Foster's Approach to Energy & Water Efficiency

Presentation to WEA

25/06/09

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Presentation Summary

- Foster's & Sustainability
- Compliance Drivers
- Targets & Energy Consumption within Foster's
- Determining usage on a site & approach
- Practical Examples of benefits of understanding energy usage

Who we are

- Foster's Group Limited
  - Global beverage business predominantly beer & wine
  - 238 products
  - 48 production facilities
  - Over 15,000 ha of vineyards
- Production areas located in Australia, New Zealand, Pacific Islands, Italy and the USA
- Major trade markets Asia Pacific, Europe, United Kingdom, USA

Foster's Sustainability Approach

" ... our approach to sustainability at Foster's acknowledges the direct link between the effective management of our environmental & social impacts and our business success. On strong foundations, a passionate global team is building a sustainable future for Foster's, our people, our environment and our communities."

Our Sustainability Priorities

GOVERNANCE	PEOPLE & SAFETY	Enjoy Responsibly RESPONSIBLE CONSUMPTION	CARBON REDUCTION PROGRAM MAKE A DIFFERENCE ENERGY, WATER AND CLIMATE CHANGE
OPERATIONAL WASTE	PRODUCT STEWARDSHIP	LEADERSHIP AND ADVOCACY	COMMUNITY CONTRIBUTION

our environmental priorities

Foster's Target's

- A public target of a 10% reduction in energy & water per unit volume by F11 (based on F07)
- Internal targets for carbon emissions/unit of production

Energy & Water Efficiency

- Foster's has established an energy & water efficiency program across 10 manufacturing sites (6 wineries, 4 CUB) to help facilitate the targets.
- This group also reports into the mandatory government programs of EEO (Federal) and EREP (Victoria)

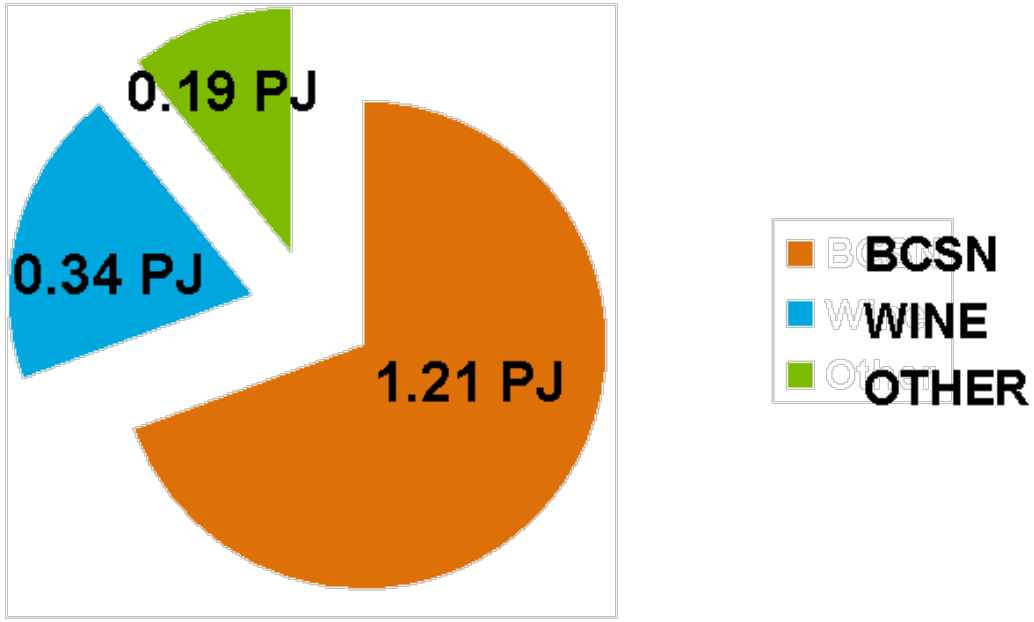
Government Programs

- Companies using >0.5PJ in F07 must report opportunities on an annual basis and report on energy usage (Foster's used 1.74 PJ in F07) through to Federal Government
- Sites using >100 TJ or 10ML of water in state of Victoria must report on annual basis on energy, water and waste opportunities.

Requirements of Government Programs

- Detailed Mass & Energy Balances of uses with production plant. Theory must balance to 95% of site boundary meter. Must assess at least 80% of site use.
- EEO, must report all opportunities with < 4 year payback
- EREP, must report and implement opportunities < 3 year payback

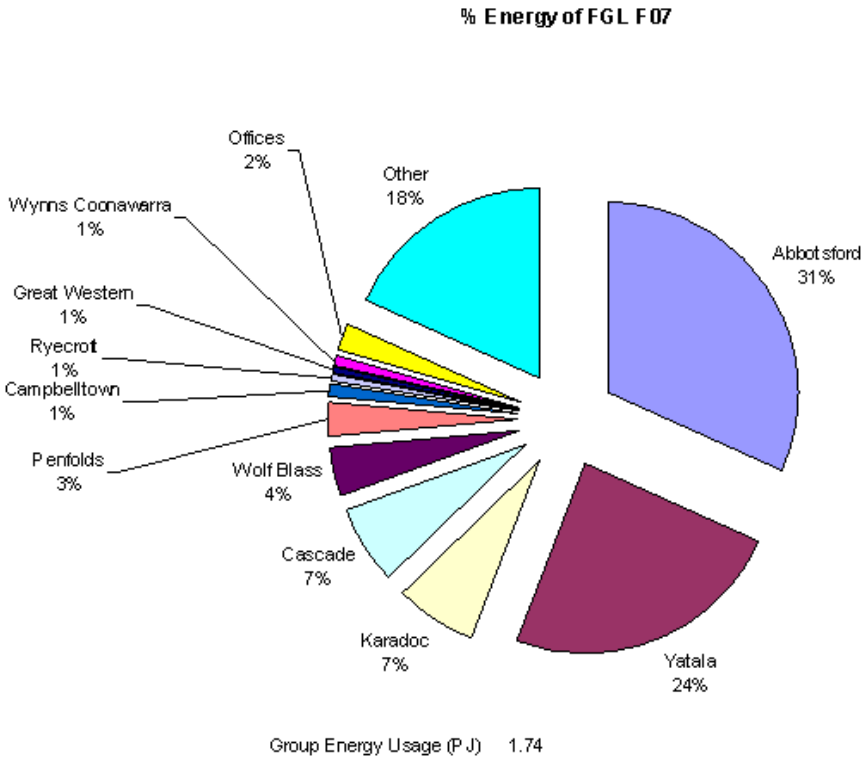
Foster's Energy Usage



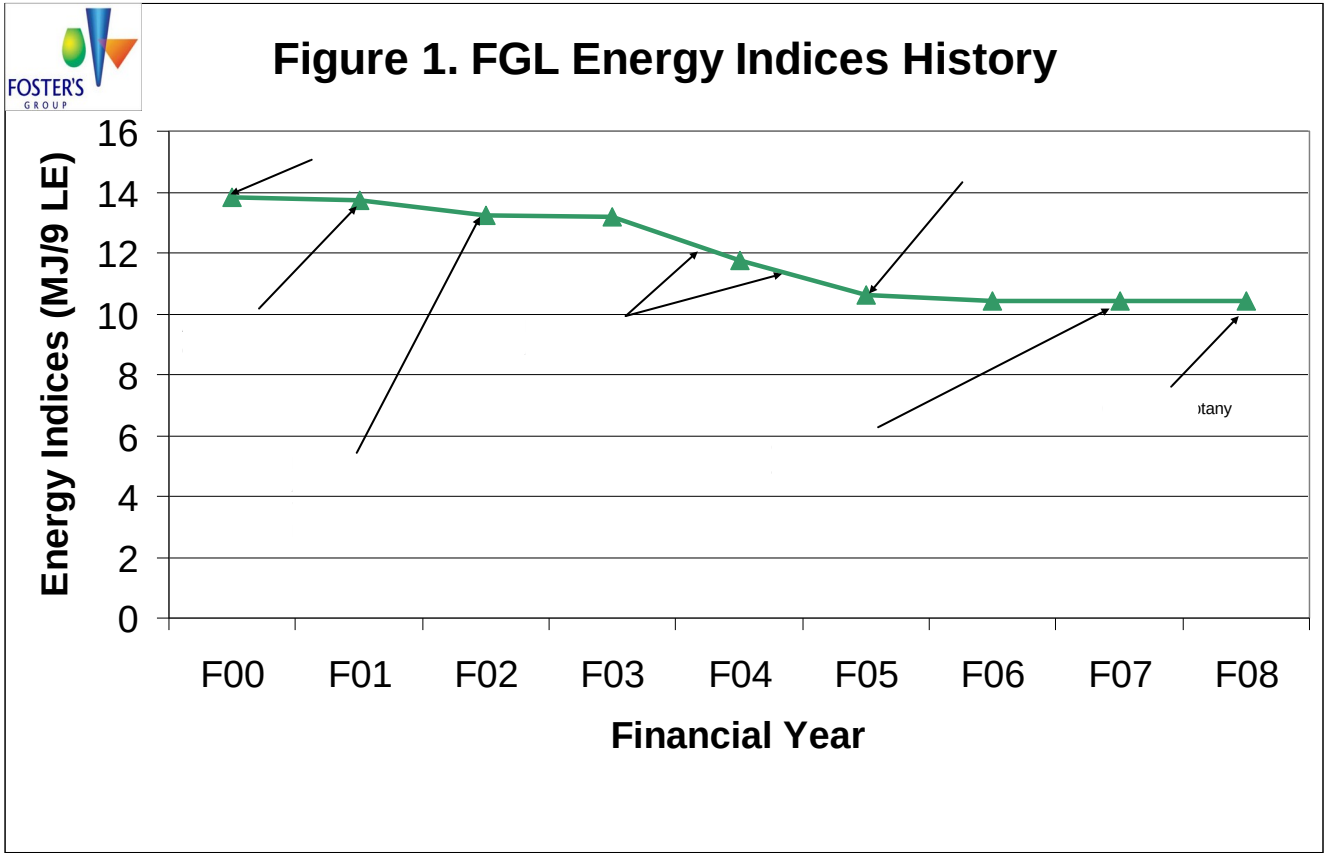
Total Group Energy Usage – 1.74 PJ

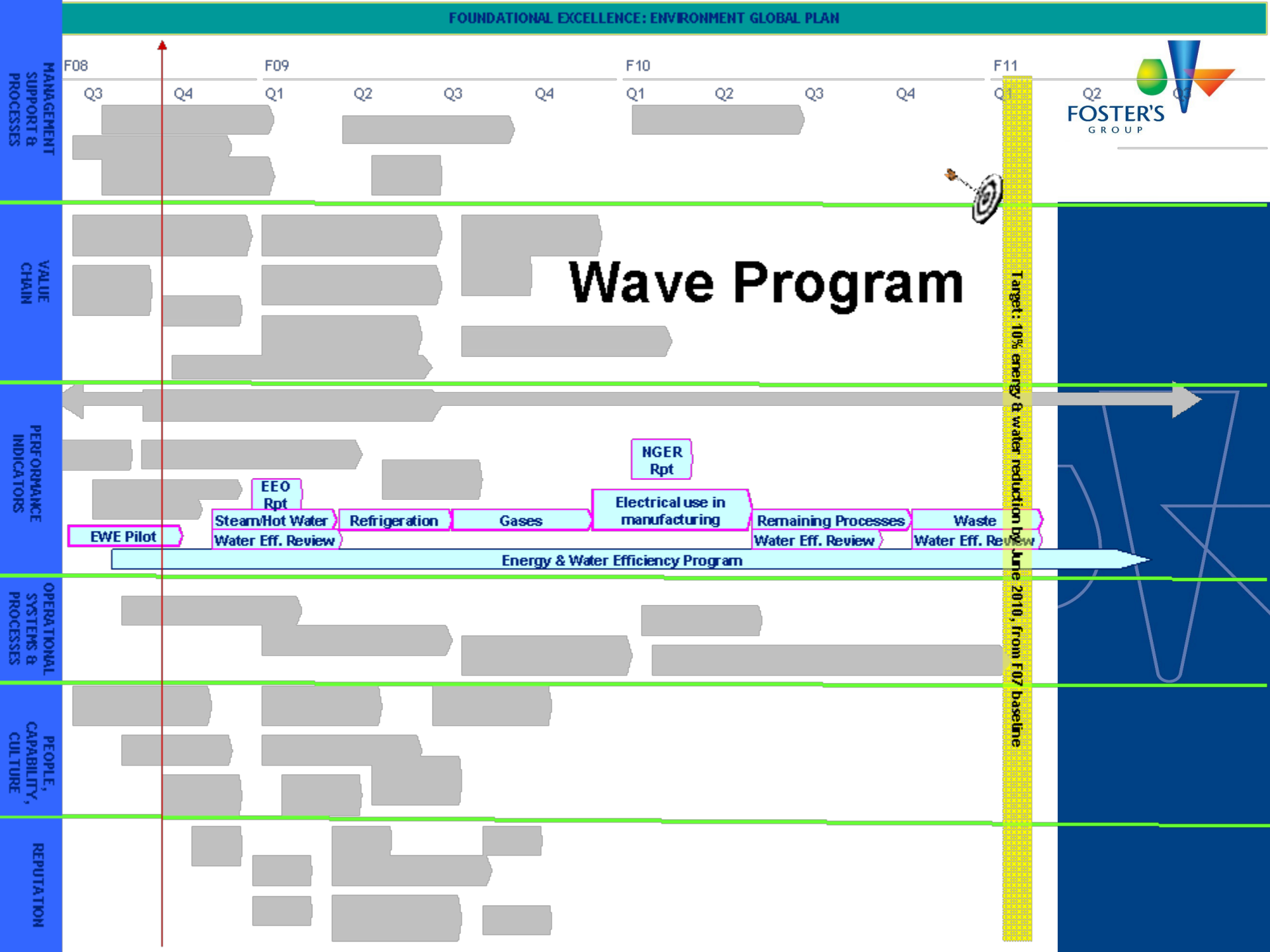
80% Rule – Total Group Assessment Req'd– 1.40 PJ

Split of Energy Use



Foster's Historical Trend in Energy Use




FOUNDATIONAL EXCELLENCE: ENVIRONMENT GLOBAL PLAN
MANAGEMENT SUPPORT & PROCESSES
VALUE CHAIN
PERFORMANCE INDICATORS
OPERATIONAL SYSTEMS & PROCESSES
PEOPLE, CAPABILITY, CULTURE
REPUTATION
F08
F09
F10
F11
Q3
Q4
Q1
Q2
Q3
Q4
Q1
Q2
Q3
Q4
Q1
Q2
Q3
Wave Program
NGER Rpt
EEO Rpt
Steam/Hot Water
Refrigeration
Gases
Electrical use in manufacturing
Remaining Processes
Waste
EWE Pilot
Water Eff. Review
Water Eff. Review
Water Eff. Review
Energy & Water Efficiency Program
Target: 10% energy & water reduction by June 2010, from F07 baseline
FOSTER'S GROUP

Achieving Targets

- Challenges to ongoing efficiencies through modifications to plant operations
- In current economic climate competing capital requirements presents challenges
- Human capital – having sufficient resources to identify & investigate projects

Energy and Water Efficiency Team

- Team of process orientated professionals
- Liase with site champion (each site has a site champion)
- Investigation team includes, functional experts, external consultants, site production and maintenance expertise

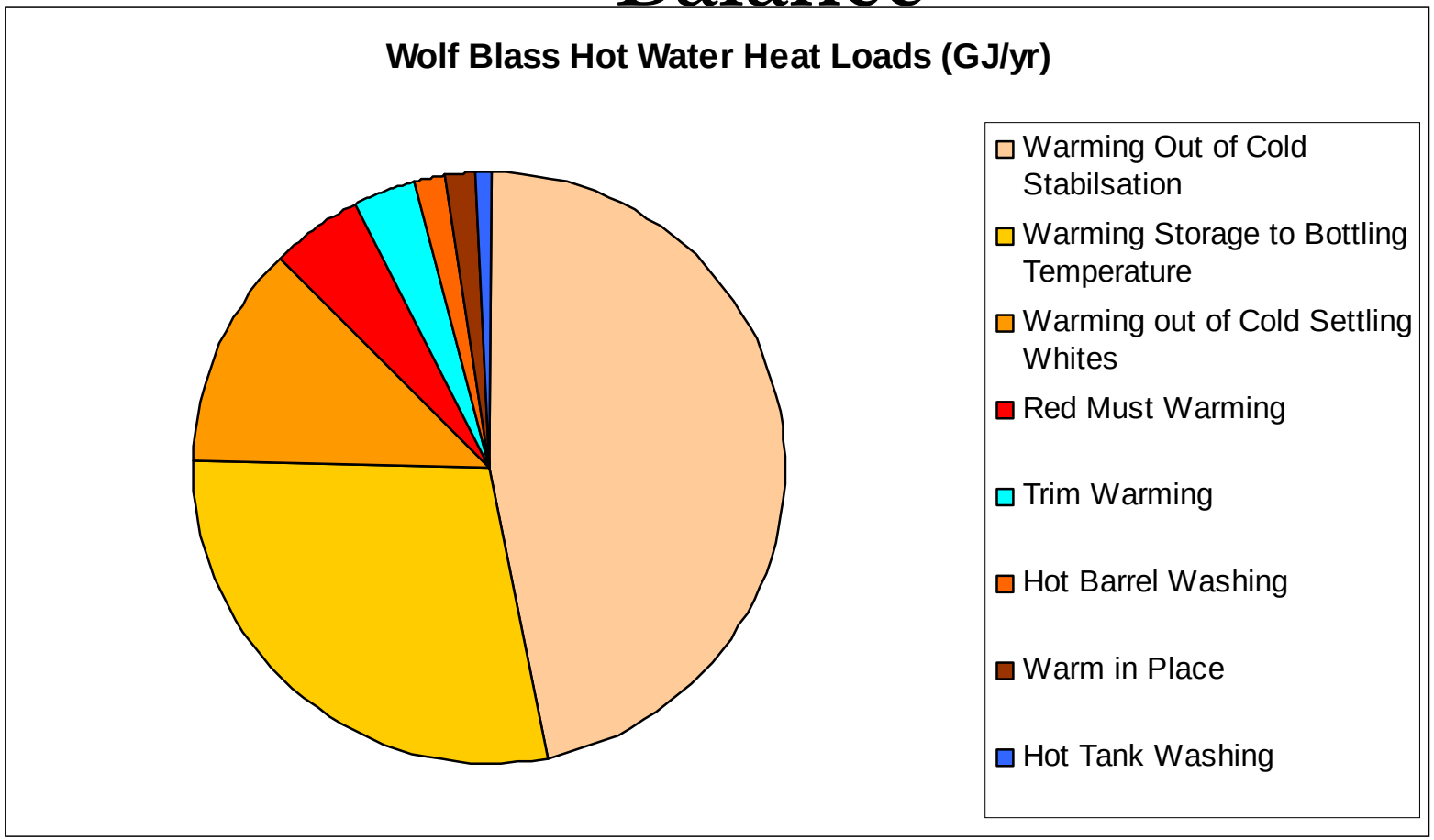
Determining Heat Loads

- Develop a process flow of major steps in winery
- Work with wine makers and technical staff to determine flows and temps
- Do a theoretical balance & compare to site boundary meters or for LPG delivery dockets

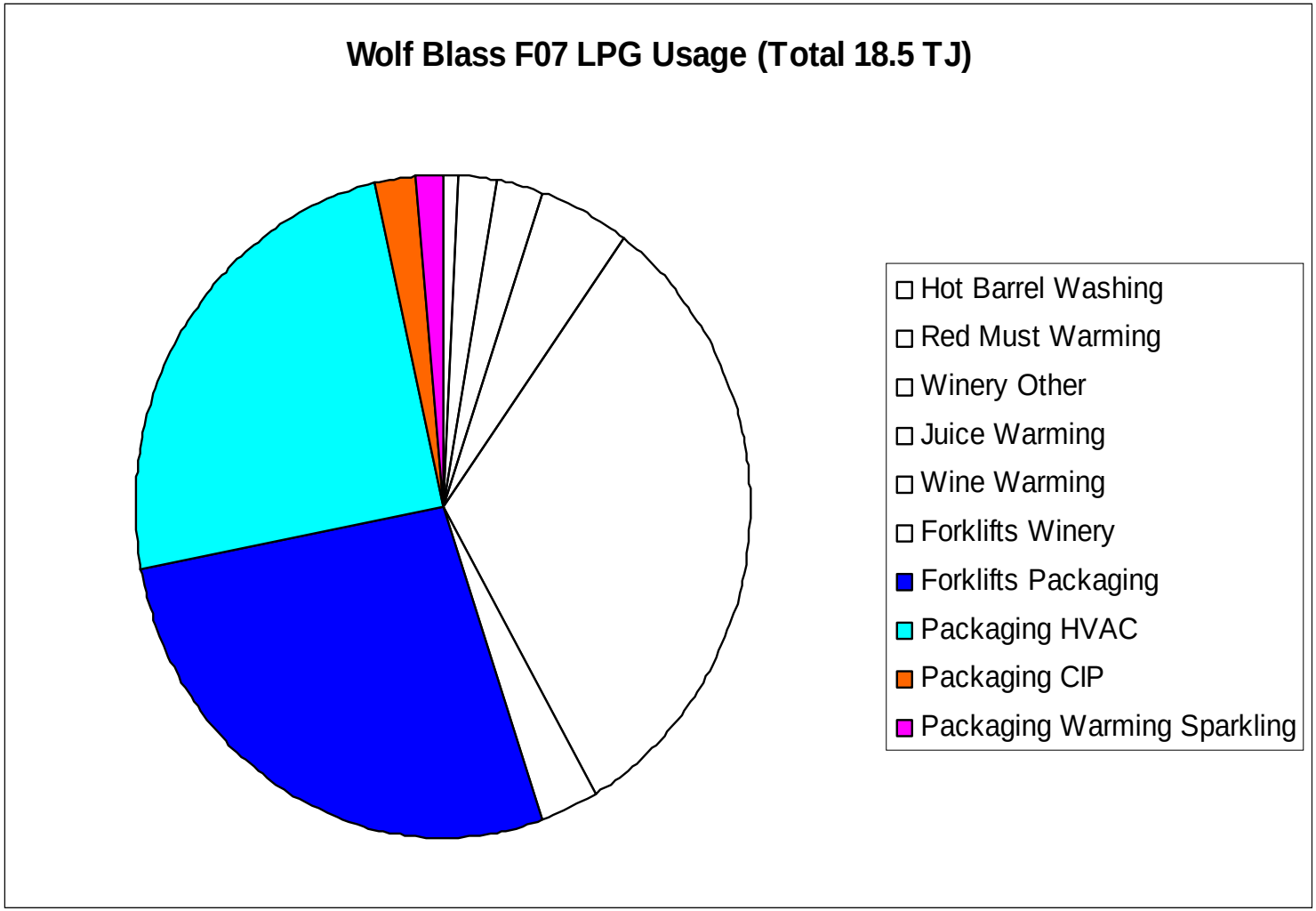
Wolf Blass Summary

- Total Energy Used 0.0695 PJ (F08).
- Winery Energy 0.0369 PJ
- Packaging Energy 0.0326 PJ
- Hot Water Energy 0.0185 PJ (27% of site)

Wolf Blass Winery Hot Water Balance



Wolf Blass Site Hot Water Balance



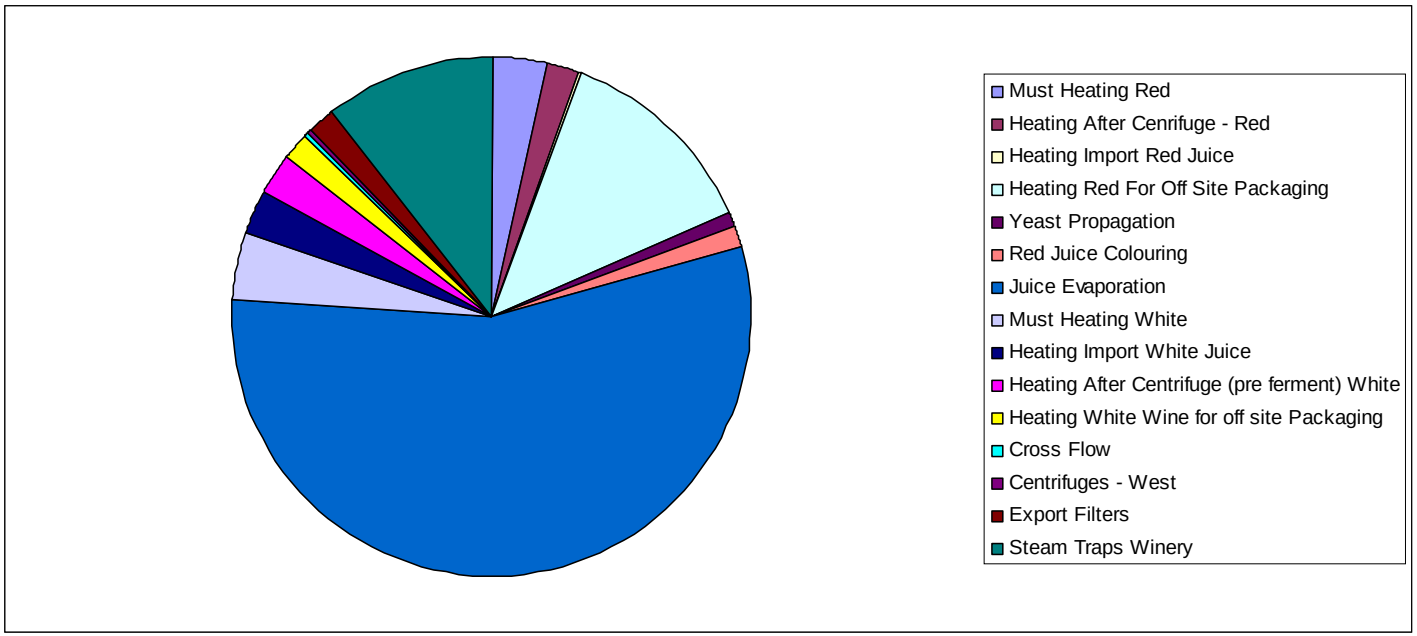
Wolf Blass Project Summary

- HVAC Control Project (4% of site energy usage) – implemented.
- Cold Stabilisation – under review
- Refrigeration Plant Waste Recovery – under review
- Total site energy used identified as potential saving – 13%

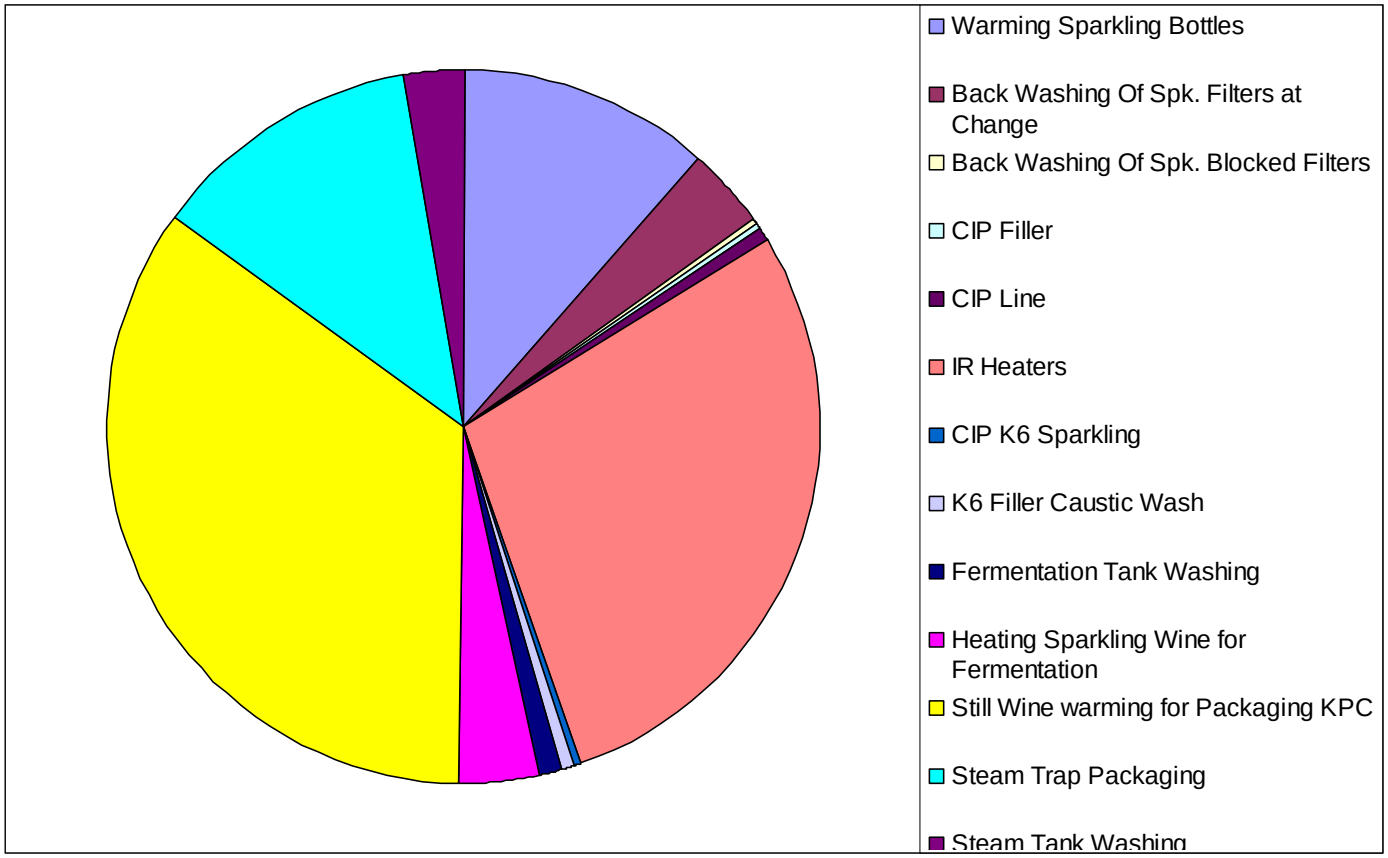
Karadoc Steam/Hot Water Summary

- Total Karadoc Energy Usage 0.123 PJ (F08)
- Winery Energy Usage 0.0678 PJ
- Packaging Energy Usage 0.0551 PJ
- Steam/Hot Water Energy Usage 0.0385 (or 31.3%)

Karadoc Winery Steam/Hot Water Balance



Karadoc Packaging Balance



Karadoc Project Summary

- Turning boilers off at weekend – implemented
- Pre-evaporator for juice concentrator – under investigation
- Total Projects identified around 6000 GJ or 5% of site energy

Refrigeration Wave

- Investigating of using Chilled Water at Karadoc
- Chilled Water COP – 5.0 cf NH_3/Brine of around 3-3.5
- Savings in > 5% of site energy usage
- Look at splitting system, chilled water would provide red fermenter temperature control & must chilling (vintage loads)
- Eliminate need for hire chillers

Summary

- Mass Balances help identify major loads at wineries.
- Identifying major loads allows concentrating effort for opportunities.
- In some cases (Wolf Blass HVAC), the major user comes as a surprise!
- Projects identified at both major wineries are around 10% of their energy use

Summary (cont)

- Myriad of government programs present challenges to business
- Government funding may help get some projects across the line