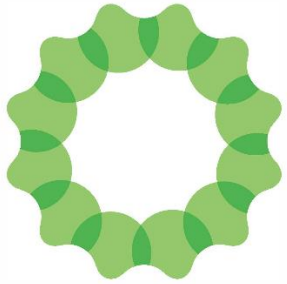

efficientsee®

the way to a better future.

Introduction

Three main goals for today is to answer the questions;

1. What is strategic energy management?
2. Why do I care?
3. How can I reap the benefits?

Company: **EfficientSee Pty Ltd**

Founder: **Quentin Roberts**

Established: **2009**

Head Office: **Tonsley Innovation Precinct**

Winery Experience:

- **Lindeman's**
- **Stonehaven**
- **Mildara Blass**
- **Patritti**
- **Coriole**
- **Revenir**
- **Peter Lehmann**

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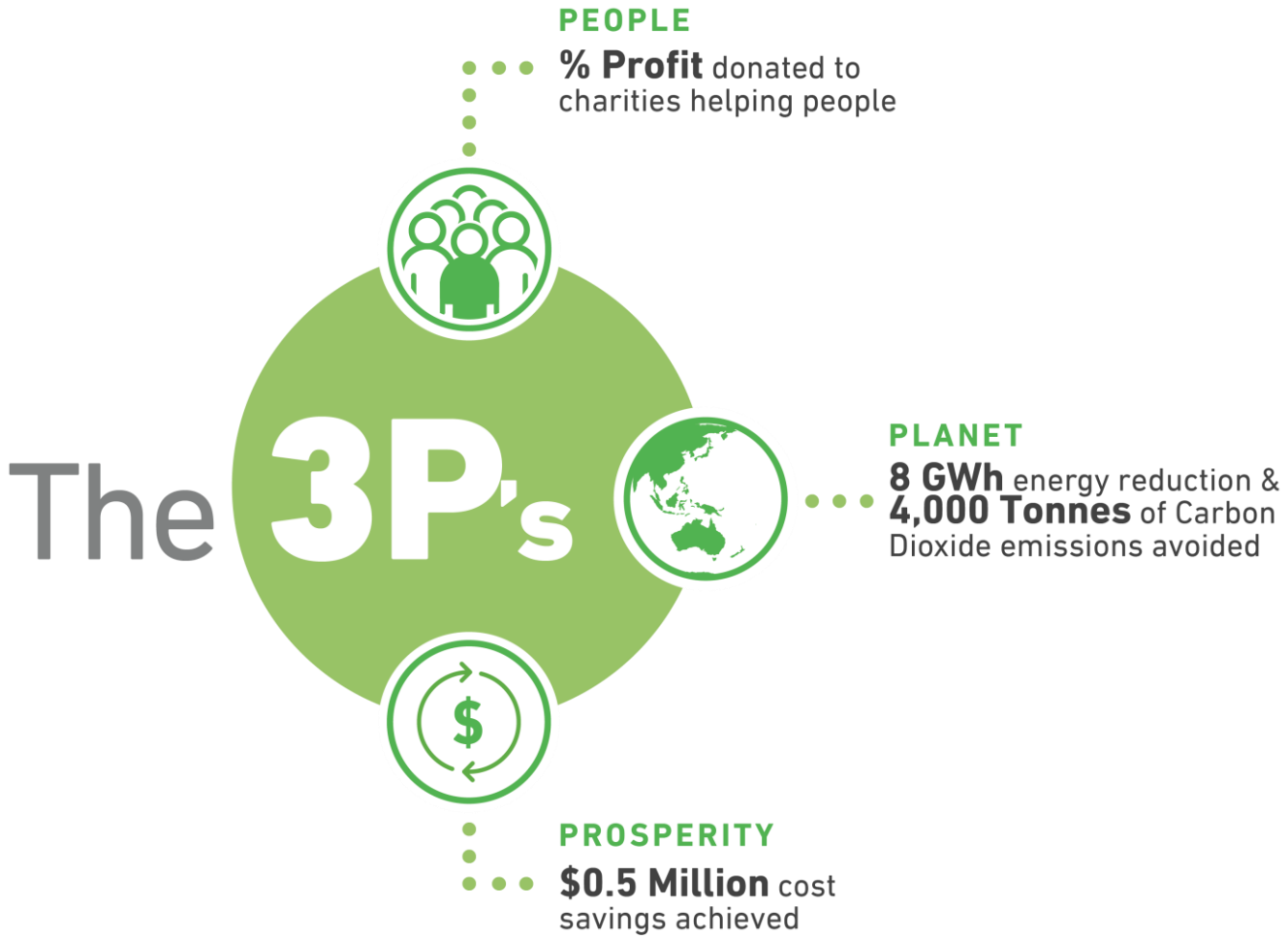
What drives us



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Tonsley
Innovation District

TONSLEY FUTURE ENERGY CONSORTIUM (TFEC)

Independent Energy Services Alliance (IESA)

BRINGING TOGETHER AUSTRALIA'S LEADING ENERGY SERVICE AND SOLUTIONS PROVIDERS TO BRING POSITIVE CHANGE TO AUSTRALIA'S ENERGY FUTURE.

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WHAT WE CAN DO… ALL THINGS ENERGY

- Electricity/Gas Procurement
- Tariff Optimisation
- Feasibility Studies / Business Case Development
- Load Studies / Data Logging
- Power Quality Assessments Harmonics etc.
- Compressed Air Systems
- Power Factor Correction
- New Connections Gas/Electrical
- Lighting Upgrades
- Motor Upgrades
- VSD Applications
- Harmonics Filtering
- Demand Management
- Demand Response
- Boiler Optimisation
- Refrigeration Upgrades
- Process Improvements
- Machine Upgrades
- Automation
- Electrical Upgrades/Improvements
- Large Scale Solar PV >100kW
- Battery Storage
- Off-Grid Applications
- On-site Generation
- Data Collection
- Data Visualisation
- Data Analytics - Historical
- Data Analytics - Predictive (Machine Learning)
- Measurement & Verification
- SCADA
- Switchboard Manufacture
- Integration of Generation Systems
- Energy Monitoring
- Strategic Energy Management (ISO 50001)
- Peak-Lopping/Load Shedding controls
- Industry 4.0 Solutions
- Tariff Optimisation
- SA Power Networks negotiations
- Electricity Generation
- Retail as a Service
- And more…

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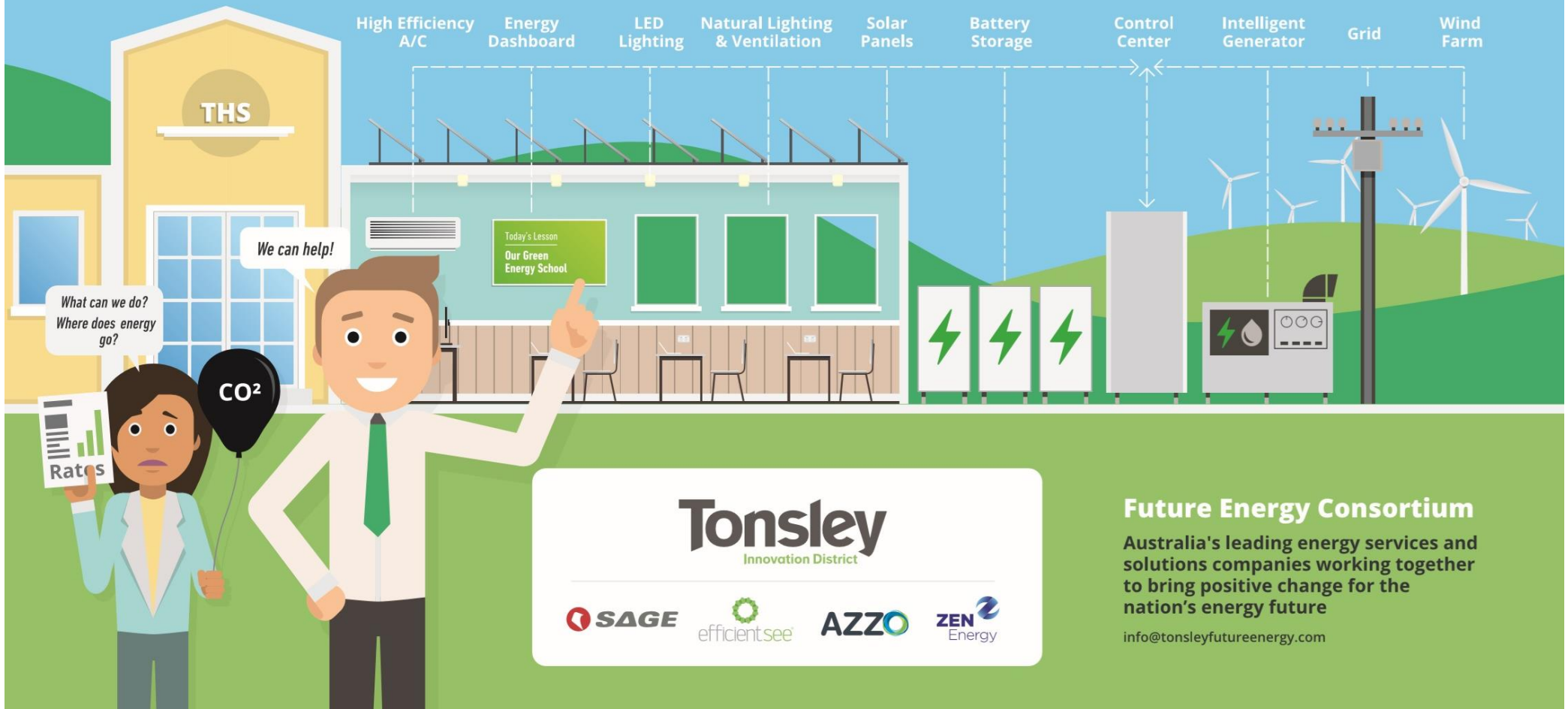
The future of energy thanks to Tonsley

EfficientSee
Strategic Energy Management

SAGE Group
Energy Control & Monitoring

AZZO
Metering Data & Control

ZEN
Renewable Energy Systems



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Innovation District

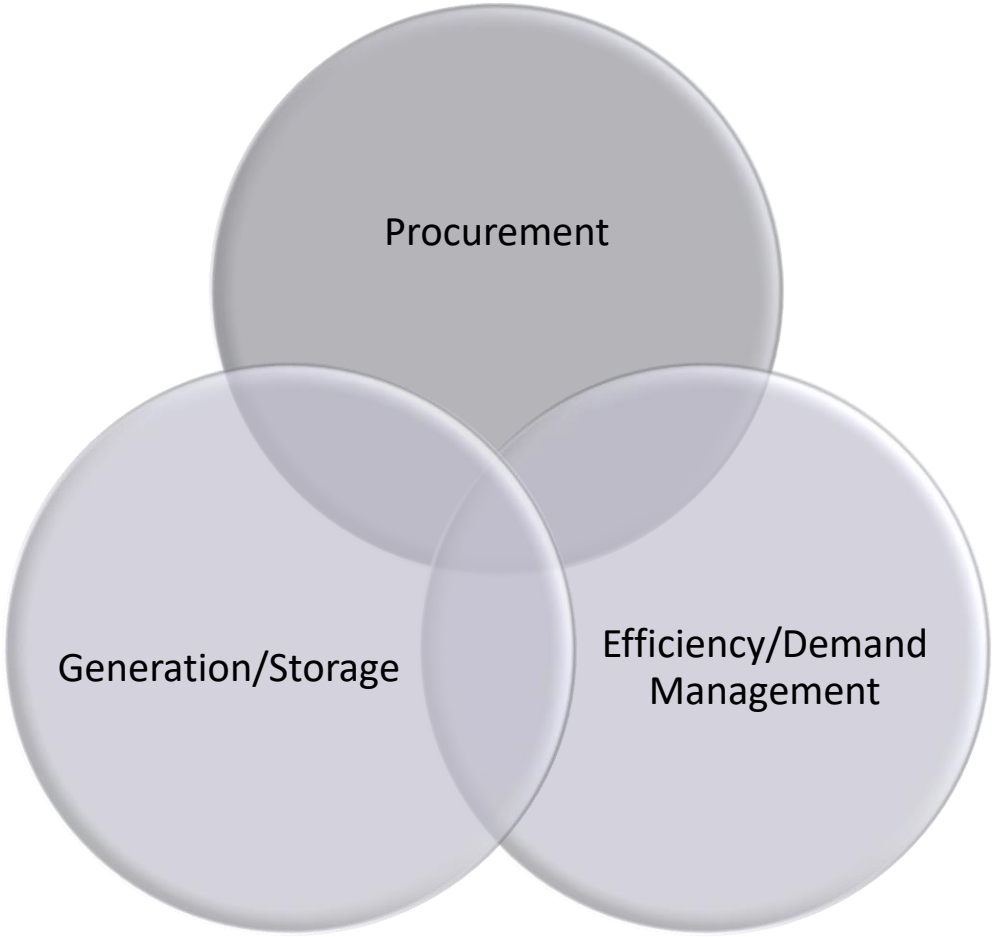
SAGE efficientsee AZZO ZEN Energy

Future Energy Consortium

Australia's leading energy services and solutions companies working together to bring positive change for the nation's energy future

info@tonsleyfutureenergy.com

What is Strategic Energy Management?



Energy management encompasses energy efficiency and productivity, but also considers the broader elements of energy including procurement, generation, systems.

The strategic element comes in when planning what opportunities should be undertaken in what order and for what benefit.

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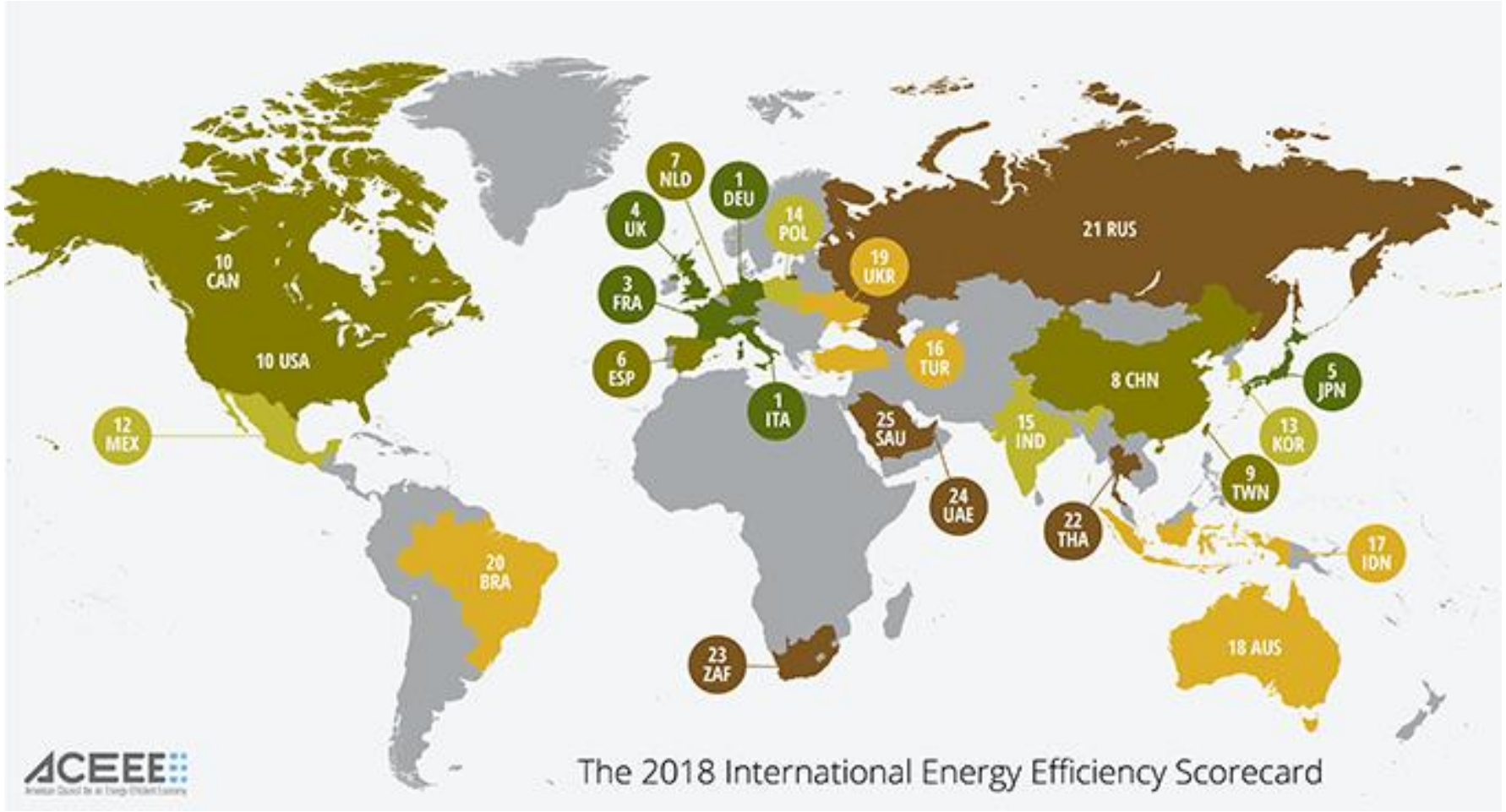
Why manage energy? Global competitiveness



The American Council for an Energy-Efficient Economy's 2018 International Energy Efficiency Scorecard ranked Australia 18th – **the worst in the developed world**.

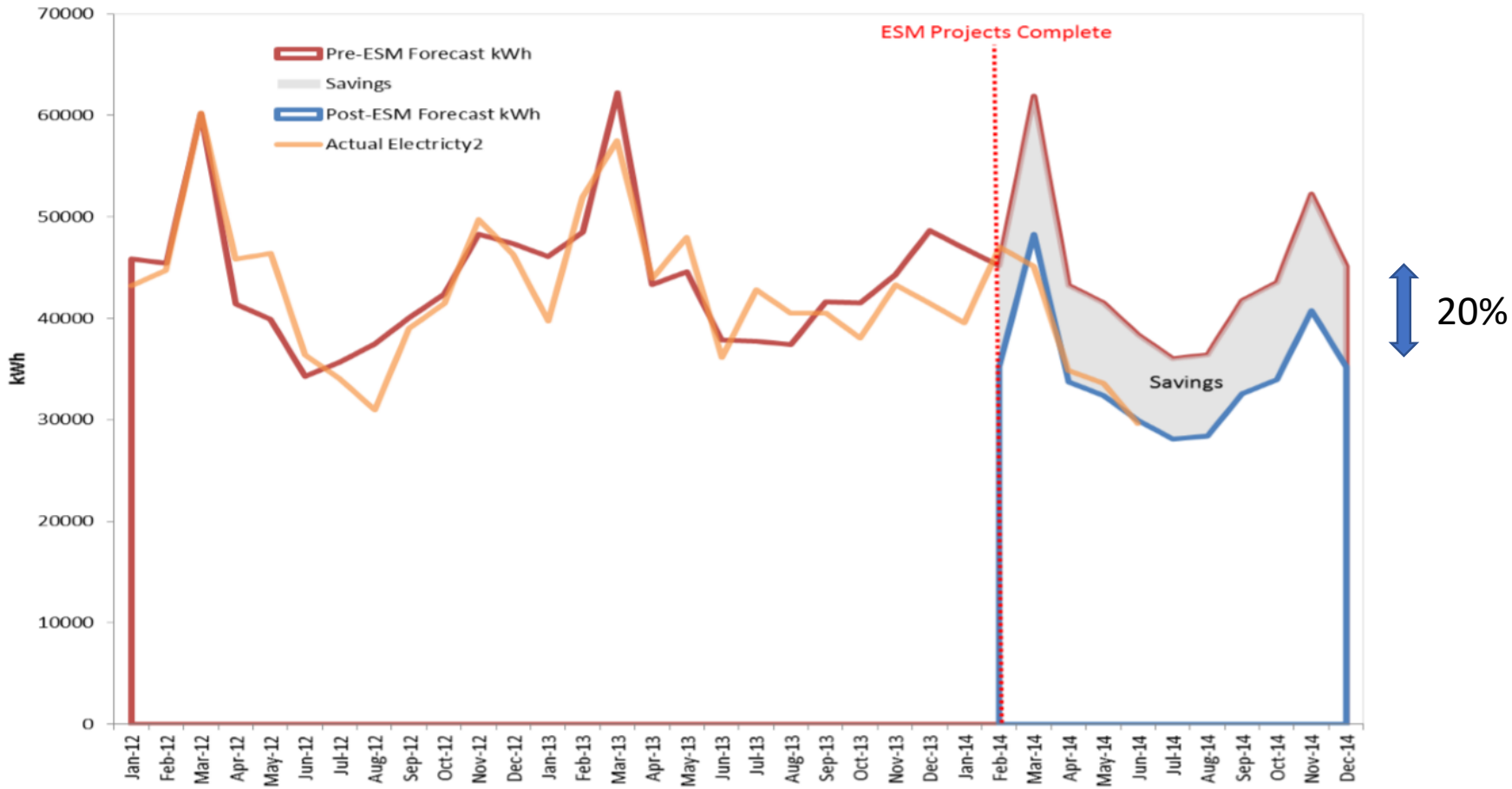
Why manage energy? A social perspective

7 11 12 13

Why manage energy? Asset Management / Reliability

Opportunity	Typical Payback	Opportunity	Typical Payback
• Review Energy Contracts/Tariffs	<1y	• Integrate Sub-Metering System	indirect
• Temperature Monitoring of the Brine Tank	indirect	• Motor Upgrades to High Efficiency	<5y
• Power Factor Correction	<3y	• Soft-start on Centrifuges	<10y
• Air Leak Management	<1y	• Brine Tank Up-size	indirect
• Retrofit Insulation to Stream Line	<10y	• Variable Head Pressure Control	<2y
• Variable Speed Capacity Control	<5y	• Pre-cooling Tank Farms	<2y
• Lighting upgrade	<5y	• Pre-cooling Fermentation Tanks	<2y
• Condensate Return	<10y	• Load Shifting / Scheduling	<3y
• Cooling Tower Variable Speed Control	<5y	• Refrigeration Control Modifications	<5y
• Boiler Upgrade	<15y	• Co-Generation	<15y
• On-site Generation (Solar PV)	<6y	• Compressed Air System Upgrade	<10y
• Boiler Economisers	<15y	• Load Shedding / Demand Management	<5y

Why manage energy? Cost savings and productivity



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Where are you at with energy compared with best-practice?

Element	1	2	3	4	5
Energy Management Policy	No explicit policy. No designated energy manager or any formal delegation of responsibility for energy consumption.	An unwritten set of energy guidelines. Energy management is a part time responsibility for someone with limited authority and influence.	Unadopted energy management policy set by energy manager or senior departmental manager.	Formal energy management policy but no active commitment from senior management. Energy payback criteria same as other investment payback requirements.	Energy management policy, action plan and regular review have commitment of senior management as part of a corporate strategy. Energy management fully integrated into management structure.
Tracking, monitoring and reporting systems	No accountability for energy consumption	Designated Energy Manager compiles reports for internal use within technical department. Often this person is the business accountant.	Monitoring and targeting reports based on supply meter data.	Monitoring and targeting reports for individual premises based on sub metering. Savings not reported effectively to users.	Comprehensive system sets targets, monitors consumption, identifies faults, quantifies savings and provides budget tracking.
Staff awareness, training and promotion	no promotion of energy efficiency	Informal contacts used to promote energy efficiency.	Energy manager has ad hoc involvement in budget setting and staff awareness, and energy awareness training is sporatic and occasional.	there is a program of staff training, awareness and regular publicity campaigns. Energy Manager develops budget aspects to support staff training.	There is a marketing of energy awareness and the performance of energy within the organisation as well as organisational promotion of good energy processes outside of the organisation.
Investment	no investment in increasing energy efficiency in premises/sites.	Only low cost energy efficiency measures conducted.	Energy efficient investment uses short term payback criteria only.	Cursory appraisal of new building/ equipment, or refurbishment opportunities.	Positive discrimination in favour of energy saving schemes, with detailed investment appraisal of all new buildings/equipment and refurbishing opportunities.

Enhancing your approach to energy

World's best-practice for Energy Management Systems (EnMS) has been established as **ISO50001**.

Our unique **SEE-Tick® Methodology** is structured on the proven platforms of ISO9001, ISO14001 & ISO50001 (International Standards for Quality, Environment and Energy Management) which ensures a simple and robust pathway to best-practice outcomes.

ASSESS

HIGH LEVEL AUDIT

- ✓ Defined the scope and assessed significant energy uses

ACTION PLAN DESIGN

- ✓ Established the Energy Policy and Energy Management framework

COACHING

- ✓ Provided ongoing strategic and technical coaching at all levels throughout the process

ANALYSE

DATA ANALYTICS & VISUALISATION

- ✓ Completed complex electricity tariff optimisation and clarified options

ENGINEERED SOLUTIONS DEVELOPMENT

- ✓ Provided technical engineering advice on energy

BUSINESS CASE PREPARATION

- ✓ Developed energy efficiency opportunities

ACHIEVE

MEASUREMENT & VERIFICATION

- ✓ Independent validation of results against targets

REPORTING

- ✓ Shared lessons, information and celebrated achievements

ISO 50001 CERTIFICATION

- ✓ Successfully guided the first Australian organisation through, with zero non-conformities

ACTIVATE

ENGINEERING

- ✓ Provided technical leadership on the Energy Action Team

PROJECT MANAGEMENT

- ✓ Conducted energy reviews and ensured task completion

NEGOTIATION & FACILITATION

- ✓ Negotiated multi-site electricity tariffs with SA Power Networks and retailers

Energy Management in 4 Steps

Assess

Top management commitment, resources and appoint responsible people - Crucial

Observe, interview, site visit, high level survey

Define the ‘Scope & Boundary’ of your EnMS

Energy Policy - Crucial

Tips & Tricks

- Opportunities Register

Energy Management in 4 Steps

Analyse

Energy Audit - Crucial

Significant Energy Uses (SEUs)
Energy Baseline
Energy Performance Indicators (EnPIs)
Energy Objectives
Energy Targets
Energy Opportunities
Measurement & Verification Plan

Energy Action Plans – Crucial

Tips & Tricks

- Decision Matrix
- Business Case Template

Energy Management in 4 Steps

Activate

People, training, competent, motivated – Crucial

Procurement

Project Management – Crucial

Tips & Tricks

- Project Planning

Energy Management in 4 Steps

Achieve

Operational controls to prevent deviation from Energy Policy/Targets – Crucial

Reward & recognise: Gold, Silver, Bronze, Platinum

Communicate results

Celebrate success

Culture

Certify

Top Management Review of EnMS – Crucial

Tips & Tricks

- Validate Project Outcomes
- Benchmarking

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