

Services for sugar mills and refineries

HRL's services to sugar mills and refineries can assist plant managers and operators to maximise plant availability and efficiency. Australia exports bulk raw sugar into a volatile world market. HRL can assist plant managers and operators to maximise the efficiency of their plant to enhance their business competitiveness. HRL also has the expertise to support sugar mills and refineries wanting to incorporate other renewable resources and low-emission technologies into their operations.

Services provided by HRL

Fuel Technology

HRL's scientists and engineers have extensive experience in bagasse, biomass, coal and fuel use. Expertise that includes all the complex aspects of evaluating, upgrading and processing these fuel resources.

The benefits HRL provides to operators of sugar mills and refiners may include:

- step-by-step investigation that engages clients and provides continuous consultation
- assistance to make informed decisions on using biomass and wastes
- access to modern fuel-testing and analytical laboratories supported by specialist bench- and pilot-scale facilities
- the services of an organisation able to take a project from concept and initial investigation through to solution implementation.

Case Studies

1. Combustion optimisation and combustion plant modifications on a bagasse-fired boiler

Operators of a sugar mill were experiencing combustion-related issues with their bagasse-fired boiler. The issues were having a negative impact on boiler reliability.

HRL personnel undertook an in-depth assessment of combustion to identify the underlying issues. The HRL team was able to provide the client with detailed recommendations on how to mitigate the combustion issues.

The client implemented the recommendations from HRL. The result was a significant reduction in the severity of the combustion-related issues and increased boiler reliability.



HRL provides a range of services to sugar mills and refineries.

2. Evaluation of manufacturing process waste for co-firing with existing boiler infrastructure

An industrial manufacturer wanted to use waste products produced as part of their manufacturing process as a fuel source.

HRL personnel undertook rigorous analysis and characterisation of the waste material. The team then undertook in-depth boiler modelling to evaluate specific co-firing scenarios using the waste material and current fuel to quantify the new fuel's potential performance in the existing boiler.

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HRL personnel also identified combustion and environmental issues that may arise from the use of the waste material as a fuel.

Combustion Optimisation

HRL provides datum testing to enable plant operators to understand their potential to improve boiler performance and availability, and reduce maintenance. Testing may involve different plant including:

- fuel distribution
- air-supply systems
- burners
- furnaces
- complete boilers.

The benefits HRL provides to operators of sugar mills and refiners may include services to:

- improved boiler efficiency
- reduced carbon monoxide/dioxide and nitrous oxide emissions
- reduce fly-ash carbon content
- reduce slagging, fouling, corrosion and erosion
- reduce auxiliary power consumption
- reduce maintenance requirements and forced outages.

Engineering and Materials

HRL's engineers and scientists have extensive experience in providing engineering and materials services to operators of pressure equipment, those involved with high-temperature materials and the power industry.

The core services offered by HRL are underpinned by the company's expertise in:

- plant inspection and management programs that meet the Australian standard, AS3788 Pressure equipment – In-service inspection, and state safety legislation
- identifying, understanding and mitigating corrosion and erosion, especially of boiler internals and draft plant.

The benefits HRL provides to operators of sugar mills and refiners may include services to:

- minimise asset wear and tear
- prevent, minimise materials failure
- minimise maintenance and forced outages
- assess plant remnant life extension and condition
- optimise asset management
- provide expert root-cause analysis, prevent and eliminate materials problems
- provide economic solutions to mitigate corrosion and erosion
- maximise plant availability.

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The company's NATA Accredited Laboratories number is 561.

HRL Technology Group's ISO 9001 Quality Management is certified by BSI under certificate FS605116

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