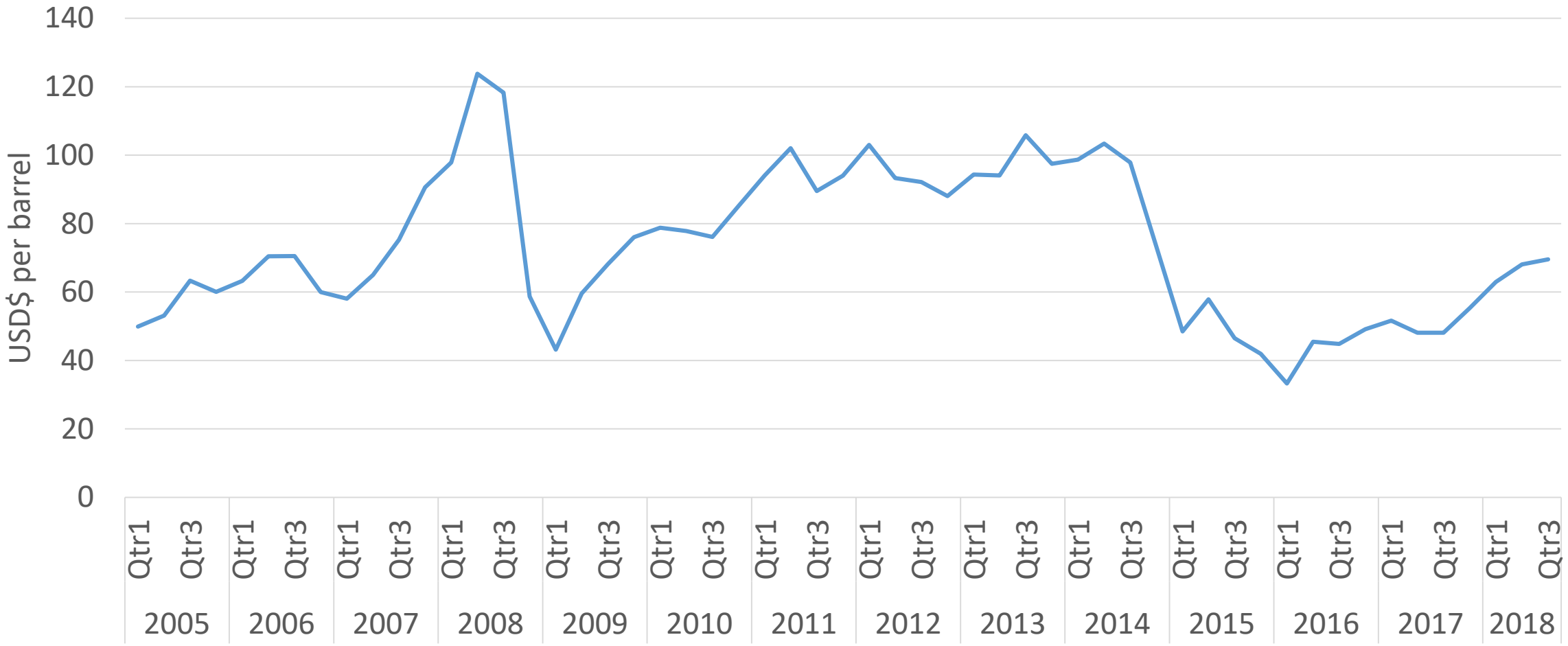


LNG exports are the dominant factor in Eastern gas market



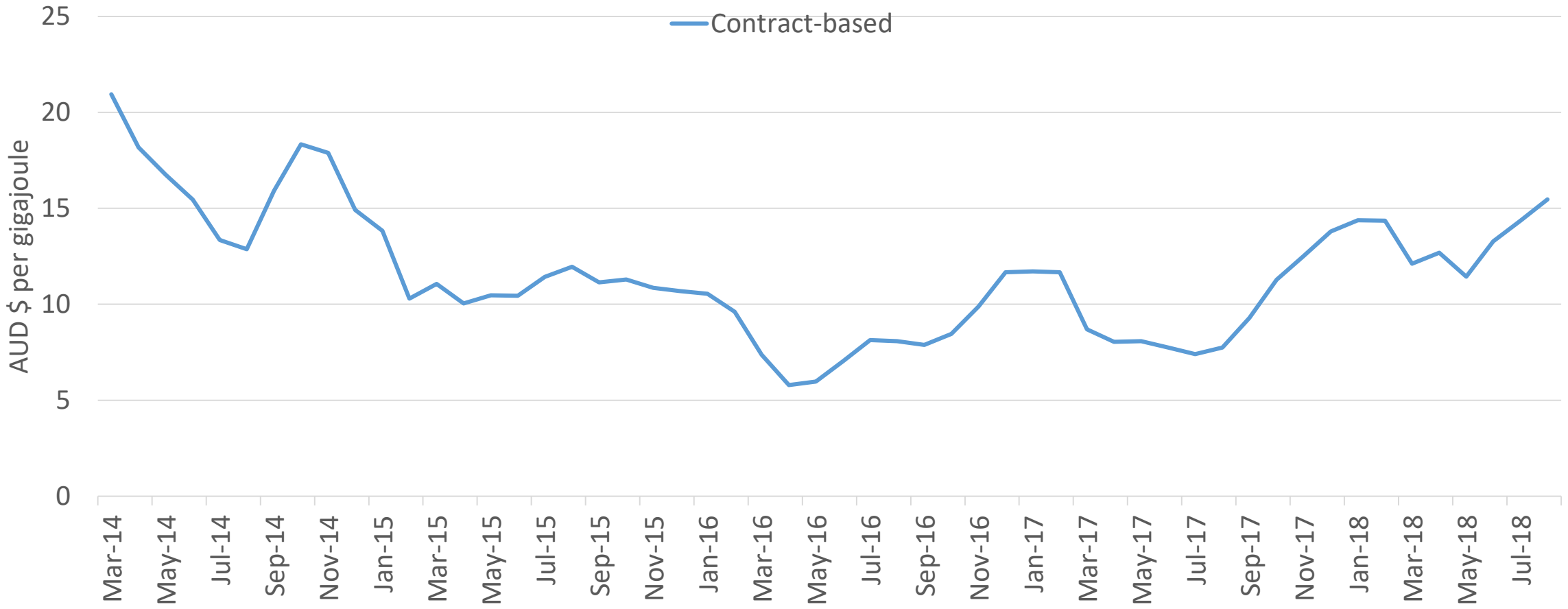
Source: AEMO

Oil prices are recovering…

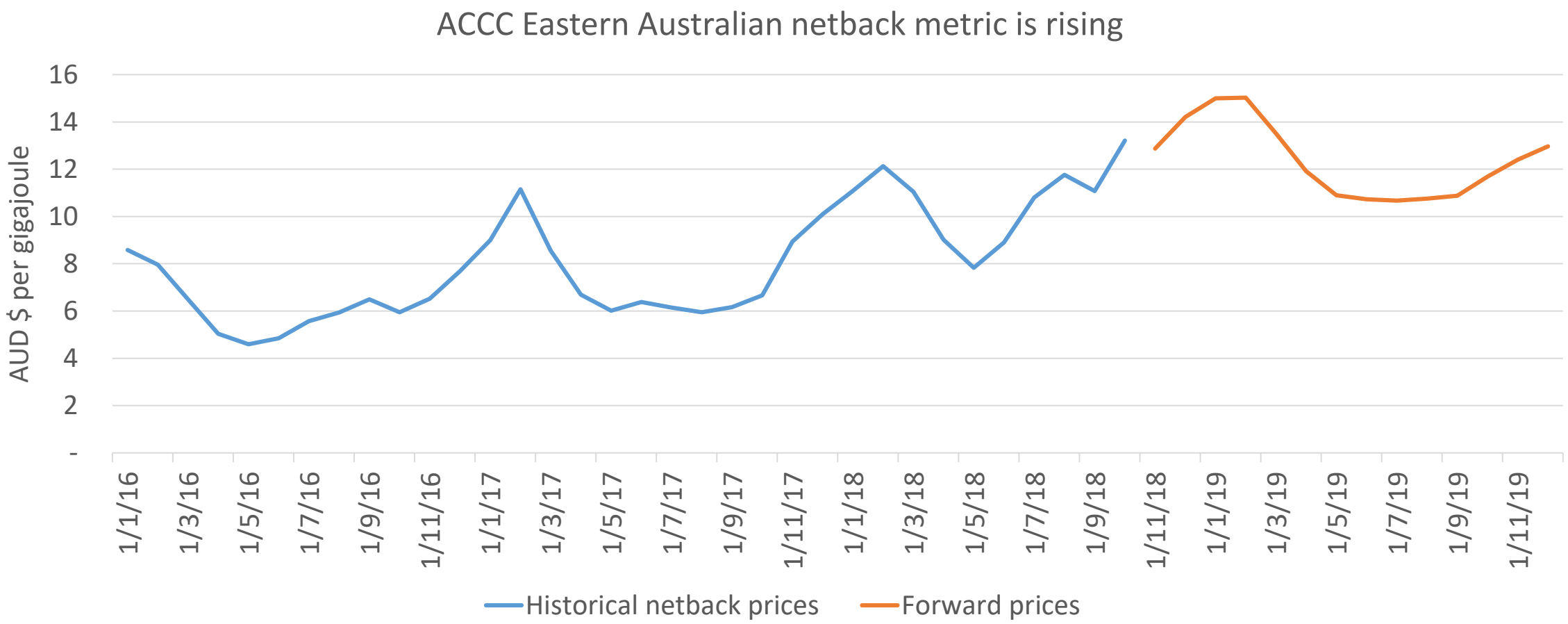


Source: US Energy Information Administration

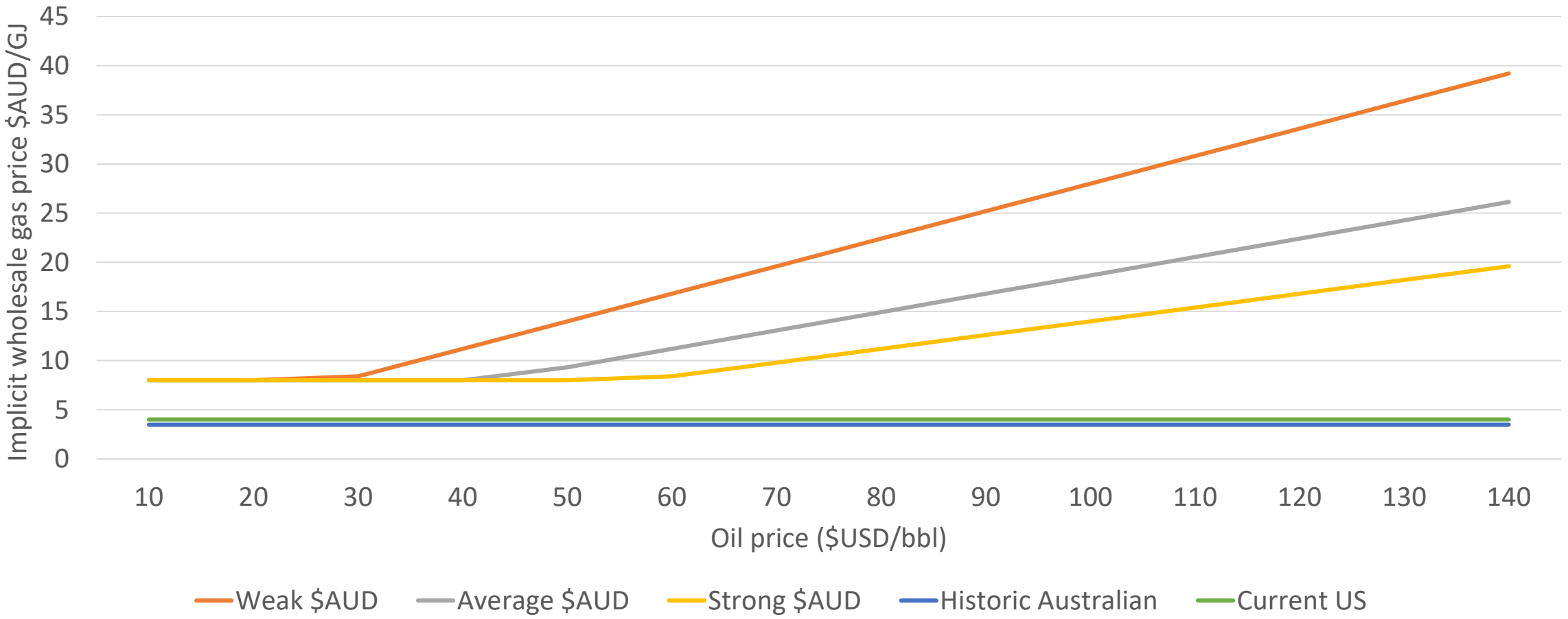
… so Japanese spot LNG prices are rising…



… and ACCC metric of east Australian netback gas price is rising too



Oil linkage (and production costs) imply high prices in future



Source: Ai Group

Thank you

Contact Tennant Reed for further questions or comments:

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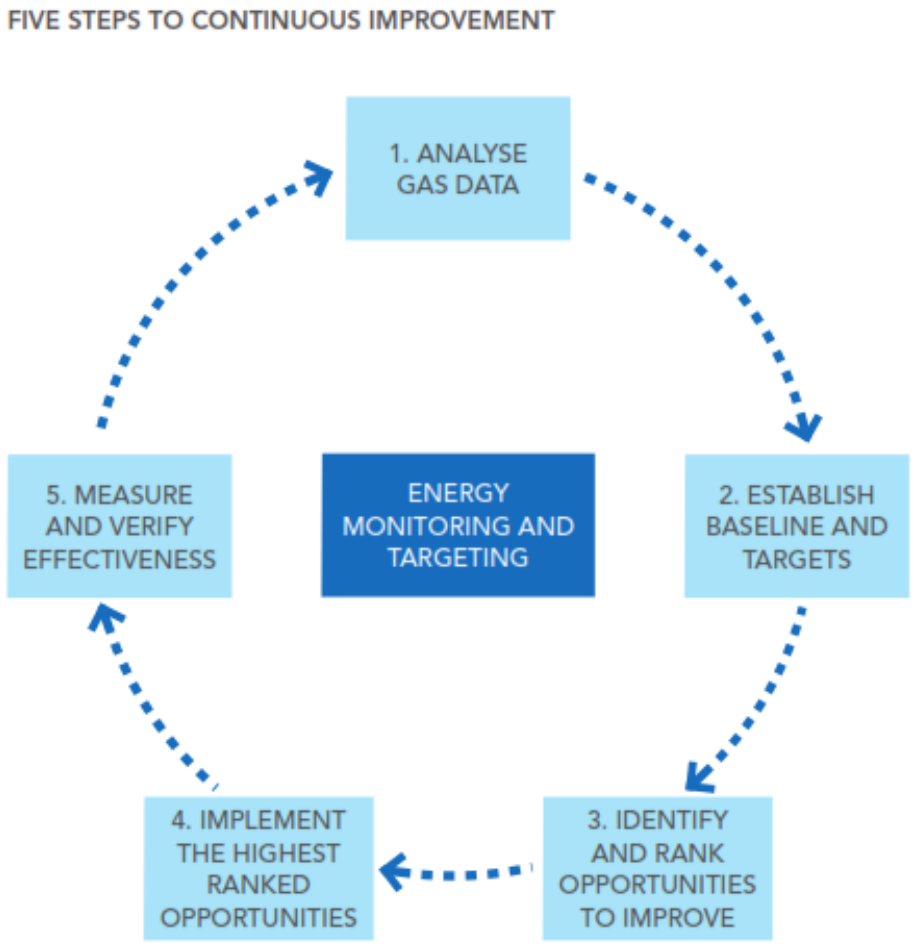
Gas efficiency opportunities

Michael East

Implementation Process



1. **Measurement & Analysis**
    - Gas meter on loads greater than 10%
    - Provides actual data vs. nameplates or estimates
2. **Set Baseline & Targets**
    - Understand the outputs of the system and how these drive energy (input)
3. **Identify & Rank Opportunities**
    - Financial ranking (SPB, NPV)
    - Quick wins
    - Biggest energy/cost reduction
4. **Implement Viable Projects**
    - Multi-disciplinary team
    - Consider the continuous improvement strategy
5. **Measurement & Verification of Success**
    - Normalised comparison to baseline and targets
    - On-going monitoring – set alarms and alerts.

The key success factor to energy reduction is quality data.

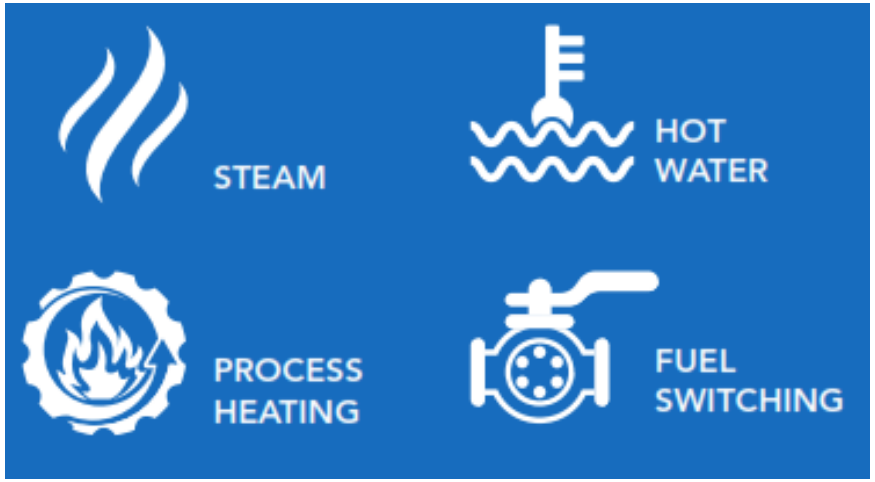
Gas Opportunities

What are you using gas for and does it need to be done this way?

Can you eliminate gas use through alternate technologies or fuel sources?

Can heat recovery be used to as a energy input?

What is the longevity of natural gas?

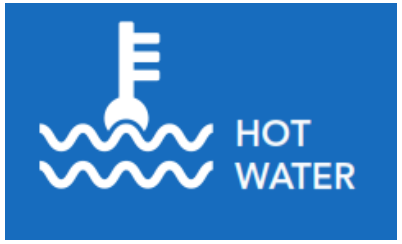


Helpful Hints:

- Question your energy use
- Consider the system rather than the equipment
- Equipment supplier/Service providers may not provide the best solution
- Eliminating energy use should be considered before energy efficiency

Typical Gas Efficiency Projects

- Flash steam recovery
- Steam Traps and Condensate return
- TDS Blowdown
- Maximise feedwater temp
- Insulation
- Economiser



- Hot water heater controls
- Condensing Boiler/hot water heater
- Insulation

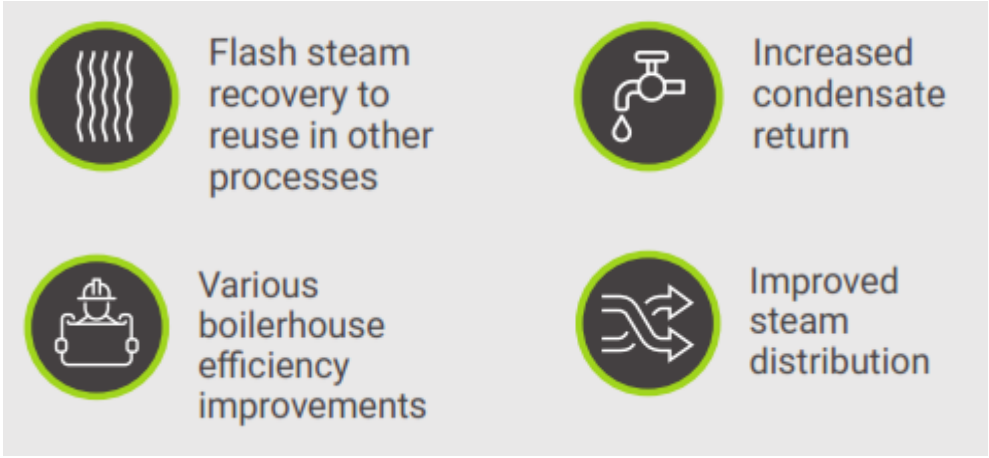
- Combustion Tuning/Automated Controls
- Combustion Air Preheat
- Burner Upgrade
- Process Temperature Adjustment
- Process Control Adjustment

- Bio-Fuels
- Solar Thermal
- Solar Hot Water
- Solar PV & Heat Pumps

Case Study: Abattoir and Meat Processor

Background
- Three steam boilers – two operational
- Multiple value add products from the site
- Initial opportunity was Blowdown heat recovery
- Steam expertise quickly identified additional opportunities

Solution
- TDS sensor based blowdown
- Blowdown heat recovery – both flash steam and residual heat
- Condensate recovery
- Replacement feed tank and de-aerator
- Flash steam recovery
- Tallow tank temperature control
- Boiler set point adjustment



THE RESULT

$45K
Approximate gas savings per month

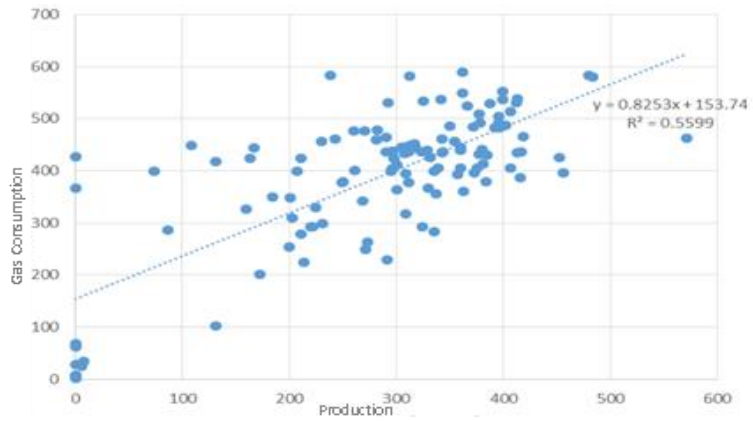
12 months or less
Payback on projects based on gas savings

8ML
Reduction in boiler water consumption per annum

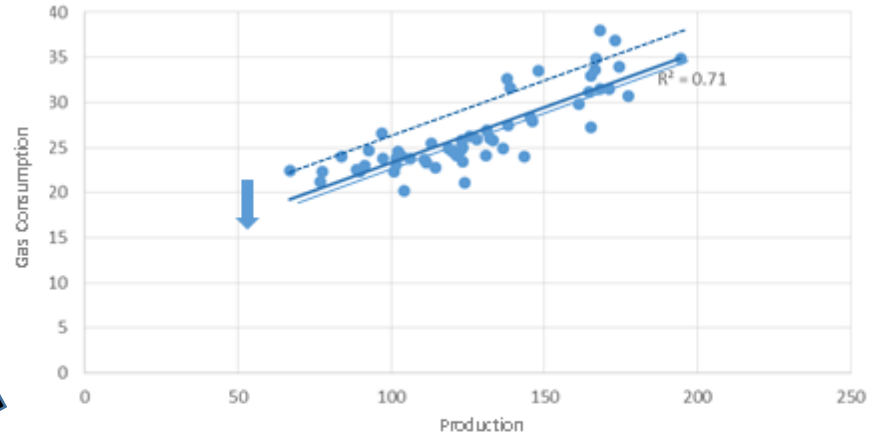
$10K-$15K
Reduced chemical use per annum

+
Additional hot water available for site use

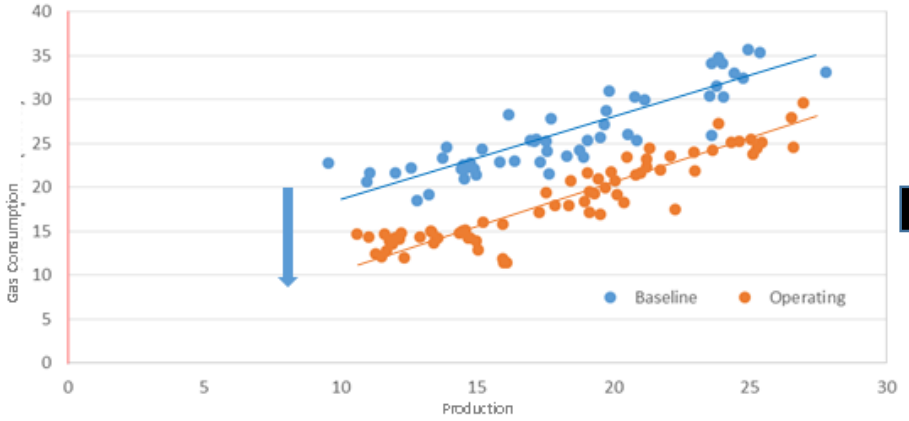
Strategy for Continuous Improvement



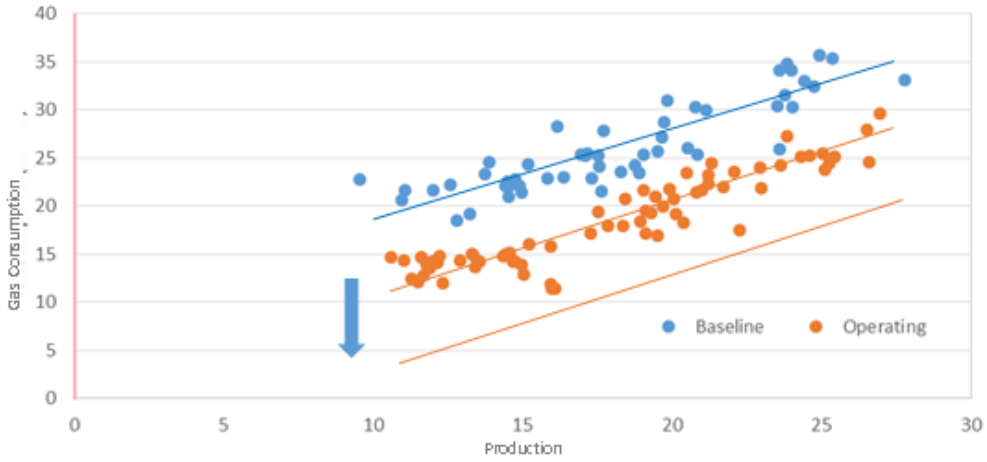
Baseline Scenario



Stage 0: Good Housekeeping

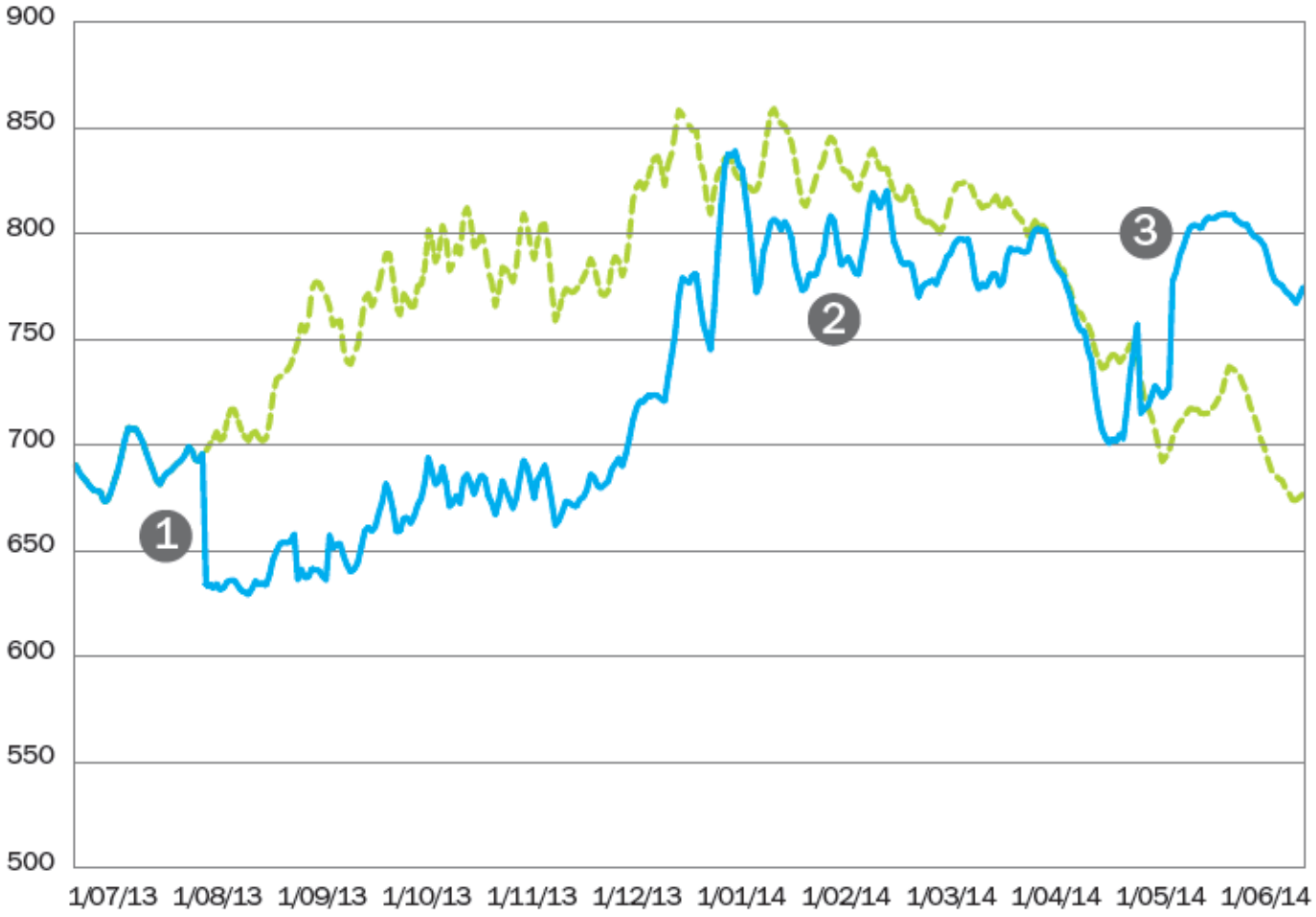


Stage 1: Medium-Term Payback



Stage 2: Long-Term Payback

Example: Maintaining Savings



1. Controls Project Implemented
2. Component Failure – Savings greatly reduced
3. Control Logic Changed – Now consuming more energy than the baseline scenario

Ongoing Measurement & Verification through data is CRITICAL

Getting started

Luke Menzel

Getting started

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Getting started…

1. Connect with an expert
2. Consider your finance options
3. Tap into other resources

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1. Connect with an expert

- Talk to your peers
- Clarify your capability requirements
- Look for runs on the board

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ESSENTIAL SKILLS FOR **ENERGY EFFICIENCY PROJECTS: TOP 10**

1. Leadership and project management - ability to effectively lead and manage a gas efficiency or fuel switching project in its entirety, from scoping through to completion.

2. Energy consumption, assessments and analysis - understanding of energy consumption, collection, billing, modelling and analysis, and ability to oversee energy assessments and audits.

3. Measurement and verification of energy savings - ability to oversee a robust process for measurement and verification of energy savings.

4. Business case development and project justification - ability to undertake cost benefit analysis and develop business cases.

5. Client procurement options - ability to advise clients on the procurement models available, and the most appropriate model for a given project.

6. Interdependencies between systems and processes and managing operational impacts - ability to ensure integration between systems and processes whilst managing the operational impact of a gas efficiency or fuel switching project.

7. Energy efficiency, fuel switching and generation technologies - understanding of energy efficiency, fuel switching and generation technologies, systems and processes.

8. Commissioning and tuning - ability to ensure equipment is appropriately commissioned and tuned.

9. Risk management - ability to effectively manage the risks associated with a gas efficiency or fuel switching project.

10. Stakeholder engagement - ability to effectively manage the stakeholders associated with a gas efficiency or fuel switching project.

2. Consider your finance options

- Get across energy specific financing
- ARENA funding innovation
- CEFC partnerships

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CEFC FINANCING FOR ENERGY EFFICIENCY

CEFC finance is available (generally anywhere between $10k - $5.0m) for not-for-profits, small-medium businesses and processors through aggregation programs developed with banks and other financiers.

For eligible equipment, an interest rate discount is available for clean energy and energy efficient upgrades, programs include:

- Commonwealth Bank Energy Efficient Equipment Finance Program
- NAB Energy Efficient Bonus Program
- Westpac / St George / Bank SA Energy Efficient Financing Program
- ANZ Energy Efficient Asset Finance Program

Other financing options that may be relevant for manufacturers include:

- An Environmental Upgrade Fund, supported by CEFC finance and administered by Eureka Real Assets, providing Environmental / Building Upgrade Agreements to building owners (including **manufacturers**) for clean energy retrofits in selected local council regions across NSW, Victoria and South Australia;
- RateSetter's Green Loans for green product purchases which are supported by CEFC finance

More information is available at www.cefc.com.au/assetfinance

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3. Tap into other resources

- Key documents
- Leverage industry networks
- State based programs, funding, advice

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ACT

actsmart.act.gov.au

NSW

environment.nsw.gov.au/business

QLD

business.qld.gov.au/running-business/energy-business

SA

sa.gov.au/topics/energy-and-environment/using-saving-energy/for-businesses

VIC

victorianenergysaver.vic.gov.au/training-and-support-for-business

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More information:
energybriefing.org.au

Connect with an expert:
eec.org.au/members

Questions

Thank you

Contact Tennant Reed for further questions or comments:

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From here…

A copy of today's presentation will be available within 3 business days

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