



**INTELLIGENT  
LAND  
MANAGEMENT  
AT SOUTH32**



We can create resilience to climate change through intelligent land management.



# INTELLIGENT LAND MANAGEMENT AT SOUTH32



## WHAT IS INTELLIGENT LAND MANAGEMENT?

Intelligent Land Management, or ILM, is a holistic land management program underway to transform South32 land holdings, which are otherwise unused, into areas that increase climate resilience and generate shared financial, social and environmental value.

Our ILM initiative is part of our broader Climate Change Strategy and one of the pathways to achieving climate resilience. For more information on climate change see 'Climate Change at South32' at [www.south32.net](http://www.south32.net).

### ILM has four guiding principles:

1. Protect biodiversity
2. Preserve an ecosystem service
3. Leave behind a positive legacy for the community
4. Generate enough revenue to ensure the project can be successful and independent from South32 in perpetuity.

These principles are applied to help us select suitable ILM initiatives.

Our ILM initiative has been designed to take action in both reducing our contribution to climate change and creating resilience to climate change impacts in the regions in which we operate.

South32 is a large landholder with 525,577 hectares of land owned, leased or managed under our control in FY2016. This total amount includes land that has been disturbed, rehabilitated or is under conservation (Figure 1).

Being a large landholder means we are in a unique position to use this land "intelligently" and create resilience to climate change for our host communities, biodiversity and our own operations long-term. Resilience to climate change can be achieved by taking action in line with climate science.

## LAND METRICS

FIGURE 1: South32 land owned, leased or managed.



The Intergovernmental Panel on Climate Change (IPCC) is the international body designated by the United Nations to assess and communicate the science related to climate change.

The IPCC acts on behalf of the 195 member states and works by compiling the best available science to come to a view on what is causing climate change, what impacts climate change will have on the planet and how we can respond. We accept the scientific findings of the IPCC on climate change.<sup>1</sup>

<sup>1</sup> <http://www.ipcc.ch/report/ar5/index.shtml>

The IPCC report concluded that an increased amount of greenhouse gases in the atmosphere, generated from anthropogenic (manmade) sources, is causing climate change. The IPCC also provides insight into what we can do to stop climate change impacts and how quickly we need to do it.

ILM initiatives aim to have a carbon benefit, whereby we use land resources to remove or avoid adding more greenhouse gas to the atmosphere. For example, this may include protecting land for conservation purposes so that trees and soil can capture carbon and prevent it from entering the atmosphere.

The IPCC also looks at what physical impacts climate change will have and how resilient we are to these impacts. The IPCC concluded that as the global temperature warms we are losing, and will continue to lose, biodiversity as it struggles to adapt to locally changed physical conditions (for example, changes in rainfall). This includes the loss of both fauna and flora.

To support resilience to the physical impacts of climate change (including our host communities and our own operations) the ecosystems surrounding us need to be healthy and functioning. This means working to protect and provide land so endemic biodiversity has less pressures to existence, such as feral animals or from human development.

# ILM ILLAWARRA PROJECT IN NEW SOUTH WALES, AUSTRALIA



Illawarra Metallurgical Coal, Australia.

## DEMONSTRATING OUR ILM PRINCIPLES IN ACTION

The ILM Illawarra project aligns to the four principles of ILM project design; protecting biodiversity, preserving an ecosystem service, community legacy and financial independence.

We own significant land resources, though only 5 per cent of our overall land holdings are disturbed due to mining. At Illawarra much of the land we own is “buffer land” to protect our neighbours from any potential impacts of mining. The ILM Illawarra project aims to shift our buffer lands from being largely idle to delivering climate resilience over the long-term. Selected Illawarra lands will be protected for conservation purposes, using mechanisms such as the New South Wales BioBanking scheme (see explanation under principle 4), to ensure future governance beyond our mine life.



Growing endemic species at Illawarra Metallurgical Coal, Australia.

## PRINCIPLE 1: Protect biodiversity

At our Illawarra operation 300 hectares of land is being considered for conservation purposes. In FY2016, we undertook detailed biodiversity surveys of the land that we own but do not mine, to understand its biodiversity value. Our ILM land management activities at Illawarra are designed to protect this biodiversity by taking such actions as clearing feral animals or non endemic biodiversity.

## PRINCIPLE 2: Preserves ecosystem services

Ecosystem services are the benefits that people obtain from ecosystems, including services such as:

- Water, food and biodiversity
- Regulating services such as flood and disease control
- Nutrient cycling, such as clean air and soil.

The ILM Illawarra project will use South32's freehold land, adjacent to the Appin mine, to provide a protection corridor along the Nepean River, Lizard Creek and Cataract River valleys, joining already protected lands (Sydney catchment and National Parks). Protecting this area provides water, biodiversity and carbon sequestration ecosystem services.



Landscape at Illawarra, Australia.

## PRINCIPLE 3: Community legacy

Leaving behind a healthy functioning ecosystem provides a positive legacy and benefit for future generations. Population growth in the greater Sydney area has increased the amount of land being used for human development, placing pressure on critically endangered vegetation. In the long-term the ILM Illawarra project seeks to develop partnerships with local communities to manage this land so it remains available and can provide quality of life for future generations.

## PRINCIPLE 4: Financial security

For projects to be successful over the long-term they need financial security and good governance. Our ILM Illawarra project will use the New South Wales BioBanking scheme, which puts in place a Trust to manage land for conservation purposes and ensures land management activities are conducted every year. BioBanking is a market-based scheme that provides a biodiversity assessment process, a rigorous and credible offsetting scheme, as well as an opportunity for landowners to generate income. For more information on BioBanking see [www.environment.nsw.gov.au/biobanking/](http://www.environment.nsw.gov.au/biobanking/).

## REHABILITATION

In FY2016, 60 per cent of the land we disturbed was being rehabilitated. This compares to a mining industry average of 8 per cent reported in FY2016<sup>2</sup>.

ILM initiatives can support our rehabilitation efforts by keeping the surrounding lands healthy, so that biodiversity can more easily return to impacted land as it regenerates.

### INTEGRATION OF REHABILITATION WORK Worsley Alumina



At Worsley Alumina, we have implemented a comprehensive program to rehabilitate disturbed land. This program has produced excellent results over more than 2,500 hectares of land since 1986.

Progressive earthworks optimise the use of topsoil and recreate a soil profile capable of sustaining endemic biodiversity and building resilience against severe weather events. Species research has supported strategic seeding and planting resulting in the restoration of the ecosystem structure and function.

## CLOSURE

To ensure value is retained for future generations, we make decisions today that will contribute to a better tomorrow. The guiding principles, which support our closure planning are: fit for purpose, consistent with regulatory requirements and fully integrated into our business planning cycle.

Closure plans are maintained for each operation and these address closure requirements including completion criteria and future land use. These also include requirements for rehabilitating disturbed areas, decommissioning infrastructure, remediating contaminated sites, treatment

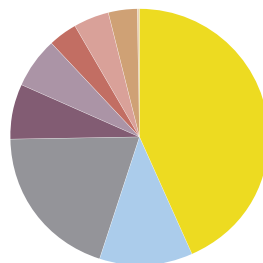
<sup>2</sup> The industry rehabilitation average should be considered approximate because it has been calculated from 18 publicly-listed multinational mining companies and their FY2015 reported data and not all companies obtain third-party assurance across their land metrics.

and disposal of wastes, water resource management, and post closure monitoring and management. These plans provide the basis for closure cost estimates and associated financial provisioning.

In FY2016, South32 conducted a closure planning review of our most significant operations to ensure our closure provisions adequately captured scope, regulatory requirements, risks, planning assumptions, and associated costs to rehabilitate and restore land and water resources.

The chart below shows our closure provisions at the end of this review for all our operations. Closure provisions vary between operations as a result of disturbance area, infrastructure, waste material, geographical location and closure timing.

### CLOSURE AND REHABILITATION PROVISION BY OPERATION<sup>3</sup>



Total: \$1,414M

- South Africa Energy Coal \$616M
- South Africa Aluminium \$164M
- Worsley Alumina \$278M
- Cerro Matoso \$100M
- Cannington \$88M
- Mozal Aluminium \$54M
- Illawarra Metallurgical Coal \$61M
- Brazil Alumina \$52M
- Other \$1M

<sup>3</sup>All monetary amounts are expected values of future cash flows, discounted to their present value (USD).

Refer to closure and rehabilitation notes on pages 156-158 of the South32 annual report 2016 for further information. ILM supports our closure planning by helping rehabilitation be successful. ILM also works to ensure the long-term focus is on biodiversity and ecosystem service preservation throughout the mine's operational life, so that at end of mine life we leave behind a positive legacy for our host communities and broader society.



## THE GLOBAL GOALS For Sustainable Development



### SUSTAINABLE DEVELOPMENT GOALS

South32 supports the United Nations (UN) Sustainable Development Goals (SDGs). The United Nations 2030 Agenda for Sustainable Development defined 17 SDGs in September 2015 that seek to address the world's greatest challenges. The SDGs build on the work undertaken through the Millennium Development Goals, but have a greater focus on the involvement of the private sector. Our approach to intelligent land management supports three SDGs:



#### SDG 11 - SUSTAINABLE CITIES AND COMMUNITIES

as sustainable development cannot be achieved without significantly transforming the way we build and manage our urban spaces.



#### SDG 13 - TAKING ACTION ON CLIMATE CHANGE

where we are taking urgent and strategic action to combat climate change and its impact.



#### SDG 15 - SDG15 LIFE ON LAND

is understanding our role to sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss.

In FY2017, we will continue to align our activities to the specific SDG targets underpinning each SDG goal, in order to advance the 2030 Agenda for Sustainable Development.



# WHO WE ARE



## OUR PURPOSE

Our purpose is to make a difference by developing natural resources, improving people's lives now and for generations to come. We are trusted by our owners and partners to realise the potential of their resources.



## OUR STRATEGY

Our strategy is to invest in high-quality metals and mining operations where our distinctive capabilities and regional model enable us to stretch performance in a sustainable way. By maintaining financial discipline and continually optimising our portfolio we will deliver sector leading total shareholder returns.



## OUR VALUES

### CARE

We care about people, the communities we are a part of and the world we depend on.

### TRUST

We deliver on our commitments and rely on each other to do the right thing.

### TOGETHERNESS

We value difference, listen and share, knowing that together we are better.

### EXCELLENCE

We are courageous and challenge ourselves to be the best in what matters.

## IMPORTANT NOTICES AND DISCLAIMER

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