



**Mission** To deliver superior returns from finding, developing and operating gold/copper mines.

**Vision** To be the Miner of choice™. We will lead the way in safe, responsible, efficient and profitable mining.

### Location

The Lihir gold operation is located on Aniolum Island, the largest island in the Lihir Island group. Aniolum Island is approximately 900 kilometres north-east of Port Moresby in the New Ireland Province of Papua New Guinea (PNG).



### History

Gold mineralisation was discovered at Lihir in 1982, following which a major exploration campaign and feasibility study was conducted by a joint venture between Kennecott Explorations Australia and Niugini Mining Limited between 1983 and 1992.

The Lihir Special Mining Lease (SML) was granted in 1995 following comprehensive environmental and other studies.

Under the terms of the original project approvals, the Lihir project (including the SML) was transferred to a new PNG company - Lihir Gold Limited (LGL). Rio Tinto established Lihir Management Company to develop and operate the mine on behalf of LGL. In 1997 the first gold was poured at Lihir.

In 2005, Rio Tinto divested its interests in Lihir, allowing the Lihir operations to become owned and operated by LGL.

In August 2010, Newcrest acquired the Lihir operations as a result of the merger between Newcrest and LGL.

### Ownership

Lihir is owned and operated by LGL, a 100% owned subsidiary company of Newcrest.

### Gold deposit

The gold deposit at Lihir is located within the Luise Caldera, an extinct volcanic crater that is geothermally active. It is one of the largest known gold deposits in the world. The principal component deposits within the Lihir open pit are called Lienetz, Minifie, Coastal and Kapit.

Exploration in the Luise Caldera has identified several additional mineral deposits, which are collectively called the Ladolam Deposit. The limits of the mineralisation have not been completely defined and are open at depth, along strike, and to the east (currently limited by the Pacific Ocean).

For the year ended June 2015, 688,714 ounces of gold were produced.



## Environment

Newcrest understands how integral the environment is to its business and has strong systems in place to minimise and manage potential impacts.

The Lihir gold operation is located in an inactive volcanic area, which retains geothermal energy. Since 2003, geothermal energy has been used at Lihir to provide some of the operation's power needs and reduce greenhouse gas emissions.

Lihir's geothermal power plant was the first project in PNG to be registered for carbon credit trading under the Kyoto Protocol.

Lihir maintains an ISO 14001 certified Environmental Management System (EMS), which assists in the planning and implementation of environmental management measures.

Lihir uses Deep Sea Tailings Placement (DSTP). In view of the heavy rainfall typically experienced on Niolam Island, the lack of suitable area for a tailings storage facility and the high seismicity of the region, DSTP was the preferred tailings placement method for Lihir. Plant tailings are stabilised and diluted before being discharged from a subsea pipeline onto the deep seabed, below the biologically active upper layers of the ocean. Baseline studies were undertaken prior to the approval by PNG environmental authorities and commencement of the DSTP. Regular monitoring is undertaken to verify the operational performance of the system.

Waste rock from the mine is either used for construction purposes or transported in barges for off-shore submarine disposal. Submarine disposal is carefully planned and controlled to achieve a continuous slope along the steeply dipping sea floor and to prevent uncontrolled slumping triggering a wave effect.

## Mining and ore processing

Most of the ore is refractory and is treated using pressure oxidation before the gold is recovered by a conventional leach process.

Newcrest has completed a major expansion of the Lihir process plant which included the installation of a new crushing facility and upgrades to the ore processing plant. The plant expansion will increase flexibility of the operation, improve the reliability of single pieces of equipment and lower fixed costs per tonne.

## Safety and health

Newcrest is committed to employee and community health and safety and Lihir undertakes a range of education, training, counselling, prevention, and risk-control programs to assist employees, their families, and community members.

Lihir has improved health access, including through the operation of a medical centre, which delivers health benefits for the Lihir community.

## Local hiring, training and development

Lihir's recruitment, training and localisation strategy aims to build the capacity of Newcrest's Lihirian and PNG workforce. Aligned with Newcrest's local hiring policy, employment preference is given first to Lihirians, then to individuals from New Ireland Province, followed by individuals from other areas of PNG.

## Economic contribution

Lihir creates economic value for PNG and local communities in a number of ways, including employment, purchasing goods and services from local suppliers and contractors, payment of government royalties and taxes, payment of landowner royalties and land use compensation, investments in public infrastructure and services and a range of indirect economic benefits.

The Lihirian community also benefits from the social and economic development programs delivered under the Lihir Integrated Benefits Package.

During the 2013-14 financial year, the Lihir operation provided A\$67.7 million in community expenditure and A\$35.9 million in total payments to the local, provincial and national government\*.

At Lihir, Newcrest supports PNG-based suppliers and businesses where possible. Newcrest also contributes to the local economy in accordance with agreements with the government and landowners by providing public infrastructure and services, including access to health services, the provision of electrical power and water to local villages.

Lihir funds provincial public infrastructure through the National Government's Tax Credit Scheme (TCS). TCS projects are agreed in consultation with the New Ireland Provincial Government and are aimed at addressing provincial development priorities.

\* Newcrest Sustainability Report 2014

## CONTACT

Newcrest Corporate Affairs

T: + 61 3 9522 5593

E: [corporateaffairs@newcrest.com.au](mailto:corporateaffairs@newcrest.com.au)

[www.newcrest.com.au](http://www.newcrest.com.au)