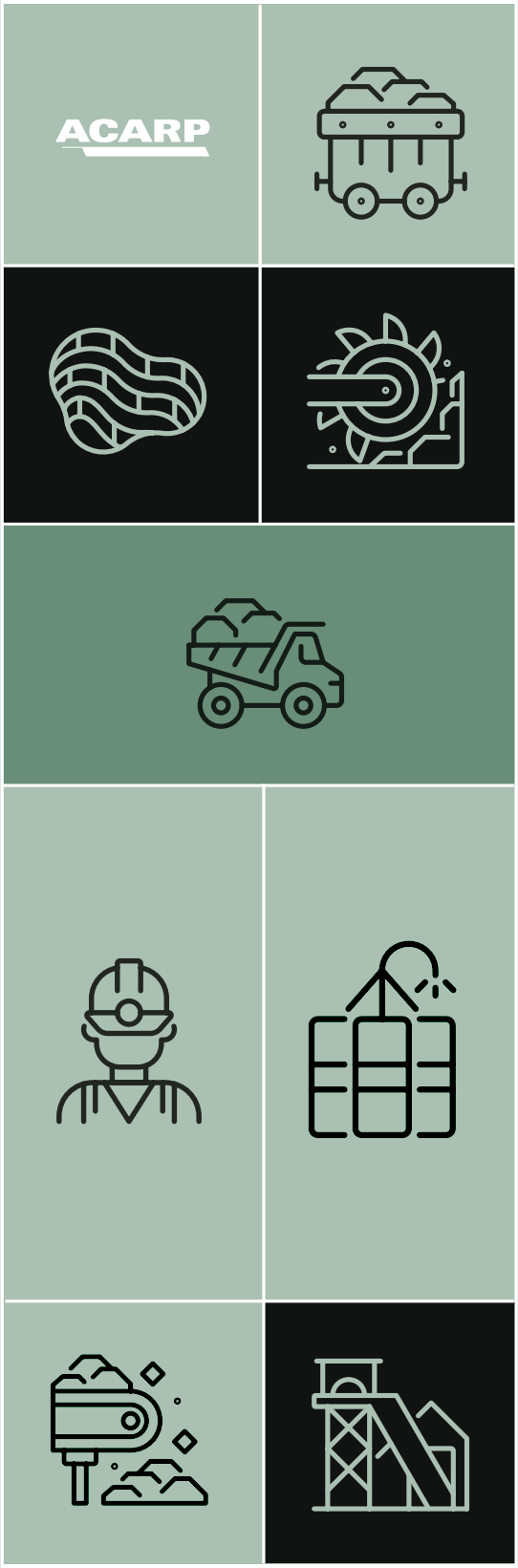
20 RESEARCH 23 PRIORITIES



ACARP assists the Australian coal industry to develop and adopt technology and mining practice that leads the world. The program is entirely funded, owned and managed by the Australian black coal producers.

ACARP is a collaborative program that utilises the experience and technical strength of both the coal mining industry and research institutions in solving technical problems and addressing issues of significance to the industry's long term future. **ACARP is seeking research driving minimised emissions and environmental impact of industry.**

Safety and environment remain key drivers in the program and will continue to be the focus of much of the underground work and a significant component of the open cut and coal preparation programs. Any proposed research project that is strongly supported by a mine site and is of interest to a number of coal operations is encouraged.

HOW TO APPLY FOR FUNDING

Proposals are sought in accordance with a yearly timetable; with short proposals of no more than 6 pages being requested in the first instance. Short proposals should be prepared under the headings listed in the guidelines included in this document.

Short proposals are ranked primarily according to the importance of the problem and the credibility of the proposed approach, enabling the committees to quickly gain a broad appreciation of these features.

Short proposals must include the **2023 version of the proposal summary sheet**. The proposal summary sheet and further information can be obtained from www.acarp.com.au.

The closing date for receipt of short proposals is **Wednesday, 26 April 2023, emailed to anne@acarp.com.au**.

Receipt of proposals is acknowledged by return email; it is the researcher's responsibility to seek this confirmation if not received within a week of the closing date.

TIMELINE

If short proposals receive a favourable industry review; long proposals will be requested as per the following timetable:

21 July - Applicants notified by email of success in moving to second stage – long proposal is requested.

23 August - Deadline for submission of long proposals.

Mid Dec - Applicants notified of funding outcome.

CONTACT

Phone 07 3225 3600
Email proposals to anne@acarp.com.au.

acarp.com.au

STRATEGIC DIRECTION

ACARP is seeking research driving minimised emissions and environmental impact of industry.

Proposals should have the scope to deliver significant benefit to industry in the following key priority areas.

Underground	Open Cut	Coal Preparation	Technical Market Support	Mine Site Greenhouse Gas Mitigation
• Minimise scope 1 and 2 emissions. • Beneficial use of mine gas. • Management of methane in ventilation and gas drainage systems. • Automation and roadway development technologies. • Improved understanding of geological conditions.	• Lowering / removing emissions generation activities. • Alternative land use post mining beyond the traditional vegetation replacement. • Water contamination, use and efficiency management. • Tailings management alternatives. • Precious metals extraction from mining and beneficiation processes.	• Optimal tailings management and closure practices. • Energy and water efficiency. • Remote and autonomous development technologies on stockpiles. • Asset utilisation, maintainability and reliability.	• Research using the pilot scale HELE testing facility with complementary techniques. • Metallurgical coke and PCI to support low carbon blast furnace ironmaking. • Coal to coke conversion and coke performance linked back to properties of coal. • Laboratory scale demonstration of potential new large scale products from coal and waste products.	• Innovative means for safe mitigation and accurate measurement of fugitive mine site gas emissions.

Complementary priorities have also been developed by ACARP's technical committees in line with this strategic direction and are separated into the areas of:

- Underground
- Open Cut
- Coal Preparation
- Technical Market Support
- Mine Site Greenhouse Gas Mitigation

Researchers are encouraged to consider how the time to delivery of their research could be effectively reduced and larger significant projects will be strongly considered. Committees encourage researchers to proactively engage on the scope of prospective submissions and will provide guidance in shaping the proposals to effectively address the issues.

These priorities are not prescriptive but should act as a guide to the areas in which ACARP is seeking research proposals.

GUIDELINES

- **All proposals must have the proposal summary sheet attached (2023 version). This is available from www.acarp.com.au.**
- **Proposals must be no longer than 6 pages (including the proposal summary sheet).**
- **The submission should be a single unsecured PDF document.**
- **Letters of commitment from other sources are not required at short proposal stage.**
- **Background materials such as company profile, publication lists and detailed CVs should not be included.**
- **Proposals are to be submitted to anne@acarp.com.au.**

In preparing a proposal, consideration should be given to the justification for the project:

- How will the results benefit the Australian coal industry?
- Should funding other than by ACARP be sought?
- Does the proposal address at least one of the key priorities specified in this publication?

The proposal should clearly define the objectives of the research; describe the benefits to coal producers from the research, and outline how the research will be carried out.

FORMAT FOR SHORT PROPOSALS

Short proposals should be no longer than 6 pages (including proposal summary sheet), and must include:

Executive Summary

- State the objective, outline the approach to be taken and state the expected outcome.
- The Executive Summary should be the only item on page 2 of the submission and should not be longer than a single page.

Project History

If the proposal directly or indirectly follows on from a previous ACARP project, this should be noted, giving a concise summary of the previous project's outcomes (include project number).

Clear Statement of Objectives

It is essential that the objectives identify the problem to be solved. The objectives should not be a précis of the work program, but a simple statement of what is to be achieved, e.g. develop a prototype machine, develop a technique, understand a mechanism.

Expected Outcomes and Benefits

ACARP recognises that every research project has an element of risk and not all projects will succeed. The risks and rewards in the project should be made clear and should indicate:

- The likelihood of success and how the work fits within the priorities.
- Estimate the size and nature of the benefits of success, in dollar terms if possible.
- The outcomes that can be expected at the end of the project should be clearly stated. For example, if a new device is to be developed, is this project proof-of-concept, or will it produce an industry scale prototype?

Brief Summary of the Work Program

There is no need for a detailed work program at this stage. The methodology used to achieve the objectives, along with a technical justification, should be outlined. Points to cover include:

- Demonstrate a commitment to complete in a timely manner.
- Test procedures and facilities to be used.
- Whether this is a laboratory, pilot scale, or field demonstration project.
- Detail the critical problems and how they will be solved.
- Document methods of delivery for technology transfer e.g. Workshops, papers etc.

Safety Implications, If Any

The safety aspects of the research must be clearly outlined:

- Detail any potential safety hazards in carrying out the research.
- Note the impacts of successful research on industry safety, health, environment and community.

List of Key Personnel

- The project leader will be the primary point of contact with ACARP and will be responsible for the preparation of all relevant reports as well as the technical direction and management of the project.
- Other key personnel should be listed.
- Do not include detailed CVs, references or publication lists.

Budget

A detailed budget is not required at this stage, but proposals should demonstrate sufficient resources to ensure success. The total amount required, the funds requested from ACARP and funds from other sources should be indicated. The budget should include:

- Number of work days.
- Cost of work days including overhead component.
- Consumables and equipment purchases.
- Travel to site and six monthly review meetings.
- Costs related to site access (inductions etc).

Proposals should be costed on a GST EXCLUSIVE basis. Project invoices will be for agreed progress payments plus any GST payable.

Support

- If other organisations or individual coal producers are to meet part of the project cost, or provide host sites for testing or other in-kind support, it is the responsibility of the researcher to confirm that this support has been received.
- **Letters of commitment or site access forms are not required at short proposal stage.**
- Projects will not commence until ACARP is satisfied that this in-kind support will be realised.

UNDERGROUND

The Underground Committee is seeking research proposals to materially improve the health, safety and sustainability of underground mining operations. In particular, the industry is seeking proposals dedicated to addressing the following:

- **Minimise scope 1 and 2 emissions from underground mines.**
- **Beneficial use of mine gas.**
- **Management of methane in ventilation and gas drainage systems.**
- **Extending automation and roadway development technologies.**
- **Providing improved understanding of geological conditions to be encountered prior to mining.**

Proposals that address the KEY strategic direction (see page 2) - ACARP is seeking research driving minimised emissions and environmental impact of industry - will be given priority.

IMPROVED HEALTH AND SAFETY

- Prevent harm from spontaneous combustion, ignitions, mine fires, extreme heat, explosions, outbursts, coal bursts, respirable dust, silica dust, ventilation and strata failures.
- Improved understanding, detection, prediction, protection, selection and design of major hazard management systems.
- Operator interfaces and vehicle interaction: Improving automation, remote monitoring and control.
- Airborne and noise contaminants: Review of sampling practices, measure and control effectiveness and understand risks associated with contaminants.
- Emergency response measures: Adequacy and effectiveness.
- Improved psychosocial and mental health outcomes.

IMPROVED TECHNICAL ASSESSMENT OF COAL DEPOSITS

Exploration

- Downhole geophysical surveys: Improved processes for the derivation of additional value from surveys.
- Geological features: Better resolution in the interval between surface and target seams with emphasis on near surface.

Resource Evaluation

- Studies on the development of coal deposits with specific focus on detection and management of hazardous ground conditions and applicable mining methods.

Strata Control and Hydrology

- Scanning detection methods for underground roadway monitoring, rock mass classification, ground movement and hazard detection.
- Prediction of strata anomalies and discontinuities (equipment automation, monitoring data acquisition).
- Gas and hydrogeology – Improved assessment and evaluation including:
  - Impacts of groundwater on stability and degradation of material and support system properties.
  - Impacts of mining on surface and groundwater including aquifer interaction and interaction with the mining horizon.
  - Impacts of dewatering and degassing on stress and strength resulting from gas drainage and/or production.
- Improved strata support installation safety; equipment and practices.
- Long term pillar stability for mine closure.
- Implications of increase in stress and load on strata.

HIGHER PRODUCTIVITY MINING

- Roadway development: Improvements in advance rates and environment conditions leading to an integrated system comprising cutting, strata support, continuous haulage, logistics, and panel advancement.
- Mine logistics: Improved management, more efficient design of men and material transport and handling systems.
- Remote control and automation: Application of advanced mining processes to increase productivity and reduce operator exposure to hazards.
- Designs of lower seem mining systems.

MINING SYSTEMS AND EQUIPMENT RELIABILITY

- Enhanced safety, output and energy efficiency: Particularly targeting alternate power storage and delivery e.g. electric, through improvements in design, operability and maintainability.
- Materials and manufacturing techniques: Reduction in weight, improvement in corrosion protection, fatigue and wear life.
- Advancing the introduction of modern technology: In particular for electrical equipment in hazardous areas.

VENTILATION AND GAS MANAGEMENT

- Improved assessment and evaluation of seam gas reservoir characteristics and potential interaction with the mining horizon.
- Improved understanding and measurement of outburst risk prediction parameters.
- Innovative gas drainage practices: Improvement efficiency and effectiveness. Design of post drainage systems to minimise spontaneous combustion risks.
- Design ventilation systems to minimise generation of VAM.

COAL BURST

- Identification of elevated coal burst risk domains.
- Establishing risk mitigation measures for development and longwall mining in areas which may have a coal burst hazard.

OPEN CUT

These are the significant and urgent issues for open cut research priorities in 2023:

- **Lowering / removing emissions generation activities.**
- **Alternative land use post mining that includes innovative business opportunities beyond the traditional vegetation replacement, especially if they promote overall GHG emissions reductions or transition from coal mining to land uses that support local communities.**
- **Water contamination, use and efficiency management.**
- **Tailings management alternatives.**
- **Precious metals extraction from the existing coal mining and beneficiation processes.**

Proposals that address the KEY strategic direction (see page 2) - ACARP is seeking research driving minimised emissions and environmental impact of industry - will be given priority.

Open cut proposals are sought in, but not limited to, the following areas:

LOWER THE COST OF MINING

- Enhance the application of automation within the industry to drive increased profitability.
- Continuous mining technology e.g. cutting technology for overburden and coal removal without the need for drill and blast.
- Cost effective designs and methods to close and rehabilitate mines dealing with dumps, drainage systems and tailings facilities.
- Improve the productivity of trucks and excavators, draglines and dozer push operation.
- Improve equipment efficiency, reliability and materially extending component life.
- Optimisation of capital assets through productivity.
- Improved methods for predicting and reducing catastrophic equipment failures.
- Methods for extending asset life to reduce capital requirements.
- The application of alternative materials to high maintenance areas.
- Innovations that help mine operators improve tyre life.
- Automation of maintenance tasks and diagnostics.
- Enabling actionable decision making through data capture, analysis and machine learning.
- Develop decision support systems for managing data by operators (in-cab interfaces), supervisors (production information) and engineers (HPGPS data into designs, strata recognition into load sheets, etc).
- Establish new methods of fragmentation or improvements on existing methods (e.g. linking strata recognition with explosives optimisation and diggability).
- Develop innovative coal recovery methods, improve dilution rejection in pit and advanced sensing technology to detect variation in coal seam quality.
- Integration of SLAP (Shovel Load Assist Program) for hydraulic excavators/shovels.
- Develop remote, semi-automated or automated mining systems (draglines, excavators, dozers and explosives trucks).
- Establish selective mining techniques (thin seam mining, steep dip [20-90°] highwall/floor mining, remote access of deep seams from boreholes).
- Strata recognition from production drill rigs.
- Investigate novel applications of existing data sources (geological, geotechnical, production etc).
- Investigate the requirements for dump designs when seeking to maximise the ratio of tailings to spoil, by assessing what is needed to maintain dump stability and operating conditions.
- Improve hydrogeological assessment and evaluation of mining including impacts on slope stability and degradation of material properties, particularly in relation to measuring pore pressure in lowwall dumps (without the need to drill).
- Promote the development of affordable, accurate, critical real-time monitoring of pit slopes.
- Improve methods for automating the structural and geotechnical mapping of slopes, including innovative ways of incorporating mapped data into geological models.
- Improve methods for automated intelligent interpretation of downhole geophysical data.

- Innovative methods for the acquisition, capture and modelling of exploration data to enable integration into autonomous mining systems and autonomous geological modelling capability.
- Improve processes for the derivation of additional value from downhole geophysical surveys, specifically in the areas of:
  - Identification and evaluation of discontinuities.
  - Improve rock mass characterisation.
  - Derivation of credible coal quality estimates from non-destructive processes i.e. geophysical logs, CT etc.
  - Establishment and development of leading practice work processes.
- Better resolution of geological features in the interval between surface and target seams with emphasis on near surface.
- Improve understanding of key aspects of Australia's coal basins and how they impact on mining conditions (including structure, stratigraphy, groundwater, coal rank and quality trends).
- Investigate ways to enable faster and cheaper exploration (particularly seismic), aiming towards real-time automation, interpretation and communication of results.
- Innovative practical automated techniques to enable improved methods for the validation and integration of multiple exploration data sets allowing the data to be integrated with other data sets ready for mining autonomy (e.g. live dig/mine plans, integrated stability monitoring platforms).
- Real-time improved methods for reconciliation and updating of exploration data with real-time operational data.
- Practical methods for increasing confidence in estimation and classification of resources and reserves.
- Improving the ability to understand dump stability by investigating methods for automating classification of spoils in real-time to create as-dumped strength models for integration with autonomy and automated slope stability modelling.
- Optimisation of the coal quality testing process with a view to improving yield estimates.
- Optimising rehabilitation planning and management of problematic overburden such as dispersive, saline and sodic materials.
- Management of acid bearing and spontaneous combustible materials.
- Improve techniques to achieve efficient use of raw water, innovative reuse of mine impacted water, and effective management of treatment by-products including brine.
- Sustainable coal washery by-product management with a focus on beneficial use.

ENHANCE CONTROL EFFECTIVENESS TO ENSURE PERSONNEL SAFETY

- Investigate key health and safety issues and management systems, practices and culture, including legislative leading practice alternatives.
- Develop evidence based causal relationships for personnel health impacts from all coal and associated waste mining activities to help guide appropriate regulation.
- Develop common operator interfaces to support interoperation of technical systems on mobile equipment to avoid clutter in the operator cabin (vehicle interaction management, fleet management, GPS, fatigue systems and vital signs, etc).
- Manage health including mental health, alcohol and other drugs, return to work and fatigue, e.g. by reduced exposure to noise, vibration, dust and heat, by determining mental health of employees, etc.
- Improving equipment operator interfaces, vehicle interaction management, and remote control.
- General improvement to the health and safety of mining and maintenance operations through novel manual handling aids, including automated technologies or equipment changes.
- Develop a cognitive recognition method which addresses the normalising effects that are created due to the human brain predominantly operating in a subconscious mode and failing to recognise environment changes that could lead to adverse outcomes.
- Improve the communication to employees and contractors of safety measures such that the information, training and instruction are provided in a method that allows cognitive retention.
- Protection and removal of personnel from hazardous situations such as those around unstable ground, in the vicinity of voids, and around excavations particularly during truck loading.

- Investigate new applications to be able to quickly detect and characterise minor discontinuities and hazards in the distressed, degassed and dewatered zones ahead of mining.
- New rock mass classification methods that link measurable intact rock and discontinuity properties to quantified rock mass constitutive properties while accounting for the inherent anisotropy and heterogeneity of coal measures.
- New methods to automate the incorporation of derived strengths into stability models are required to be able to replace the use of generic rock mass properties.
- Methods for open cut slope geotechnical mapping and deformation monitoring.
- Minimisation of geotechnical risk and uncertainty with a particular focus on deeper excavations and higher spoils; including the improved understanding, modelling, monitoring and management of principal hazards.
- Improved methods for understanding strata failure mechanisms in open cut slope stability, including the role of tension, particularly in regards to effective and user friendly estimation of runout distances prior to failure.
- Development of real-time calculation of stability during mining excavation within excavator equipment cabs, dispatch and calculation within mine planning software (though integration of data sets, stability modelling and interpretation).
- Identify risks and ground response required associated with interaction of planned/advancing open cut mines with current and previous underground workings.
- Improve methods for understanding strata failure mechanisms in open cut slope stability.
- Development of the ability to monitor slope deformation in real-time over an entire site (many km^2) including highwall and lowwall slopes and critical infrastructure (thereby ideally indicating the underlying mechanism behind instability, feeding back into real-time stability calculations).
- Improve the understanding of hydrogeological impacts to slope stability, particularly the degradation of material properties in pits that have been used as water storages for many years.

SUSTAIN OUR LICENCE TO DEVELOP AND EXTEND TENURE

- Improve management of the potential impacts of mining on surface waters, groundwater and the local and/or regional ecosystems supported by these resources.
- Revegetation including species selection and improved methods for the introduction of recalcitrant and/or high interest native species in mine rehabilitation.
- Improve understanding/management of land use conflicts across the mining life cycle including the early identification of issues/aspects necessary to promote win-win outcomes and encourage consensus from competing interests.
- Innovative ways of assessing and determining biodiversity offset value.
- Improve methods for the prediction and management of dust, overpressure, vibration, fumes and noise impacts, in the context of both environment and community health impacts and suited to informing policy frameworks for the development of local and regional air quality criteria.
- Technologies that improve energy efficiency across the mining operations including fuel, electricity, gas, battery capture.
- Reduce environmental pollutants used in the operation and maintenance of assets.
- Improve hydrogeological assessment and evaluation of the groundwater impacts of mining, including aquifer interaction.

ENVIRONMENT AND COMMUNITY

The industry is calling for research to enable it to continually improve its ability to manage environment and community issues. Research is needed to fill knowledge gaps and identify future issues such that stakeholders have confidence in the industry's ability to manage and reduce its impacts.

Proposals are being sought relating to the coal mining industry's license to operate, water management and effective mine site closure and lease/property relinquishment.

Proposals are particularly sought, but not limited to, the following areas:

WATER

- Improved management of the potential impacts of mining on surface waters, groundwater and the local and/or regional ecosystems supported by these resources.
- Improved techniques to achieve efficient use of raw water, innovative reuse of mine impacted water and effective management of treatment by-products including brine.

NOISE AND AIR

- Improved methods for the prediction and management of dust, overpressure, vibration, fumes and noise impacts, in the context of both environment and community health impacts and suited to informing policy frameworks for the development of local and regional air quality criteria.

REHABILITATION AND CLOSURE

- Improved understanding/management of land use conflicts across the mining life cycle including the early identification of issues/aspects necessary to promote win-win outcomes and encourage consensus from competing interests.
- Sustainable coal washery by-product management with a focus on beneficial use.
- Sustainability of mine rehabilitation including aspects such as landform design and evolution, subsidence, performance assessment, biodiversity enhancement, re-establishment of agricultural land uses, landscape function and alternate post mining land uses.
- Revegetation including species selection and improved methods for the introduction of recalcitrant and/or high interest native species in mine rehabilitation.
- Optimising rehabilitation planning and management of problematic overburden such as dispersive, saline and sodic materials.
- Management of acid bearing and spontaneous combustible materials.
- Innovative ways of assessing and determining biodiversity offset value.
- Investigation into aspects of effective mine closure including:
  - Tenure and property relinquishment and the improvement of policy frameworks and options for relinquishment.
  - Sustainable land use and the integration of post mining land use with neighbouring/regional land use.
  - Final voids and the stability of highwall/low walls in perpetuity.
  - Long term impacts that may be associated with post mining surface water and groundwater.
  - The management of residual risk.

Proposals in this category will be considered by the Underground, Open Cut or Coal Preparation committees, as appropriate.

COAL PREPARATION

The industry faces a range of existing and emerging challenges. These challenges translate to opportunities in coal preparation research, the broad areas of focus being:

- **Optimal tailings management and closure practices.**
- **Energy and water efficiency.**
- **Remote and autonomous development technologies on stockpiles.**
- **Asset utilisation, maintainability and reliability.**

Proposals that address the KEY strategic direction (see page 2) - ACARP is seeking research driving minimised emissions and environmental impact of industry - will be given priority.

Proposals offering practical and commercially viable outcomes that can be implemented relatively quickly are especially encouraged. Consideration will also be given to projects addressing the traditional areas of coal preparation improvement, such as efficiency optimisation, moisture and cost reduction.

BENEFICIATION

Proposals are sought to deliver safer, lower cost, higher efficiency, or higher throughput from existing operations. This includes step change technologies that could materially change the plant and/or markets for future coal utilisation, or utilisation of waste streams.

- Enhancing performance of existing technologies related to dry tailings disposal.
- Enhancing mechanical and electrical systems to support energy reduction (e.g. pumping and conveying).
- Improved OEM equipment designs that support maintenance practices to reduce risk to maintenance personnel and prevent downtime.
- Improved prediction of total cost of ownership, including better definition of the drivers behind different maintenance strategies for the development of new, and management of existing, infrastructure (e.g. to ensure structural integrity).
- Developing leading practice operations and maintenance handbooks focussing on energy and water efficiency and dry tailings disposal.
- Encourage industry uptake and commercialisation of high definition analysis techniques as alternatives to heavy liquids.
- Improved start-up/shutdown sequences to minimise downtime.
- Development of data analytical tools including AI, machine learning, digital twins etc.
- Automation of dozers on stockpiles.
- Development of high capacity dry processing techniques that are less sensitive to feed size and look at processing techniques closer to pits i.e. transport only product from pit.
- Improving the mechanical dewatering and handling of fine product and reject streams.

SUSTAINABILITY

It is imperative to continue to improve health, safety and community outcomes and reduce the environmental impacts of the coal preparation plant process. This may include:

- Developing tailings disposal processes to reduce cost, improve environmental outcomes and support effective closure outcomes.
- Developing secondary dewatering techniques at the point of deposition.
- Reducing noise and dust generation at each process of the coal chain from the point of extraction through to the port.
- Maximising water recovery and recycle.
- Developing improved tailings reprocessing methodologies.
- Processing coal without the production of wet tailings.
- Utilisation, recycling or repurposing of waste streams from the beneficiation process.

TECHNICAL MARKET SUPPORT

Technical Market Support research priorities have been set recognising the importance of ensuring the long term viability of Australian metallurgical and thermal coals in a carbon constrained world.

Through funding of research, the industry seeks to support development of a talented and diverse pool of researchers.

Proposals that address the KEY strategic direction (see page 2) - ACARP is seeking research driving minimised emissions and environmental impact of industry - will be given priority.

Specific priorities are:

- Research projects using the pilot scale HELE testing facility currently being developed, together with complementary techniques focused on:
  - Managing fouling.
  - Reducing fine particulate emissions particularly associated with co-firing of biomass.
  - Coal quality requirements for co-firing hydrogen and ammonia and for oxygen enrichment.
- Development of metallurgical coke and PCI to support low carbon blast furnace ironmaking through understanding:
  - the impact on coking coal quality requirements and steelmaking emissions through coal blend additives such as biomass and waste materials.
  - coal quality requirements for manufacture of ferro-coke and the impact ferro-coke on BF operations and fuel requirements.
  - impact of hydrogen and biomass co-injection on required BF performance and metallurgical coke quality.
- Integrated understanding of coal to coke conversion and coke performance linked back to properties of coal which supports technical marketing of Australian coking coals.
- Laboratory scale demonstration of potential new large scale products from coal and waste products.

MINE SITE GREENHOUSE GAS MITIGATION

Proposals that address the KEY strategic direction (see page 2) - ACARP is seeking research driving minimised emissions and environmental impact of industry - will be given priority.

Fugitive gases are the largest source of greenhouse gas emissions from coal mining operations and as such are a primary focus of the Mine Site Greenhouse Gas Mitigation Committee. The industry seeks innovative means for safe mitigation and accurate measurement of fugitive mine site gas emissions.

UTILISATION OR DESTRUCTION OF MINE GAS

Dilute sources of seam gas such as mine ventilation air are a significant challenge. Proposals aimed at combusting or utilising dilute gas (0.5% or less methane) or increasing the methane concentration to usable levels, in a safe and cost-effective manner without the need for a supplementary fuel, are encouraged.

CAPTURE OF MINE GAS

The Committee is interested in proposals with potential to reduce gas drainage costs, maximise gas recovery and improve the quality and consistency of mine gas production. In particular, the Committee would welcome projects examining the integration of gas drainage with open cut mining operations, including the implications for mine design, economics and environmental approvals.

Before submitting a proposal in this area, it should be noted that:

- **Demonstration and large-scale test work is beyond the financial capability of ACARP.**
- **The Committee will only consider proposals addressing greenhouse gas emissions resulting from the production of coal, not due to the utilisation of coal.**
- **Commercial power generation technologies for high purity methane such as drainage gas are being increasingly adopted and are not seen as a high priority for further ACARP research.**