

From carbon abatement to energy productivity:

A strategic roadmap



Hello!



I am Daniel Waters

My role is to manage Gosford City Council's energy and carbon emissions.

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171,992
Residents



63,910
Dwellings



23,921
School students



7
Libraries



72,204
patrons visited
the Laycock Street
Theatre



12,779
businesses employ
63,811
workers



125,000
visitors to the
Central Coast
Stadium



160,607
visitors to the Gosford
Regional Gallery
and Commemorative
Gardens



1
City Centre, 2 Major
Towns and 10 Villages



940 KM²
of land area



3
Hospitals



1
TAFE and
1 University



39
Sports grounds



89
Playgrounds



44,145
Hectares of natural
reserves



14KM
of beaches

Our Timeline

Cites for climate
protection
1999-2009

Climate Change Policy
2010

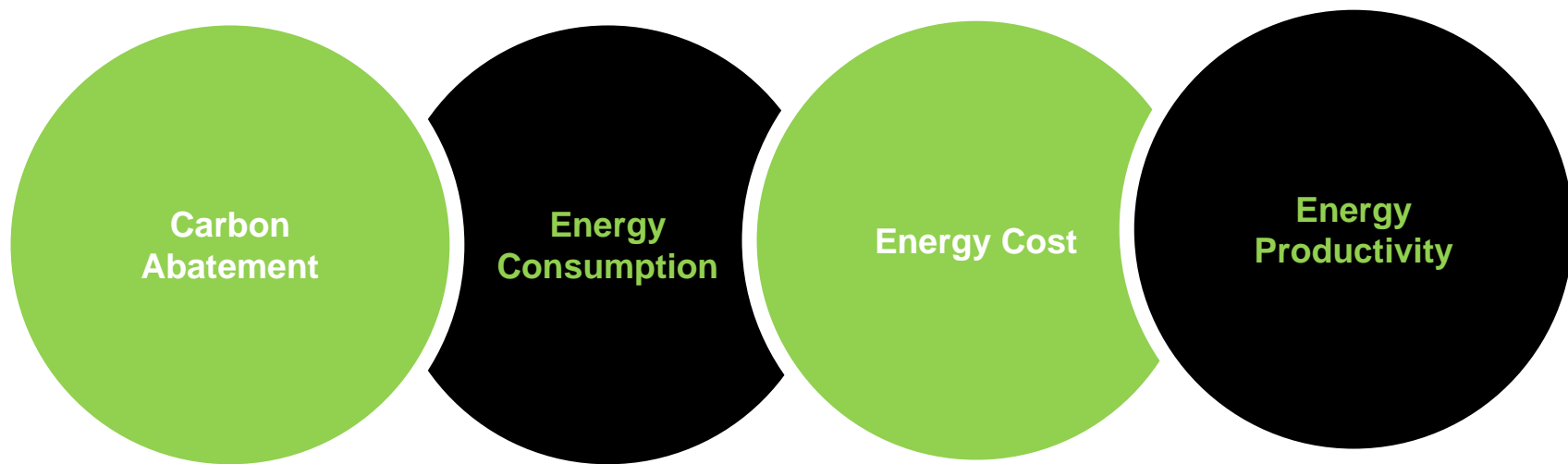
Climate Change
Mitigation Strategy
2012

Revolving Energy Fund
2012

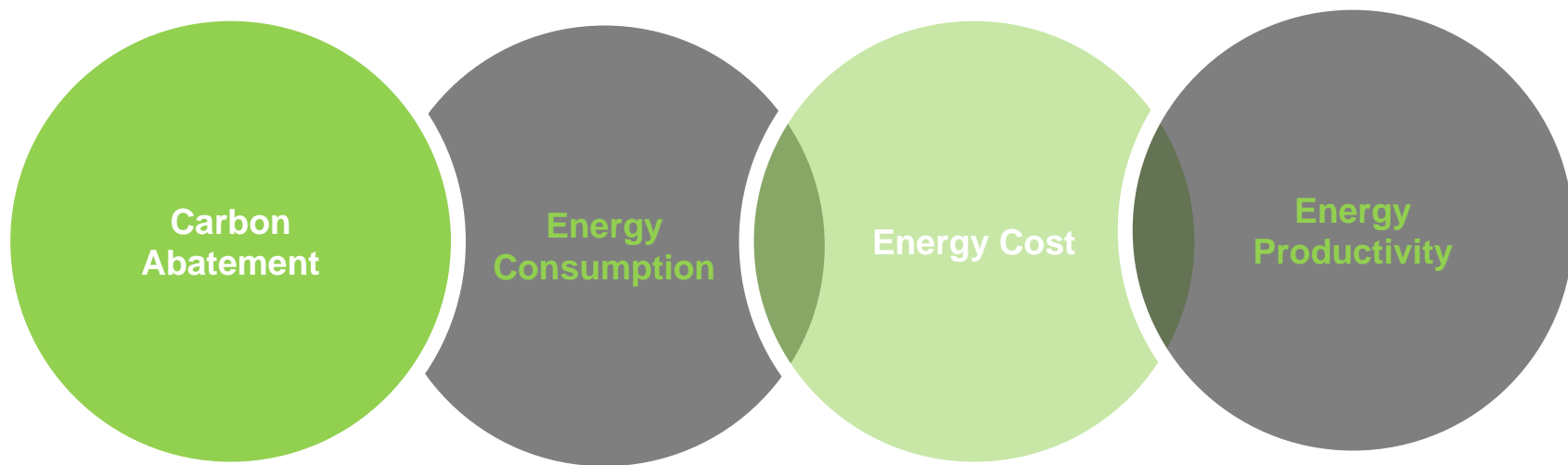
Energy Information System
2012-2014

Energy Management
Strategy
underway

The **Lenses**



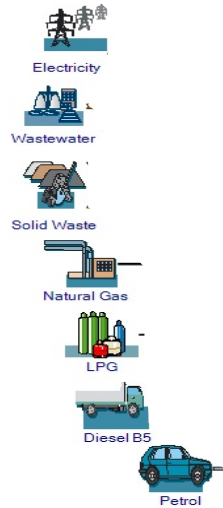
Carbon Abatement



Climate Change Mitigation Strategy

“ *To reduce Gosford City Council’s carbon footprint, and assist the community to reduce their footprint, in an **achievable and sustainable manner.***

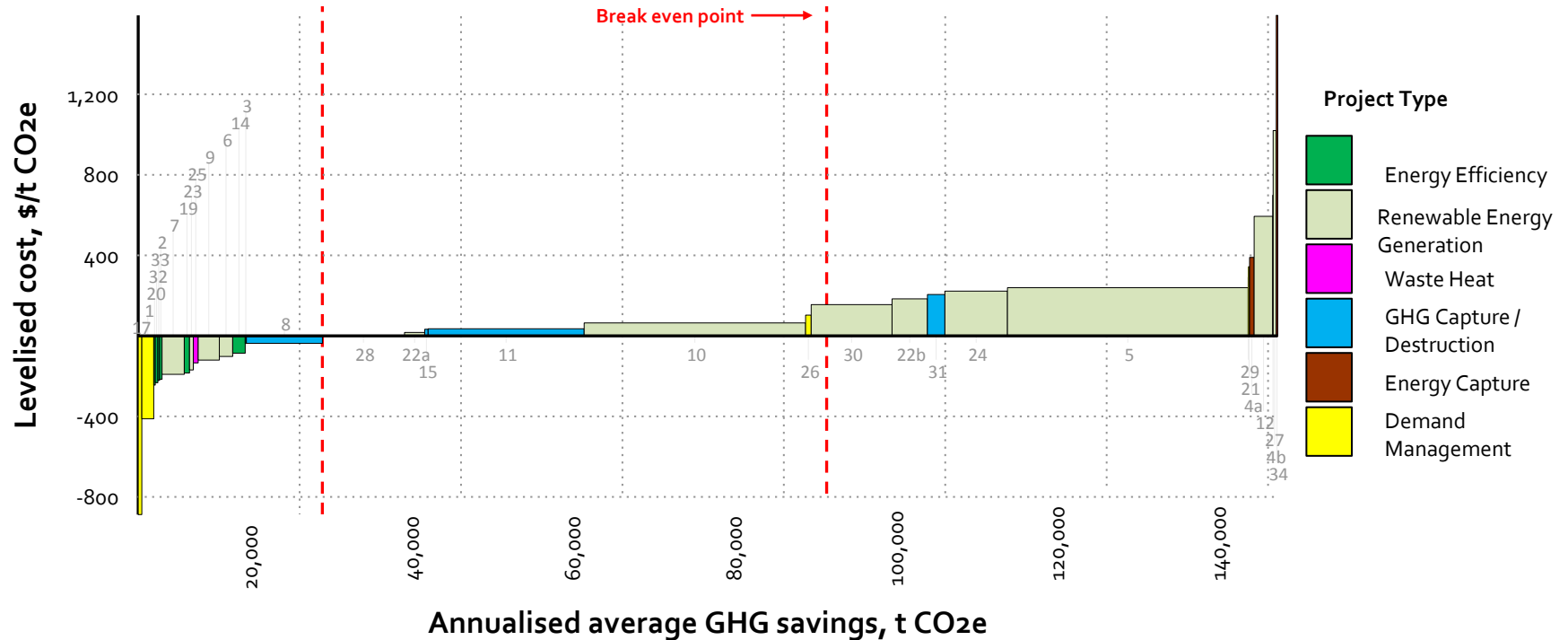
Gosford City Council 2013/14 Greenhouse Gas Emissions (t CO₂-e)



Key

- Energy Emission Sources
- Nutrient & Organic Emission Sources
- Scope 1 - Direct GCC Emissions
- Scope 2 - Indirect GCC Electricity Emissions
- Scope 3 - Direct & Indirect Contractor Emissions

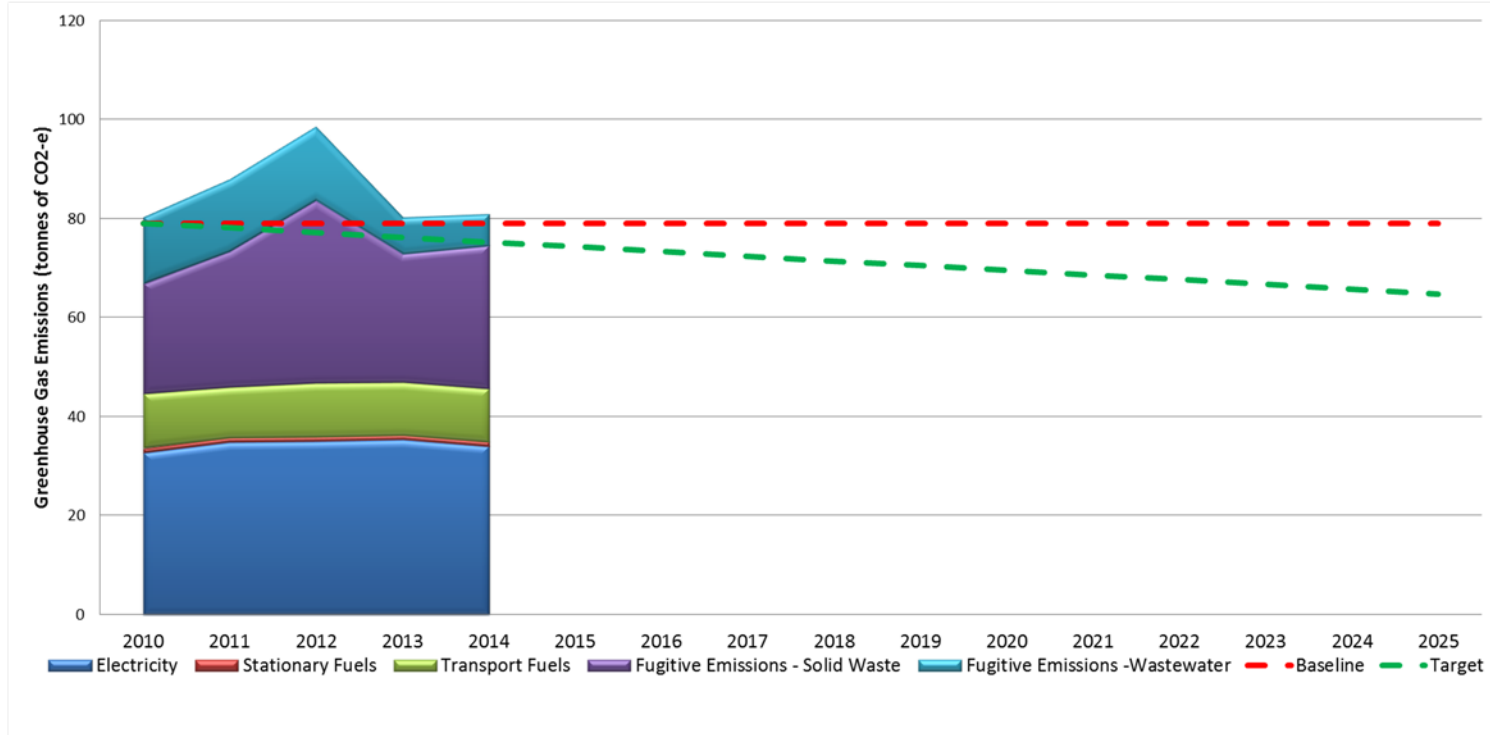
Marginal abatement cost curve



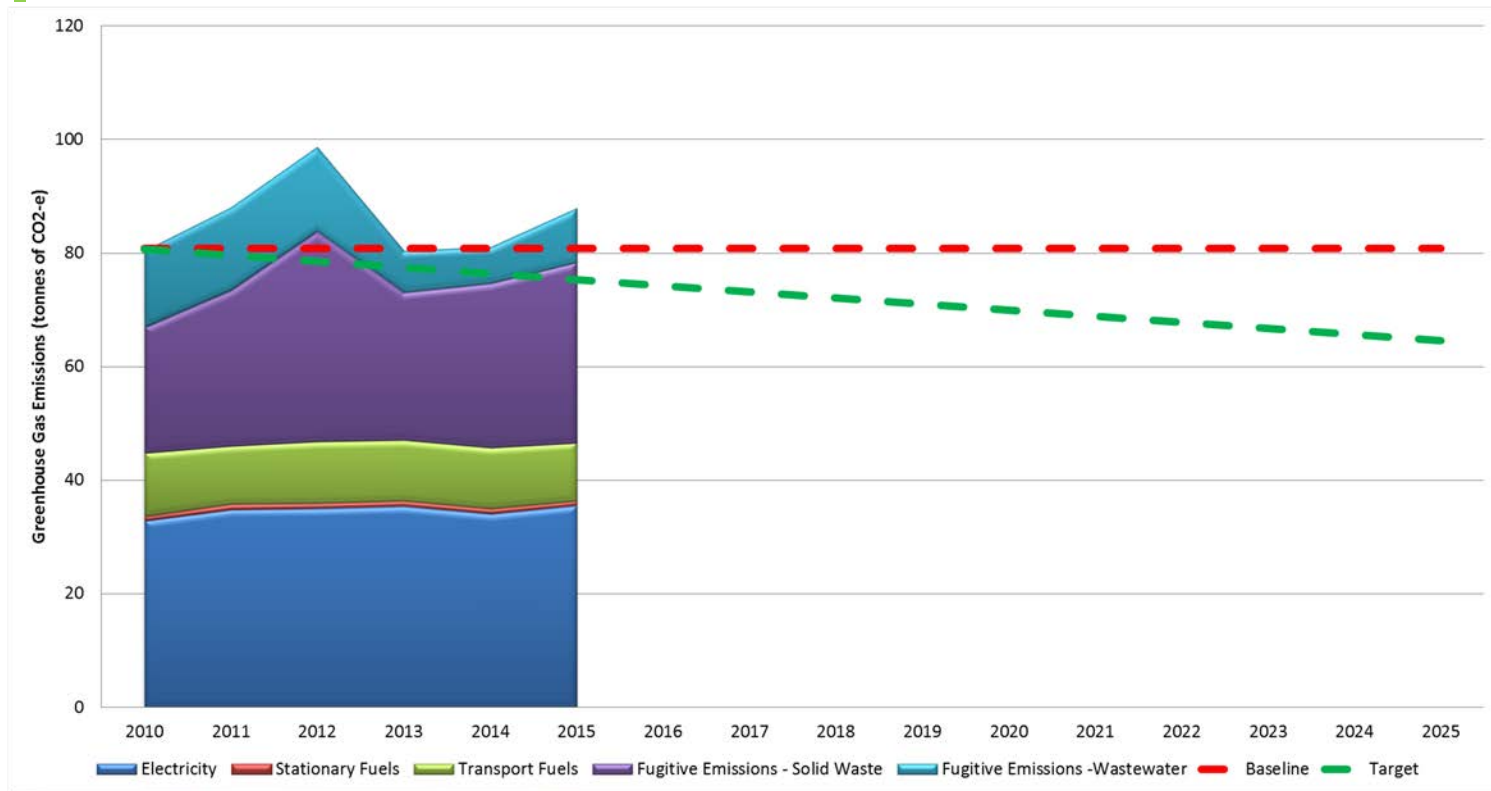
20% at 2025

carbon reduction target of 20%
at 2025 based on 2010 levels

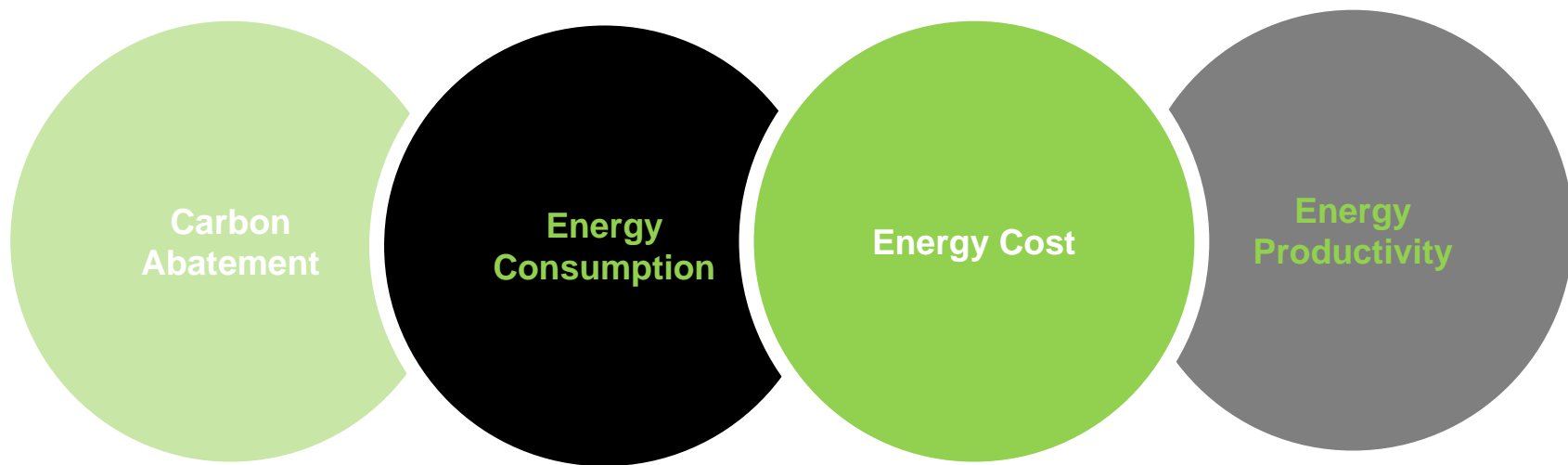
So far so good.....



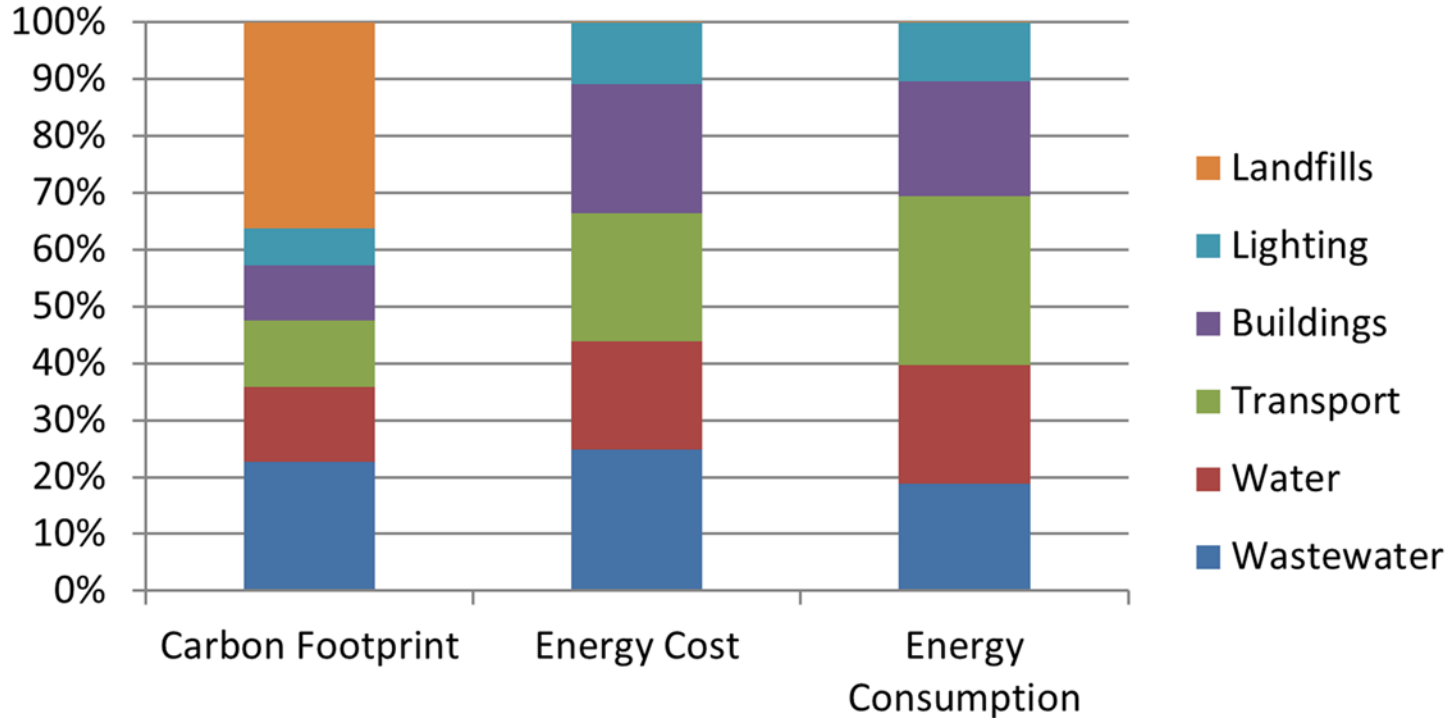
Sort of



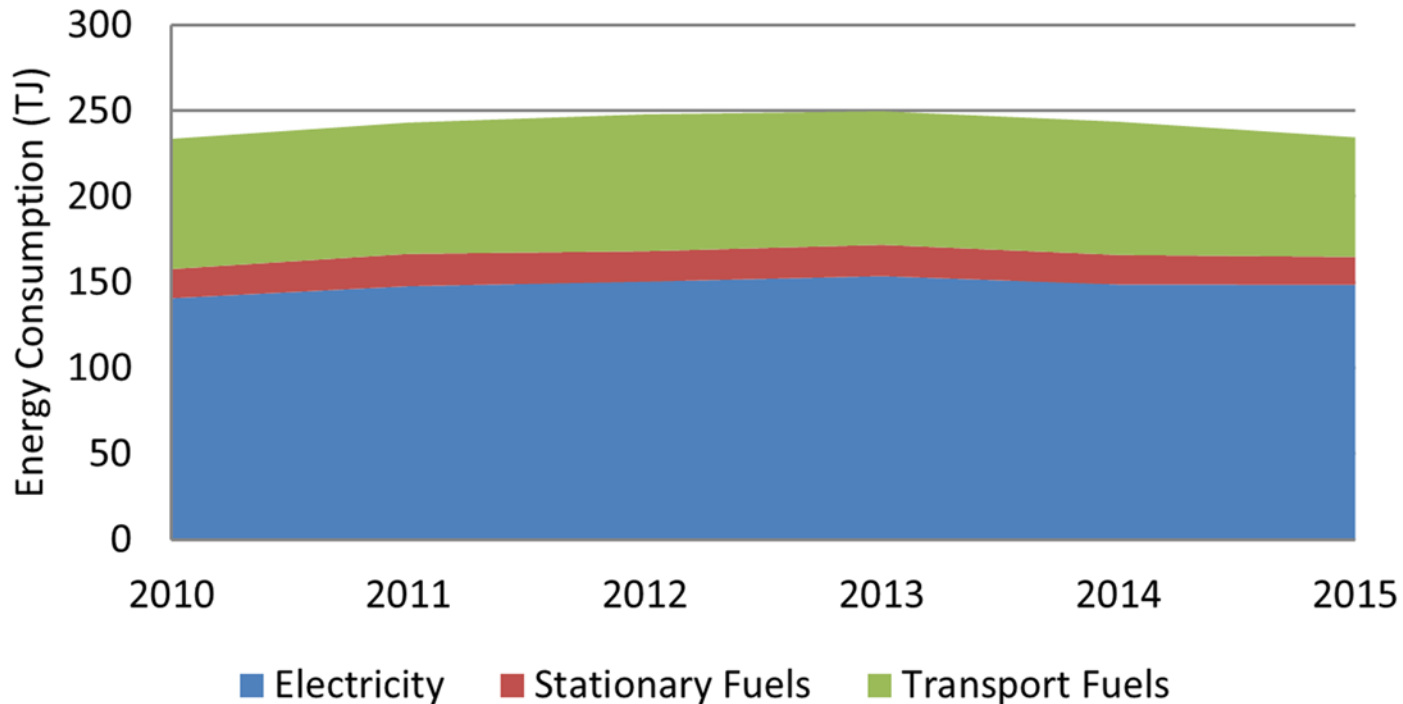
Energy Consumption and Cost



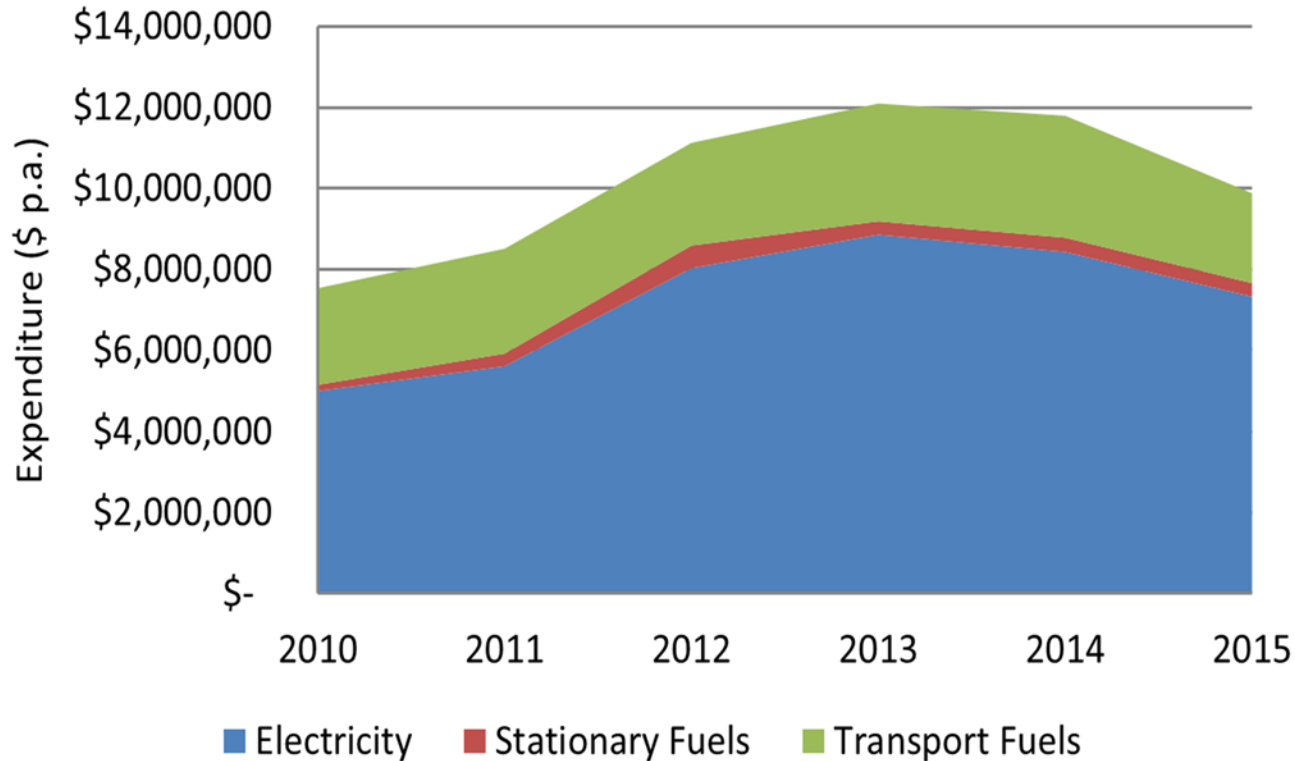
Carbon - Cost – Energy



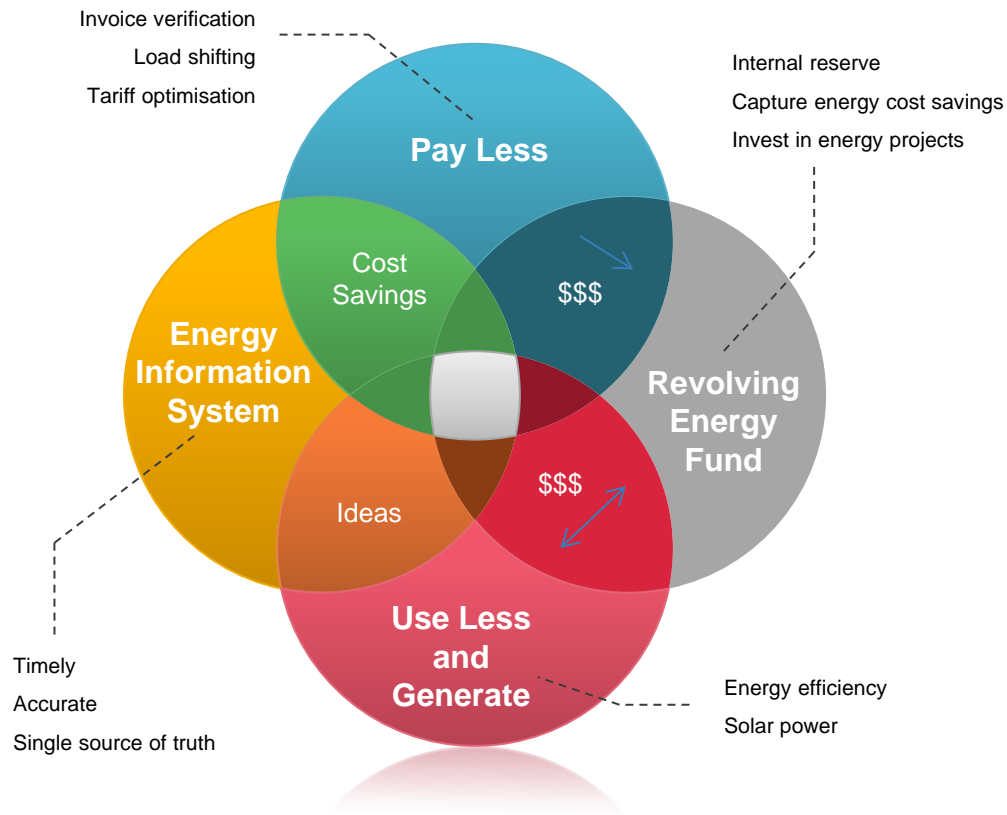
Stable energy consumption



Not so stable energy cost.



Gosford's Energy Management System



\$1,072,000

That's a lot of energy cost savings

3,691 GJ

A lot of energy

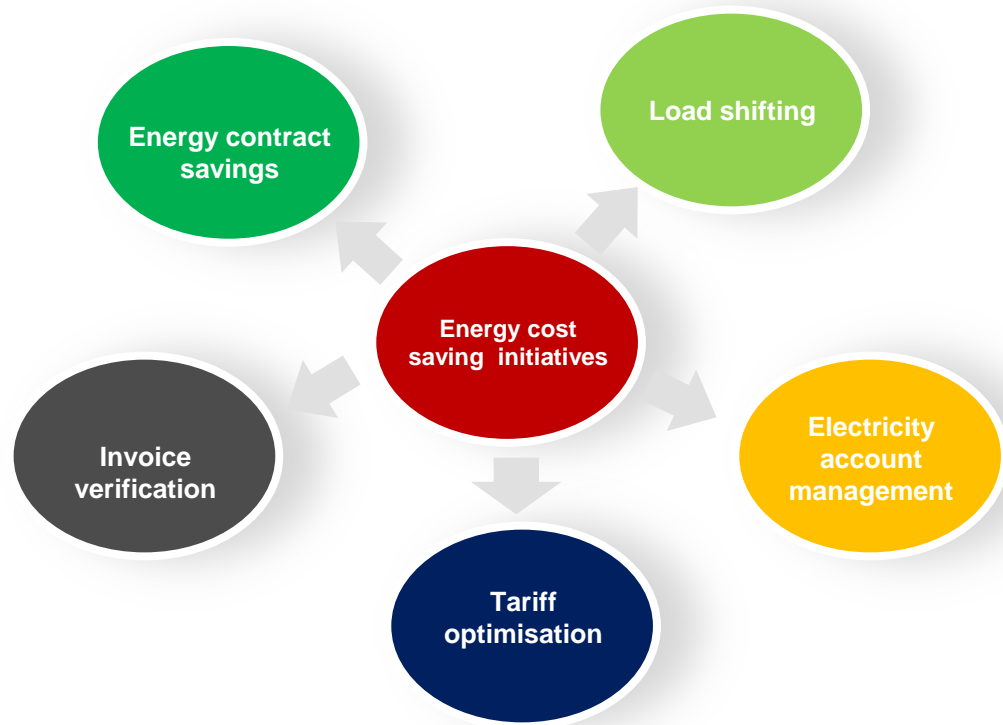
1,144 tCO₂-e

And a smaller carbon footprint!



Payless Initiatives

\$822,000
savings

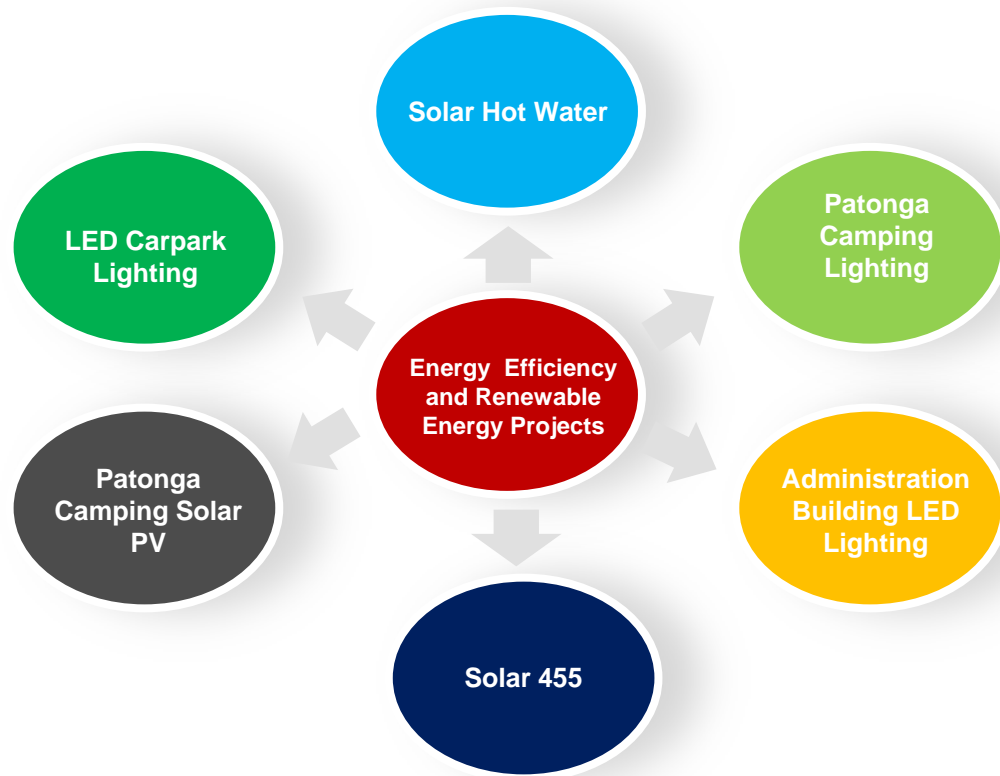


Useless and Generate Initiatives

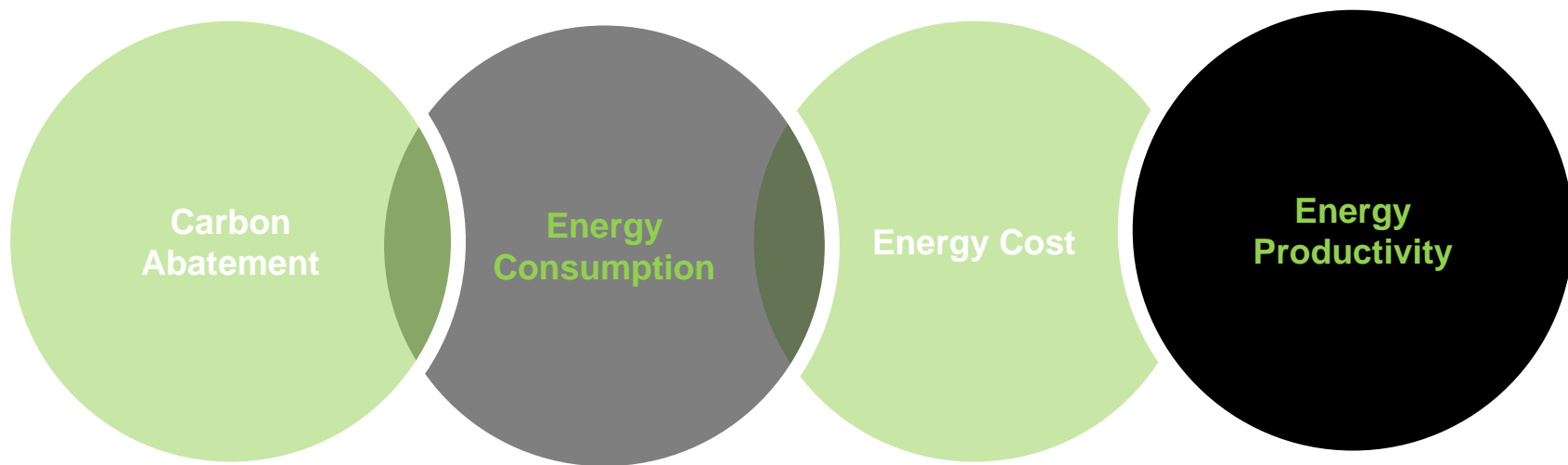
Capital cost \$1,071,000

Energy cost savings \$250,000 p.a.

Internal Rate of Return 18%



Energy **Productivity**





Energy Productivity

Energy productivity aims to increase the total economic value the Council generates with the energy it uses.

Factoring in productivity = more value and more opportunities

Strengthens the argument for community initiatives

Energy Productivity

Office lighting example: change office lights from tubular fluorescent (T5) to LED

Energy Management Lens

marginal energy and
maintenance cost savings.

Simple Payback 20 years

Energy Productivity Lens

LED lights provide improved light quality

Staff productivity gains of up to 23% possible
(World Green Building Council, 2013 cited in Stadler, Smith
and Atherton 2015)

Factoring in a 0.5% staff productivity gain

Simple Payback less than 2 years

Let's review some concepts

Milestones

It all takes time.
15 year journey

Energy Management Results

Energy management saves \$\$\$\$
and
Reduces your carbon footprint

The data

Reliable
Timely
Single source of truth

Energy Productivity

Do more with the dollars Council
spends on energy.



Thanks

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