

Maximizing Sustainability Through Continuous Mining Operational Improvements

PT Amman Mineral Nusa Tenggara for the Ministry of EMR 2021
International Seminar on Coal and Mining Technology

June 23, 2021



01.

Introduction to Amman Mineral

COMPANY OVERVIEW

PT Amman Mineral Nusa Tenggara



PT Amman Mineral Nusa Tenggara (“Amman Mineral”) is Indonesia’s second largest copper concentrate producer with strong execution capabilities, significant mineral resources and low-cost base.

Amman Mineral operates Batu Hijau Mine and other promising copper and gold prospects in West Sumbawa Regency, West Nusa Tenggara Province. Amman Mineral holds Operation Production Special Mining Business License (IUPK-OP) with 25,000 ha, which extends to 2030.

Batu Hijau has an estimated reserve of 7,380 Mlbs of copper and 9,190 Koz of gold as of 31 December 2020. We operate a processing plant with 120kt capacity per day; 137-Megawatt (“MW”) coal-fired power plant plus 45MW diesel power plant; and a port with a ferry terminal, air services, and has an established town-site.



No. 2

Copper (“Cu”), gold (“Au”) and silver (“Ag”) producer in Indonesia



20 years

Successful mining operation

COMPANY OVERVIEW

Amman Mineral Board of Commissioners



HILMI PANIGORO
President Commissioner



ALEXANDER RAMLIE
Commissioner



ARIEF SIDARTO
Commissioner

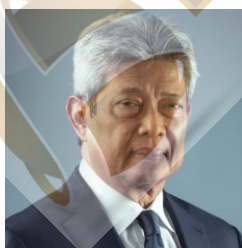


ANDY HADIANTO
Independent Commissioner



RACHMAT MAKKASAU
President Director

Rachmat Makkasau has worked in the mining industry for over 26 years and has a well-rounded knowledge of the business, covering everything from operations to leadership and human resources to business development. His experience in multiple project expansion enables him to bring in stability and credibility in the smooth transition of ownership to Amman Mineral. He is an active member and advisor on several industry and mining associations, He also obtained degree in Economics and Master in Management from Bina Nusantara University.



AGUS PROJOSASMITO
Vice President Director

Agus is a seasoned Indonesian investment banker with more than 30 years of experience in the industry. He started his career as the Head of Capital Markets at Danareksa (Persero) in 1982. His extensive career in the banking industry has brought him to sit at various executive positions including as the Vice President Director at DBS Securities Indonesia (1992 – 1995), Managing Director at Danareksa (1995-2001), President Director at PT Nusantara Mahabakti (2007 – present). Prior to joining AMMAN, Agus was the founding CEO of PT Ithaca Resources. He obtained his degree in Economics from Satya Wacana Christian University before completing his diploma in Economics of Development from the Australian National University.

KEY OPERATING ASSETS



Batu Hijau Mine and Elang Block located in Sumbawa, NTB



- Prospect locations
- Batu Hijau Mine operations
- Elang drilling operations
- IUPK block
- Pinjam pakai area
- Project area

A large open pit mine operation, producing copper, gold and silver since 2000.

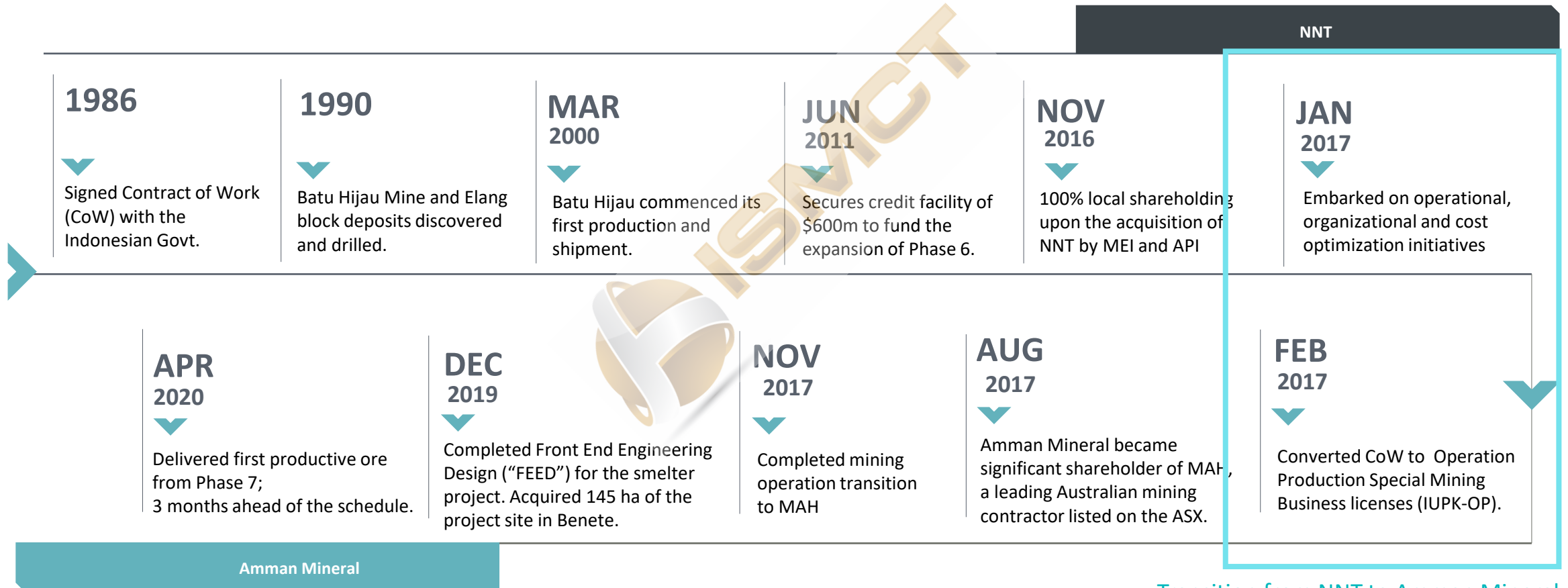
The Elang deposit is categorized as a Super Giant by US Geological Survey ("USGS") classification standards.

Source: Company information



HISTORICAL MILESTONES

Amman Mineral will continue its Batu Hijau operation through the development of Phase 7 and will leverage on the existing world-class infrastructures to develop all other resources in its 25,000-ha concession

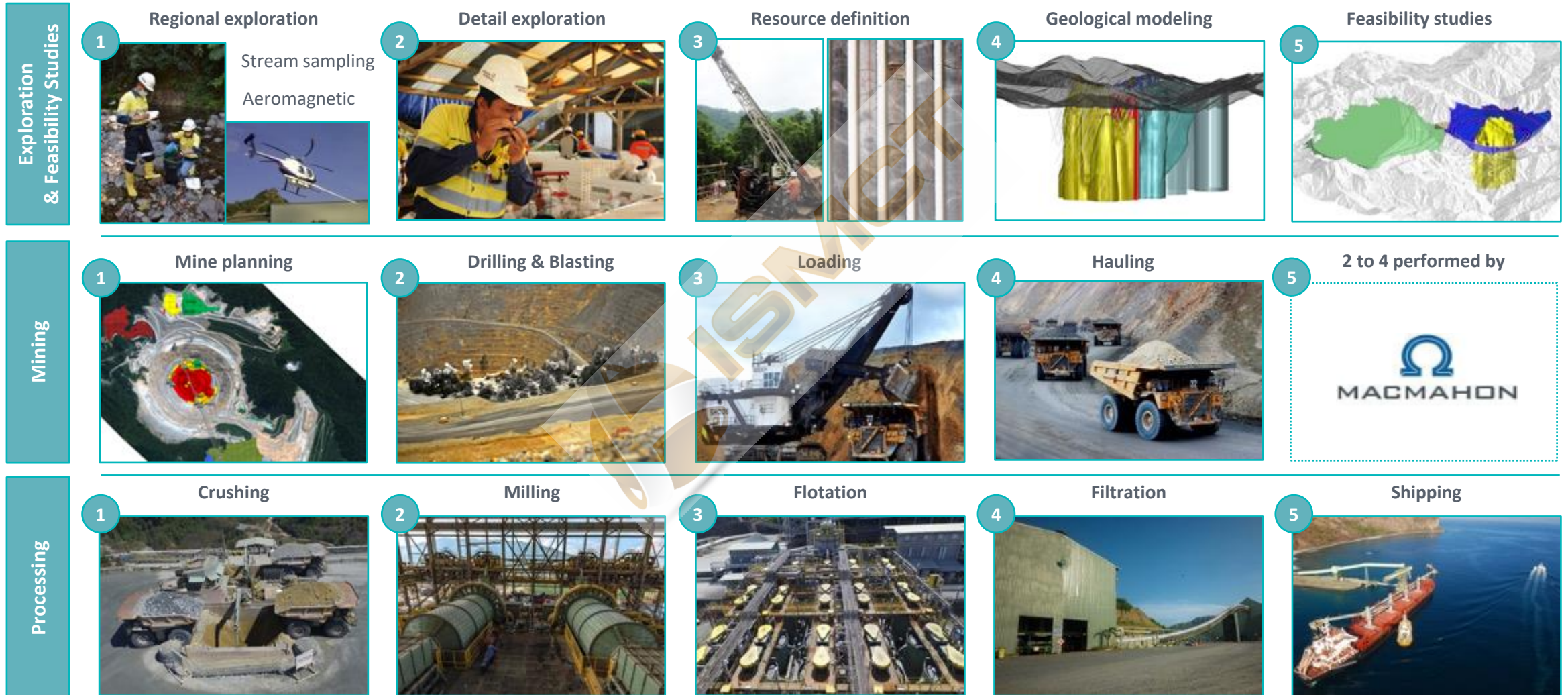


Transition from NNT to Amman Mineral

CORE ACTIVITIES



Exploration, Extraction, and Processing of Copper Concentrates



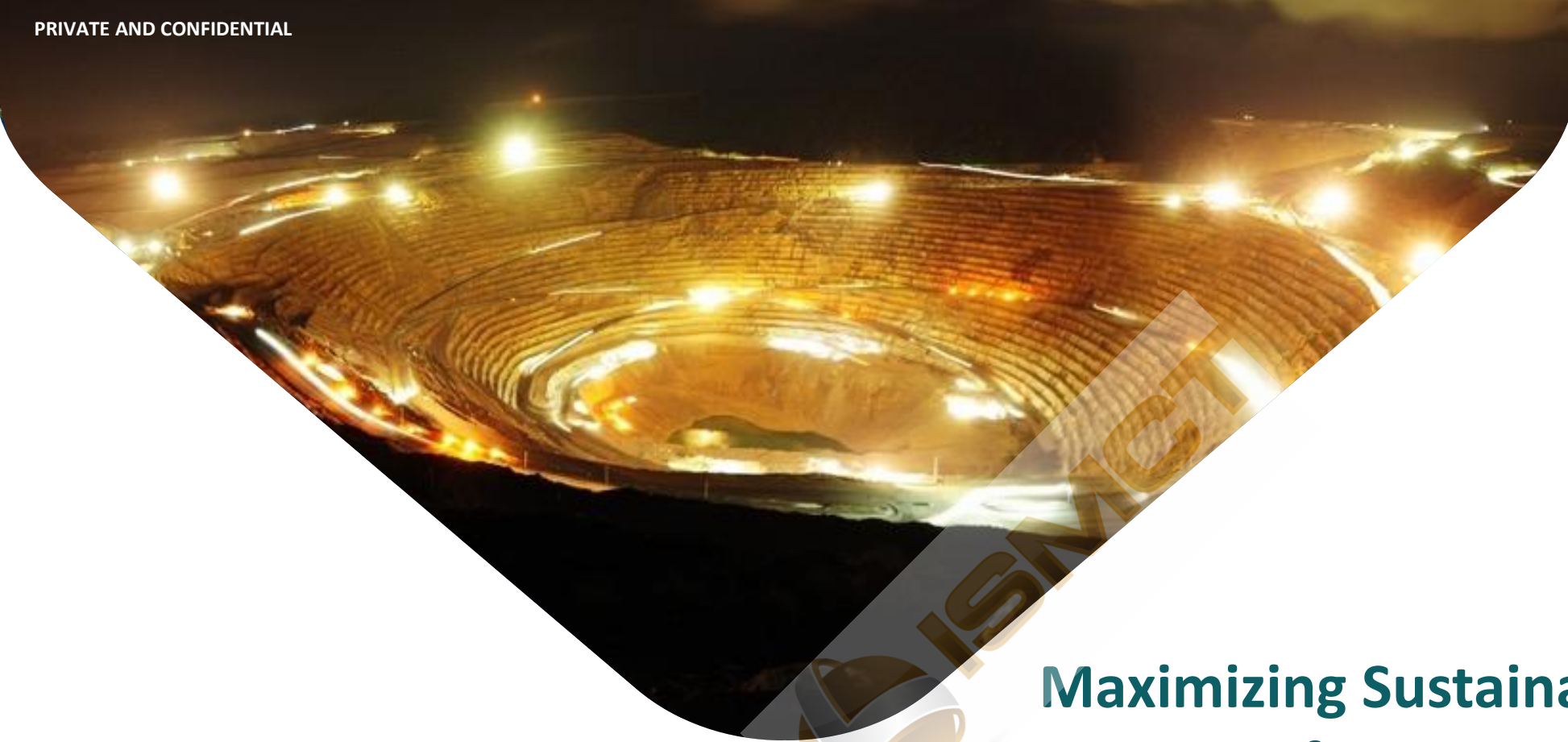
BATU HIJAU MINE OVERVIEW

Ongoing Phase 7

PHASE 6 2.1 km diameter Newmont
PHASE 7 3.0 km diameter Amman Mineral

PHASE 6 800 m deep Newmont
PHASE 7 900 m deep Amman Mineral

Phase 7 cut-back is currently in the acceleration stage with 2019 focused on waste removal prior to commencement of **217 mt ore mining starting in 2020**; During the time when there is no fresh expit ore, we are processing from our 279 mt stockpile.



02.

Maximizing Sustainability Through Performance Improvements

THINKING BRAVELY OF OUR FUTURE

Since transitioning in 2017, Amman Mineral has never stopped striving to perform better in all aspects of its operations, driven by our new vision and mission

1. Guided by new vision to be a **Transformative Organization Creating a Legacy of Best**

VISION
To be a transformative organization creating a legacy of best

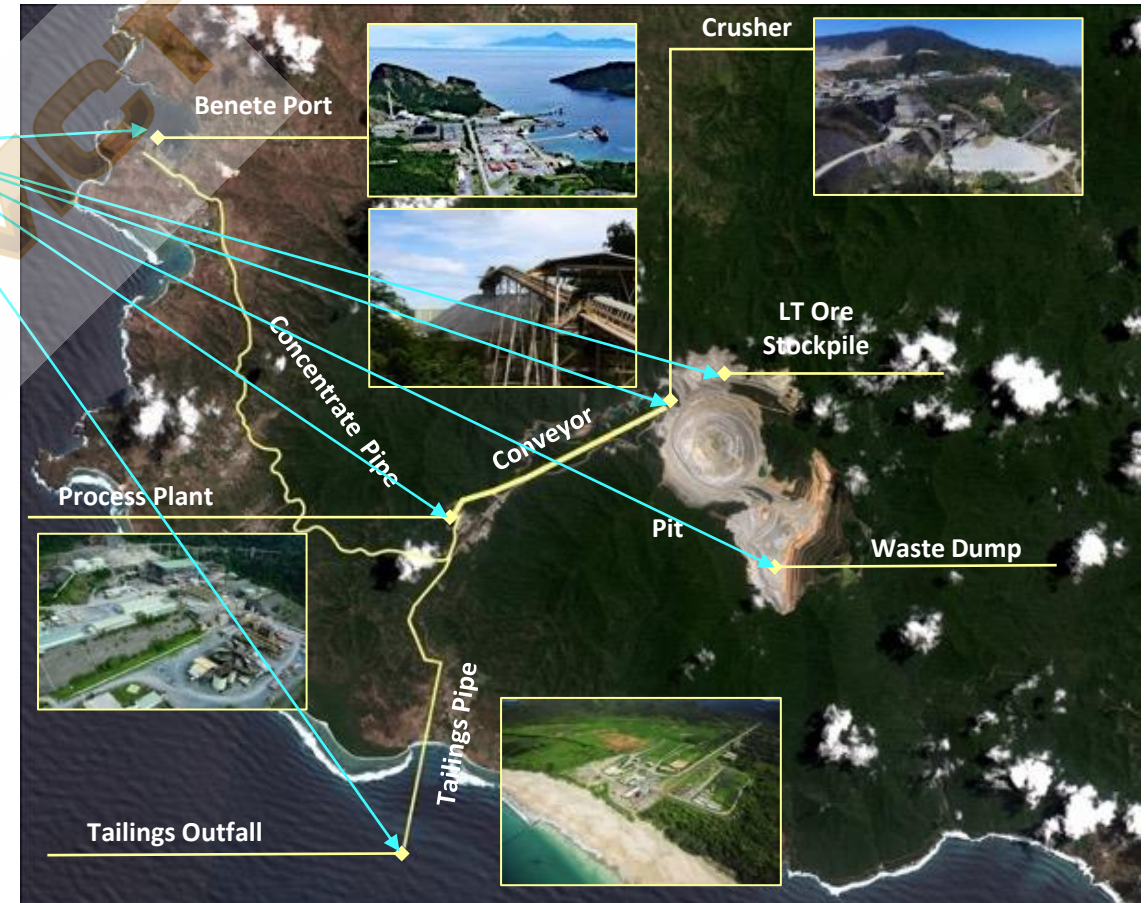
MISSION
Think bravely and act with intent to bring out the best in ourselves, our communities, and our environment

3. Strong performance returns on operations

THE RESULTS ON PRODUCTIVITY UNDER AMMAN SPEAK FOR THEMSELVES.

<p>59% increase in P&H 4100 shovel productivity</p> <p>75% increase in EX5500 excavator productivity</p> <p>25% increase in truck productivity (any distance)</p> <p>59% increase in drill and blasting production</p> <p>HIGHEST GROSS POWER PRODUCTION SINCE 1999</p>	<p>47% decrease in hotseat or shift change time</p> <p>87% decrease in truck engine maintenance time</p> <p>83% increase in ex-pit mined materials moved</p> <p>166% highest processing plant uptime since 1999</p> <p>LOWEST UNIT PRICING ON EVERY CONSUMABLE</p>
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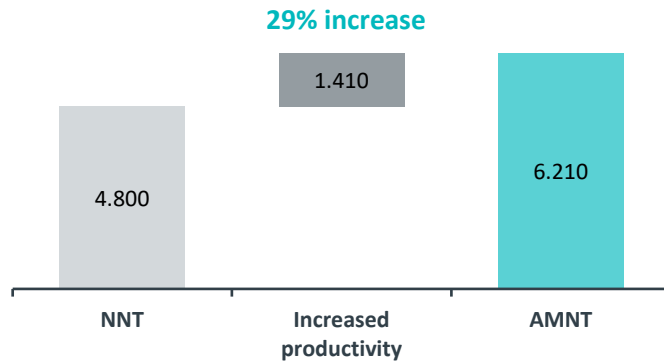
2. Applying **beyond compliance** targets in every step of our value chain



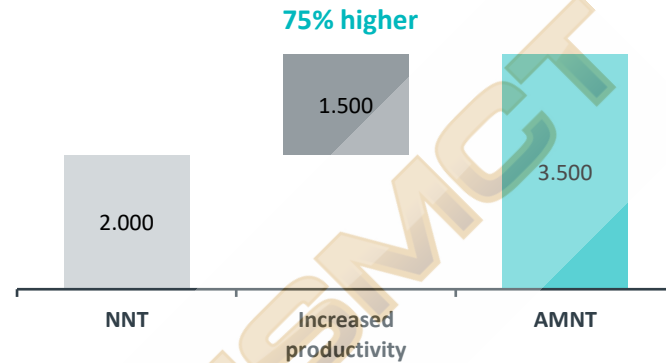
RETURN ON OUR INVESTMENT IN PERFORMANCE

Performance result on improved process efficiency and productivity, continuously breaking historical record

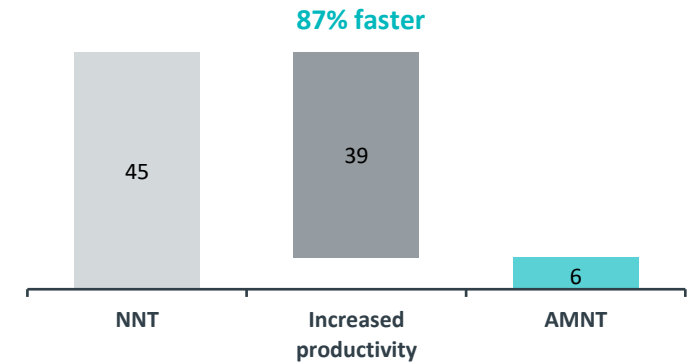
Shovel 4100 monthly average (tph)



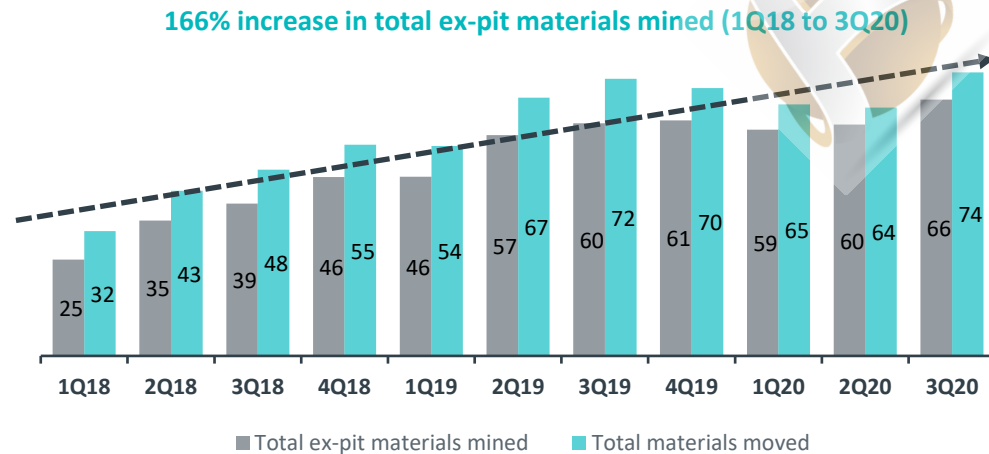
Excavator 5500 monthly average (tph)



Shift change time (minutes)



Quarterly production (mt)



- Highest truck hours ever achieved in July 2019 since Amman Mineral acquisition – **53,000 truck hours**;
- Drilled and blasted **23.0 mt** (August 2019) vs previous NNT record **16.3 mt (41% higher)**;
- First engine rebuild in Batu Hijau – Amman Mineral took **1 month** per engine vs Trakindo took **6 months** per engine (**80% reduction in time**);
- On track to change out **59 793 engines** vs historical record of **22 793 engines (1.7x more)**; and
- Consistent improvement on materials movement rate – 2019 actual materials movement rate is **263 mt** vs budget of **222 mt (18% more)**.

RETURN ON OUR INVESTMENTS IN SUSTAINABILITY

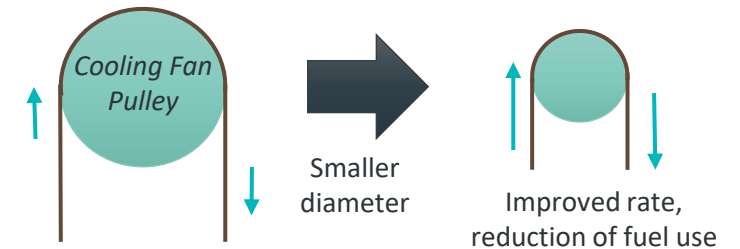


We are finding greater results not only on the economics side, but also on the sustainability of our operations, performing better technically for us means better sustainability and minimizing environmental impact

No	Program	Description	Carbon Reduction in 2020 (in CO2 ton)
1	Haul Truck 793 Tyre Repairs	New transportation tyre emission reduction	9,825
2	Utilization of mine acid water in ore plant	Energy conservation from sea water pumping	8,453
3	Drilling and blasting process optimization	Fuel use efficiency for blasting activities	6,978
4	ROM Stockpile	Reduction of ore transport distance	5,871
5	Power plant water pump upgrade	Modifikasi dan pengurangan pompa agar lebih efisien bahan bakar	3,474
6	Long-range pump monitoring system	Utilization of automated monitoring system	2,606
7	Other programs		1,590
8	One Car One Family emission reduction		5

New program under implementation

Haul Truck 793 Pulley Upgrade



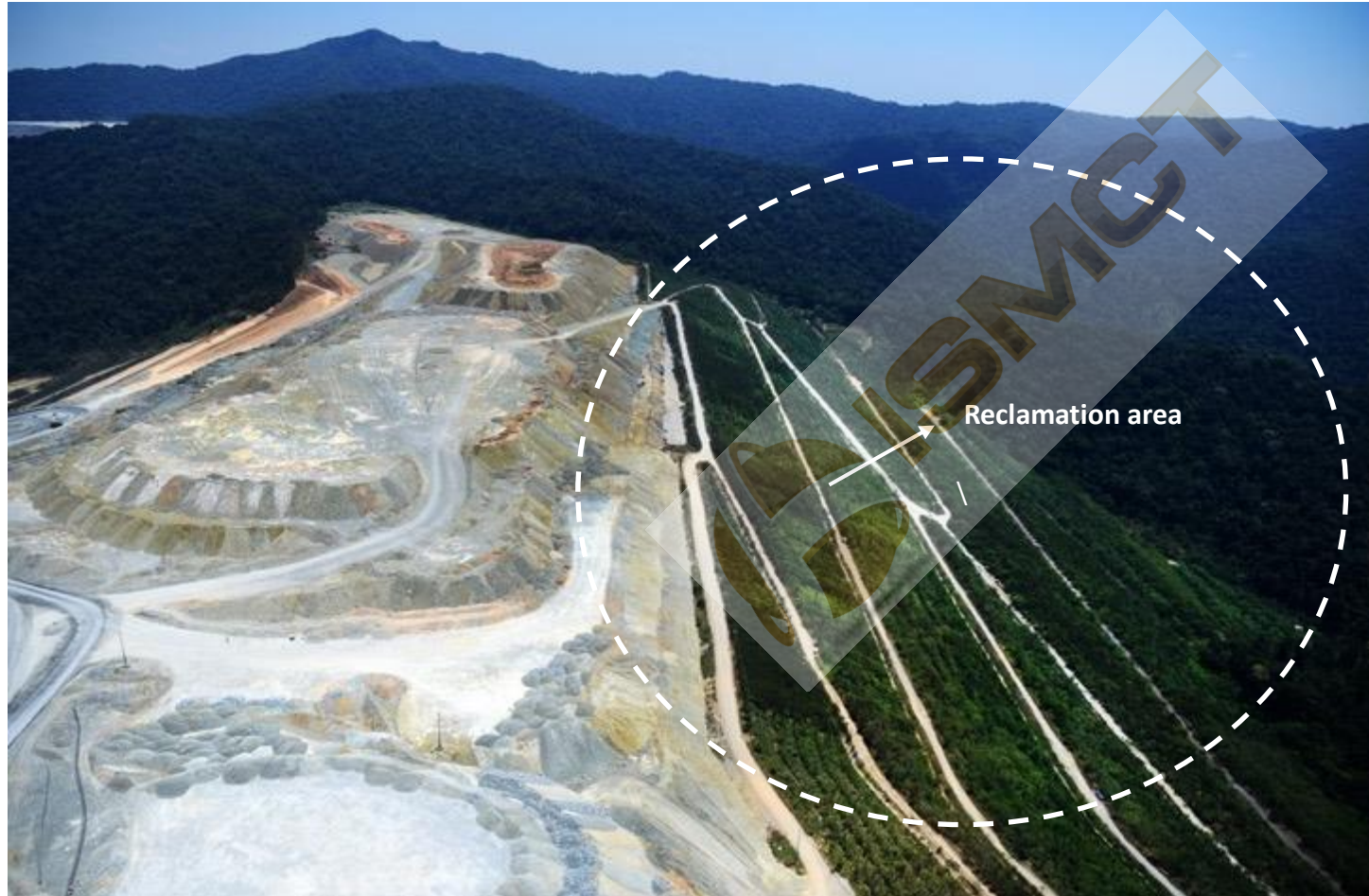
Cooling fan pulley upgrade of 793 haul trucks will save 16.5 liter of fuel/operational hour or 13.9 million liter fuel/year totaling to **reduction of estimated 37.008 CO2 ton annually.**



GOING BEYOND COMPLIANCE



Amman Mineral pursues innovation to glean the finest solution for a responsible environmental preservation



Reclamation area aerial view



Reclamation area side view

GOING BEYOND COMPLIANCE

Amman Mineral pursues innovation to glean the finest solution for a responsible environmental preservation

Carbon Sequestration

Reclamation

762 ha

93 ton CO₂/ha

70,882 tons of CO₂

RehabDAS

747 ha

24 ton CO₂/ha

18,057 tons of CO₂

Clean Water Diversion from Reclamation Area



Reduction of water managed with mine water



Energy efficiency via reduction of fuel to operate water management system



Reduction of CO₂ (195 ton CO₂ in 2020)
Reduction of fuel combustion for water management



GOING BEYOND COMPLIANCE

Targets and plans on improving sustainability



Future achievement targets

Target	Unit	2021	2022	2023
Used Oil for Blasting	%	40%	60%	80%
Renewable Energy	MWh	3000	17600	20000
Ore Processing Energy	KWh/ton feed	-1%	-2%	-3%
Power plant auxiliary power	MWh	110,236	110,126	110,016

Upcoming projects to improve sustainability

Buin Batu
SMART
Sustainable
City

Local
Procurement

Solar PV

Alternative
energy
sources for
the
community

Adding energy
source units

Integrated
Emission
Control

ENVIRONMENT & CSR IMPACTS



Amman Mineral places strong emphasis on environmental management and monitoring, resulting in numerous environmental management awards and recognized internationally.

- **~737 hectare (“ha”)** of ~2,897 ha Amman Mineral cleared for its business has already been reclaimed up;
- There are more than **~1.1m trees** originating from 98 types of local seedlings planted in the reclamation area;
- Amman Mineral has been granted **7 times** Corporate Environmental Performance Rating Program (“**PROPER**”) **Green** and **7 times PROPER Blue** awards from the Ministry of Environment and Forestry (“MEF”) (the highest environmental award);
- Maintain accreditation status for **ISO 14001** and **ISO 17025**;
- Up to 2016, more than **400 infrastructure projects** have been completed in the three sub-districts around the mine, including economic, public, healthcare, and education facilities;
- Amman Mineral operates an international school, Sekolah Buin Batu to provide education to the dependents of its employees and contractors;
- Until 2016, **~15,000** best students from various education levels in NTB have received scholarships amounting to IDR 34b;
- At the November 2017 ASEAN Ministerial Meeting on Minerals in Myanmar, Amman Mineral won the **best practices award in mineral distribution category** (contribution to environment, CSR, health, safety, etc.) among all mining companies in ASEAN;
- Amman Mineral was one of the four companies represented in COP23 2019 meeting in Bonn, Germany; and
- Amman Mineral has been granted with **Silver award for environmental excellence category** in the 11th Annual Global CSR Summit and The Good Governance Awards 2019.
- In 2020, Amman Mineral received **Aditama Trophy for Environmental Management and Utama Trophy for Mineral Conservation in Good Mining Practice Award**, held by Energy and Mineral Resources Ministry.

737 ha
of mining area reclaimed

14
PROPER awards
from the MEF

400
infrastructure projects
completed

15,000
scholarships awarded





Sustainable Tourism



Human Development



Clean Environment



Youth and Sports



Maternal & Infant Health



Disaster Preparedness

Contribution to the National Economy (2000 – Q2/2020)

Tax and non-tax payment	US\$ 3.9 Billion
Export duty & royalty payment	US\$ 0.9 Billion
Procurement of domestic goods & services	US\$ 7.8 billion
CSR	US\$ 0.2 Billion
Other Contributions (include salary & dividend payment)	US\$ 2.7 Billion

Contribution to the Local Economy

Contribution to NTB Province PDRB (Regional GDP)	up to 36.4 %
Contribution to KSB Regency PDRB (Regional GDP)	up to 95.9%
Labor absorption from NTB province	75%

ECONOMIC CONTRIBUTION
of Batu Hijau Project to the Indonesian economy

US\$ 15.5 Billion



AMMAN

Terima Kasih