

Investor Presentation  
December 2017

# Oyu Tolgoi: Advancing value, creating options



TURQUOISE HILL



# Forward-looking statements

2

This presentation includes certain “forward-looking information” within the meaning of applicable Canadian securities legislation and “forward-looking statements” within the meaning of the “safe harbour” provisions of the United States Private Securities Litigation Reform Act of 1995.

All statements and information, other than statements of historical fact, are forward-looking statements and information that involve various risks and uncertainties. There can be no assurances that such statements or information will prove accurate and actual results and future events could differ materially from those expressed or implied in such statements. Such statements and information contained herein, which include, but are not limited to, statements respecting anticipated business activities, planned expenditures, corporate strategies and other statements that are not historical facts, represent the Company’s best judgment as of the date hereof based on information currently available. The Company does not assume any obligation to update any forward-looking statements or information or to conform these forward-looking statements or information to actual results, except as required by law.

For a more detailed list of specific forward-looking statements and information applicable to the Company, refer to the *Forward-Looking Information* and *Forward-Looking Statements* sections of the Annual Information Form dated as of March 23, 2017 in respect to the year ended December 31, 2016.

All amounts are in U.S. dollars, unless otherwise stated.



# Turquoise Hill's investment thesis

3

- 1. Oyu Tolgoi expected to be world's third-largest copper mine**
- 2. Significant cash flow expected from underground development**
- 3. Hugo North Lift 1 financing in place<sup>1</sup>**
- 4. Turquoise Hill should benefit from expected drop in copper supply (~2020)**
- 5. Oyu Tolgoi's resources provide long-term development optionality**

1. Financing sources includes project finance facility, supplemental debt (in progress), operating cash flow from Oyu Tolgoi and Turquoise Hill's cash; excludes power plant CAPEX.



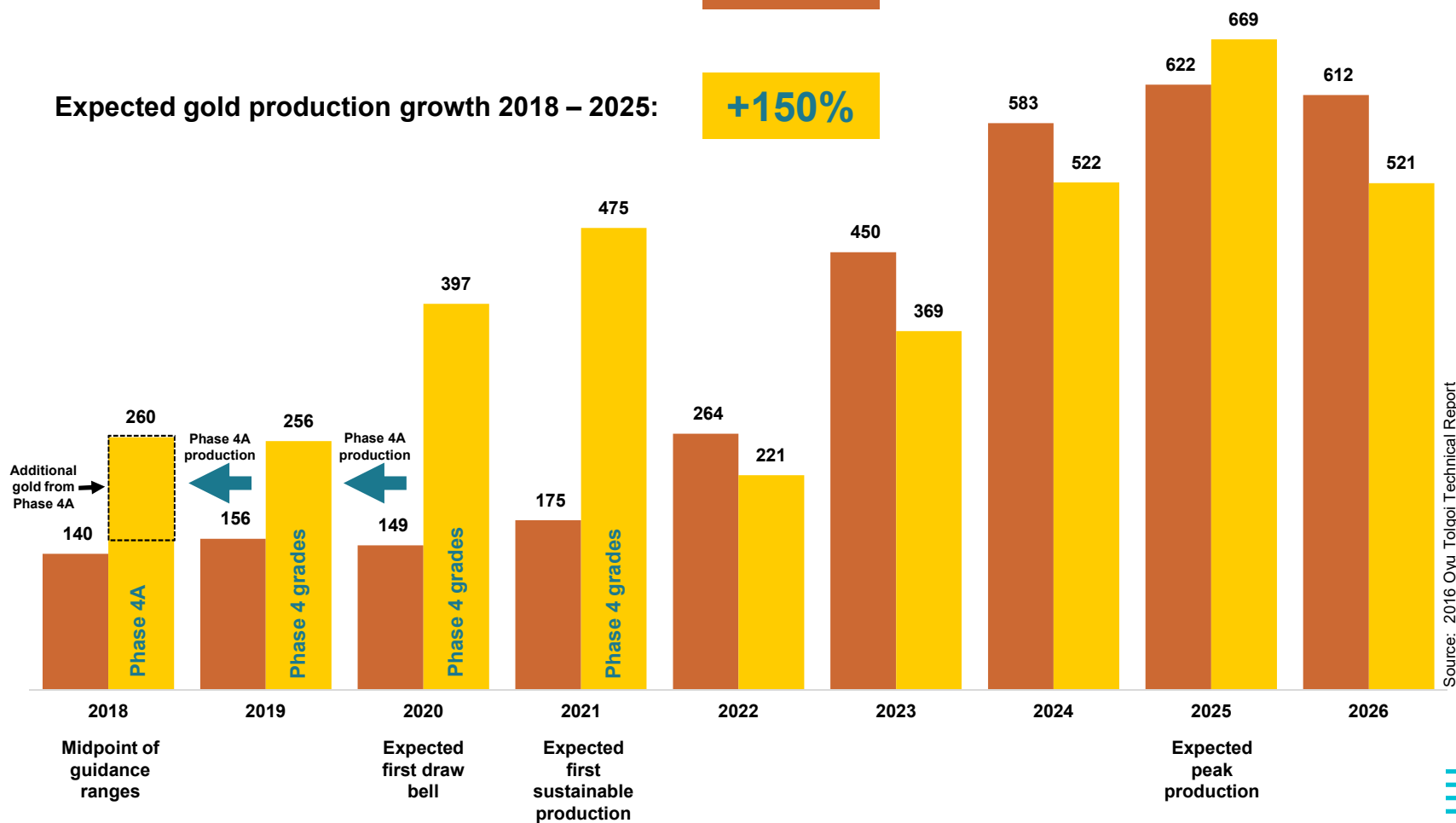
# Production profile

4

■ Copper ('000 tonnes) ■ Gold ('000 ounces)

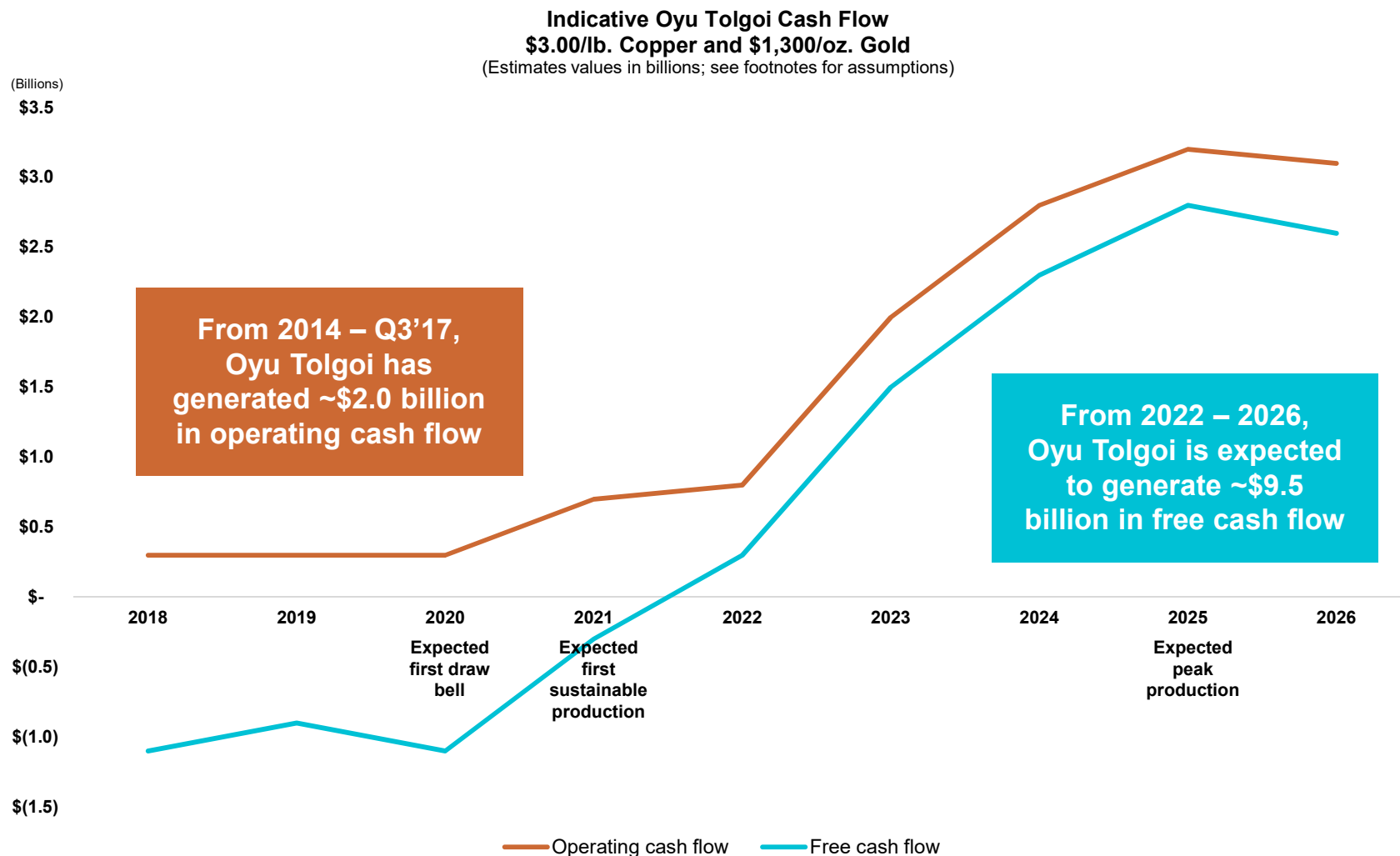
Expected copper production growth 2018 – 2025: **+340%**

Expected gold production growth 2018 – 2025: **+150%**



# Significant cash flow expected

5



Source: 2016 Oyu Tolgoi Technical Report.

Free cash flow = operating cash flow – CAPEX; does not include financing costs.

Assumes \$3.00/lb. copper and \$1,300/oz. gold beginning in 2018 and represents Oyu Tolgoi-level cash flow.

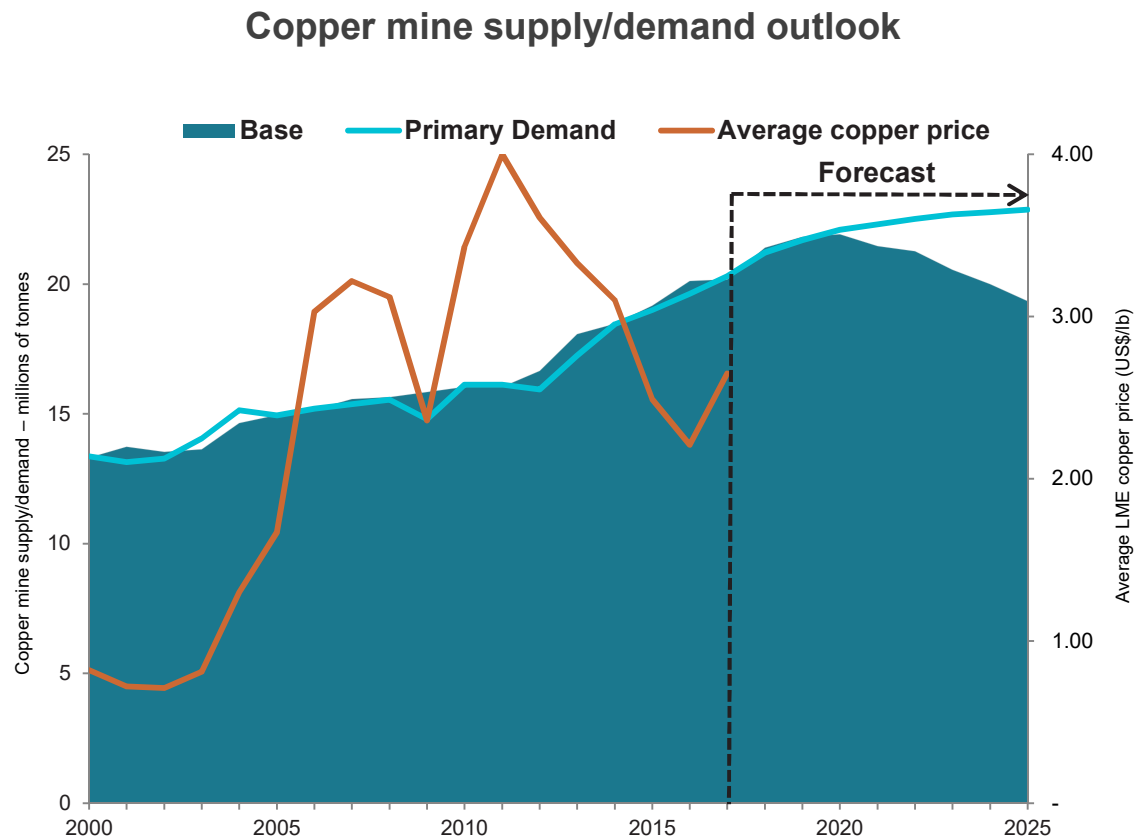
Production in 2018 assumes additional 100,000 ounces of gold from 2016 technical report projection and 50,000 less ounces from 2019 and 2020 technical report projections.

Operating cash flow for 2018 – 2020 incorporates operational improvements/cost savings implemented after publication of the 2016 technical report cash flow model (Table 22.11).



# Long-term copper fundamentals strong

6



- Ongoing attrition at existing mines driven by declining grades
- Continued demand growth requires new capacity in the medium-term
- Market expected to return to balance/small surplus from 2018 before moving into deficit from 2020
- China now largest buyer of gold and continues to be largest consumer of copper

Source: Wood Mackenzie (Q2'17 Long-Term Outlook); base includes highly-probable projects.



A photograph of a worker in a hard hat and safety vest operating a large orange Jumbo drill rig in an underground tunnel. The tunnel walls are lined with a dense grid of rebar. The worker is positioned on the right side of the frame, looking towards the left where the drill rig is mounted. The rig has multiple drill bits and is positioned against the tunnel wall. The scene is dimly lit, with the primary light source coming from the worker's headlamp and the rig's lights.

## Underground development

Photo: Jumbo working on main access lateral development off of Shaft 1.





# Underground progress at Q3'17

8

## Workforce

Over  
**5,000**  
workers

## Workforce Composition

Mongolian nationals  
**89%**  
of workforce

## Lateral Development

Since project restart  
**5.4 eq. km**  
completed

## Development Rates

**New crusher and  
additional crews**

to allow for step-up in  
development rates  
beginning Q4'17

## Project Spend

Project spend and  
capital commitments  
totaled

**\$1.9 billion**  
since project re-start

## Mongolian Spend

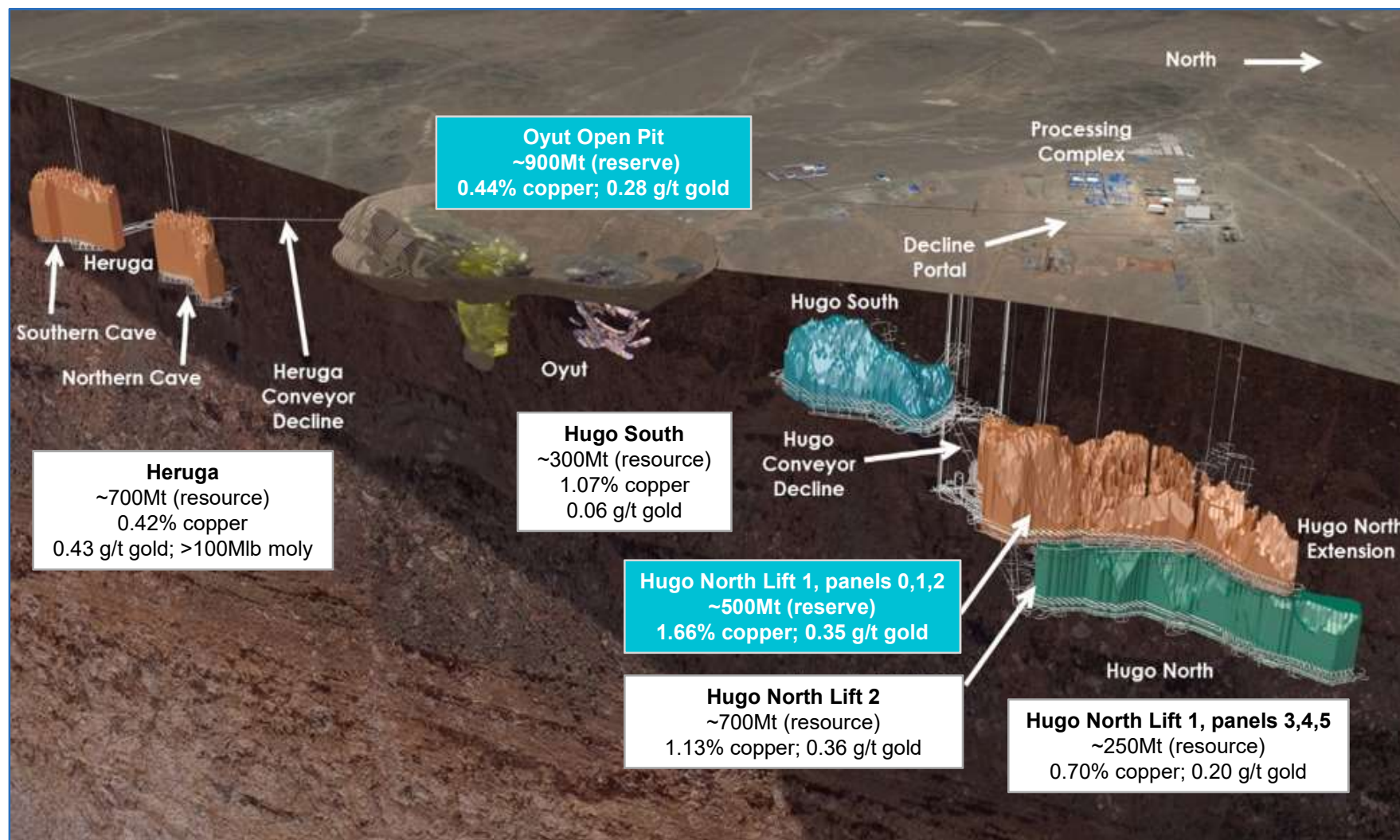
Over  
**\$1.0 billion**  
awarded to Mongolian  
companies





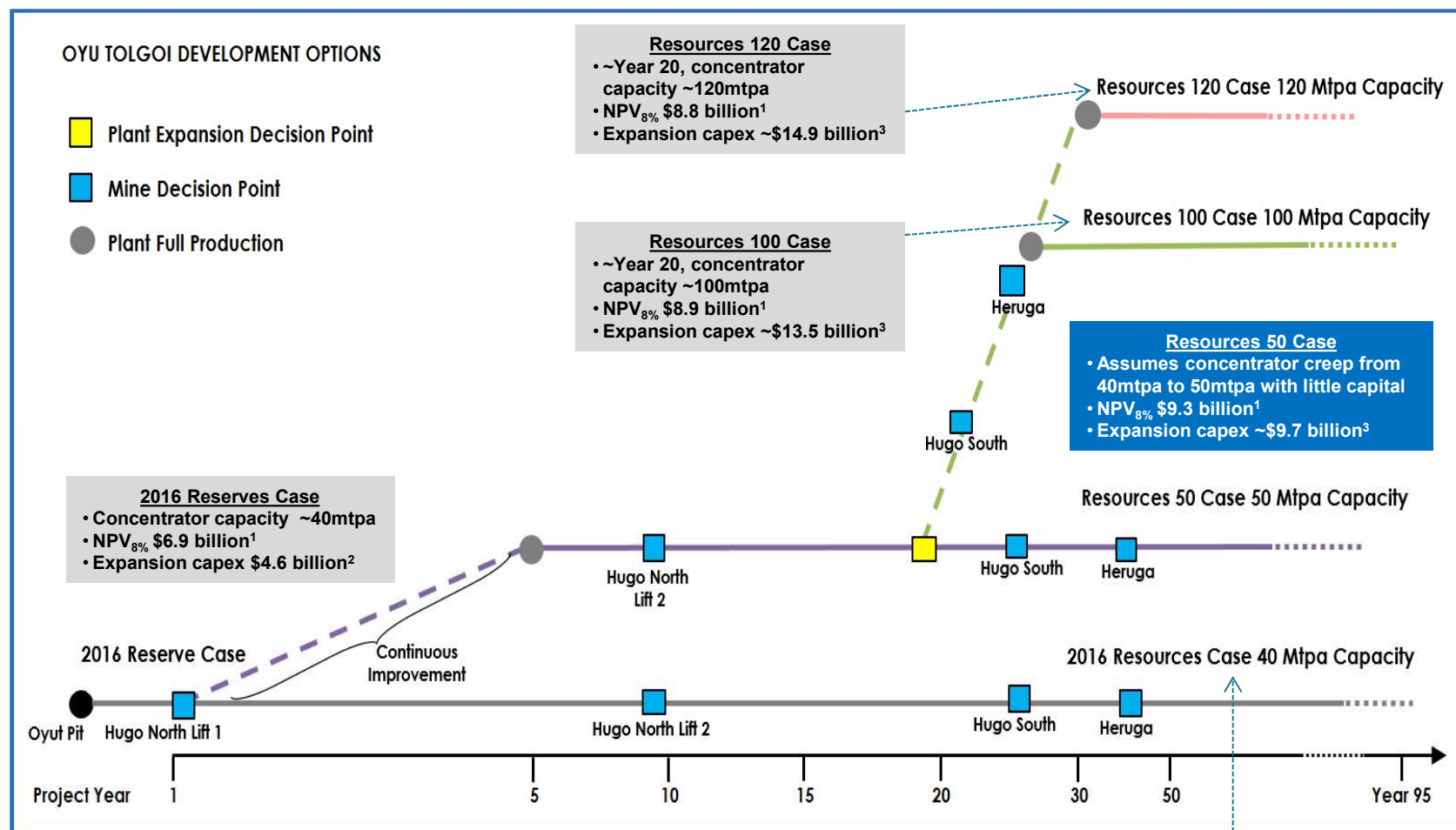
# 2016 Resources Case: ~3.4 billion tonnes

9



# Alternative production cases

10



1. NPV8% assumes \$3.00/lb copper and \$1,300/oz gold

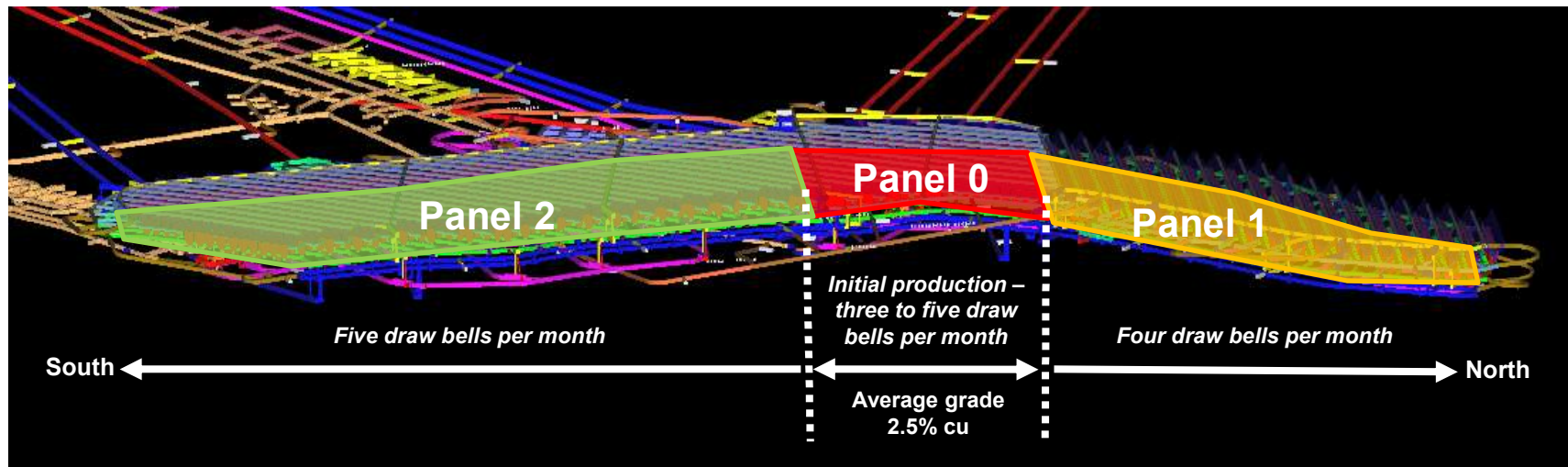
2. Expansion capital costs include only direct project costs and exclude interest expense, capitalized interest, debt repayments, tax pre-payments and forex adjustments. In all cases, total capital cost excludes capital costs for the year 2016. Expansion capital for 2016 excluded is \$0.46 billion.

3. Expansion capital costs inclusive of 2016 Reserves Case expansion capital. Expansion capital costs include only direct project costs and exclude interest expense, capitalized interest, debt repayments, tax pre-payments and forex adjustments. In all cases, total capital cost excludes capital costs for the year 2016.



# Underground mining sequence

11



- Initial underground production begins with Panel 0
- Highest copper grades occur during ramp up exceeding 2.5% in several years
- 2024-2026: Oyu Tolgoi *peak* copper production during period expected to average > 600,000 tonnes annually due to high grades
- 2024-2036: Total mine copper production over period expected to average > 500,000 tonnes annually
- Following Panel 0, production will move outward with Panels 1 and 2





# Underground development status

12

## Lateral development

- 5.4 equivalent kilometres completed (January 2016 – end Q3'17)
- Third crew deployed in Q3'17, fourth crew deployed in Q4'17
- Fifth crew in training; deployment expected in Q4'17
- Increased metres expected in Q4'17 with larger crusher and additional crews

## Shaft 2

- Approximately 35 vertical metres<sup>1</sup> remaining until end of shaft sinking (expected late 2017)
- Shaft fit-out over 2018
- Used for production and ventilation

## Shaft 5

- Approximately 300 vertical metres<sup>1</sup> remaining until end of shaft sinking (expected early 2018)
- Increase in lateral development when completed
- Used for ventilation

## Convey-to-Surface

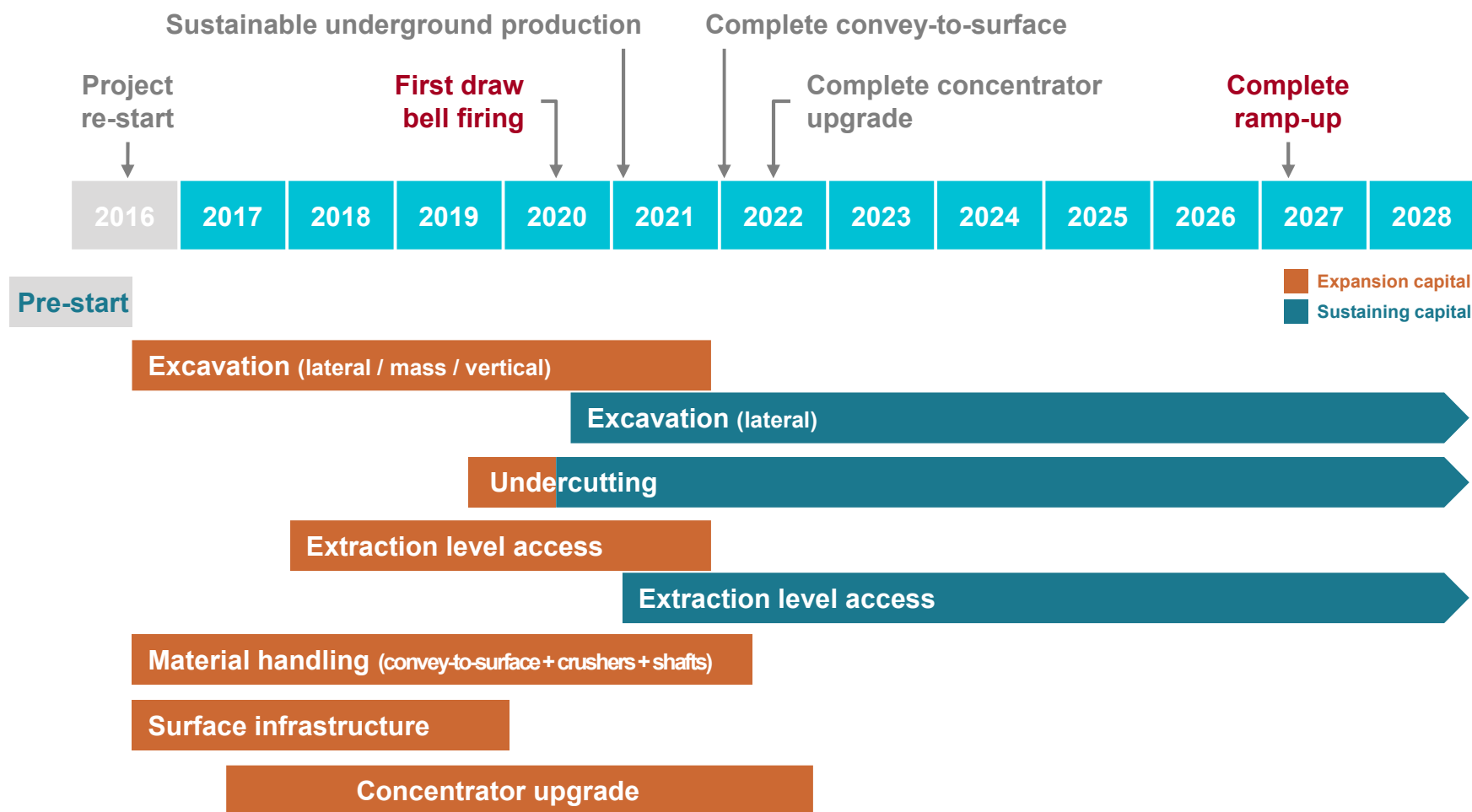
- Surface excavation complete
- Underground decline commenced in Q1'17

1. At the end of Q3'17.



# Complete ramp-up expected by 2027

13



Timeline is illustrative only and subject to change.



# Hugo North Lift 1 production schedule

14

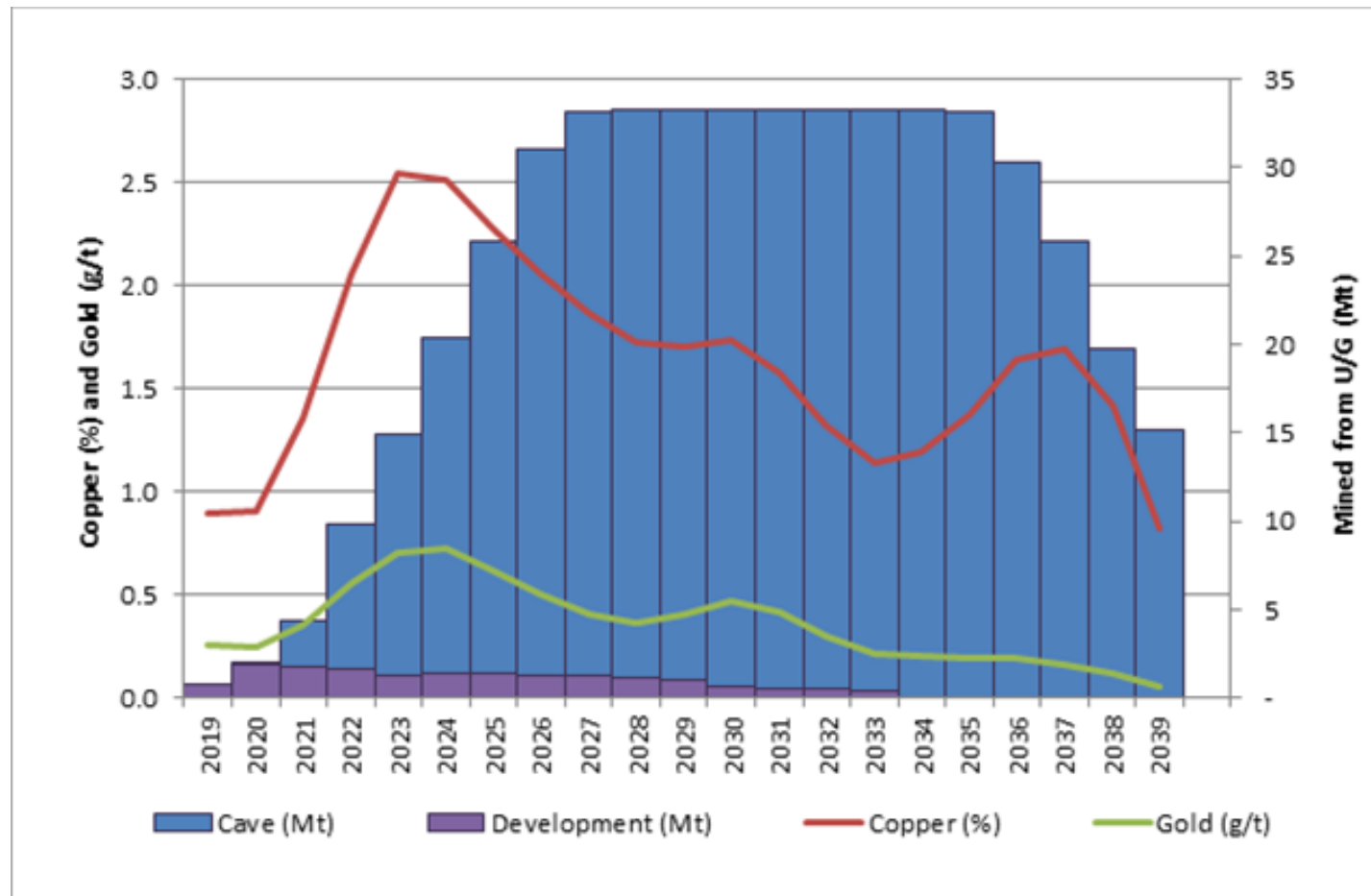


Figure: 2016 Oyu Tolgoi Technical Report.

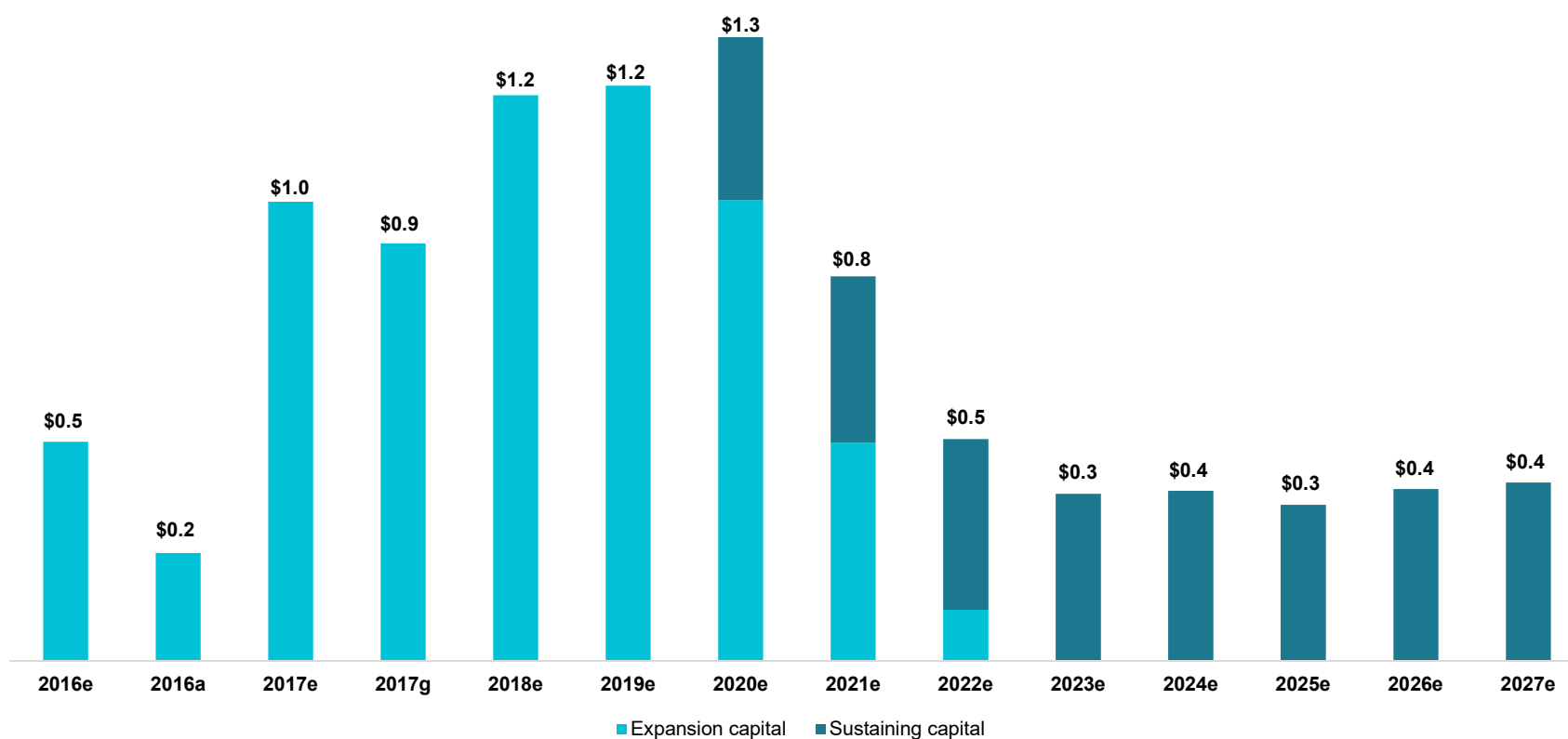




# Technical report CAPEX profile

15

Underground capital spend profile<sup>1</sup>  
(\$ billion)



**Expansion capital of \$5.3 billion and sustaining capital of \$2.8 billion to full ramp-up expected in 2027**

Source: 2016 Oyu Tolgoi Technical Report | 1. Expansion and sustaining capital includes VAT and escalation | e = expected, a = actual, g = midpoint of 2017 underground CAPEX guidance





A wide-angle photograph of a massive open-pit mine. The mine is characterized by steep, terraced walls of reddish-brown earth and rock. A yellow haul truck is positioned on a narrow ledge of the mine's edge, facing away from the camera. A winding dirt road curves through the lower levels of the mine. The sky is clear and blue.

## Open-pit operations

Photo: Oyu Tolgoi's open-pit mine.

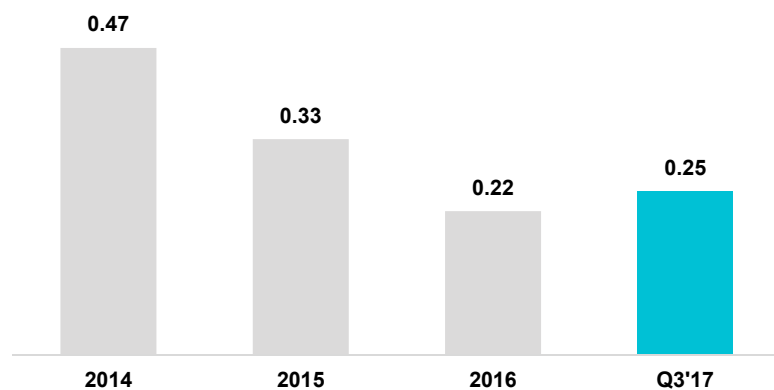




# Production highlights

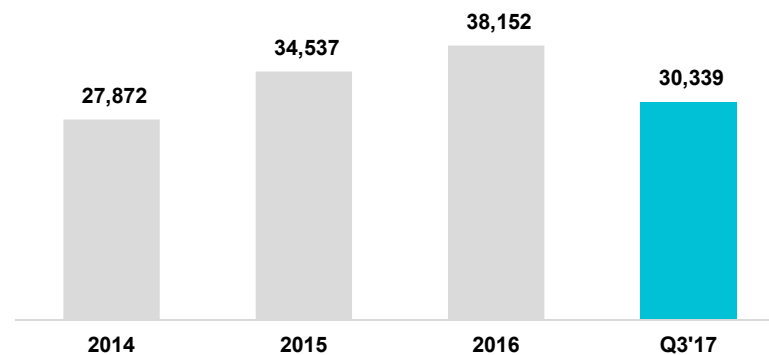
17

**All injury frequency rate**  
(per 200,000 hours worked)



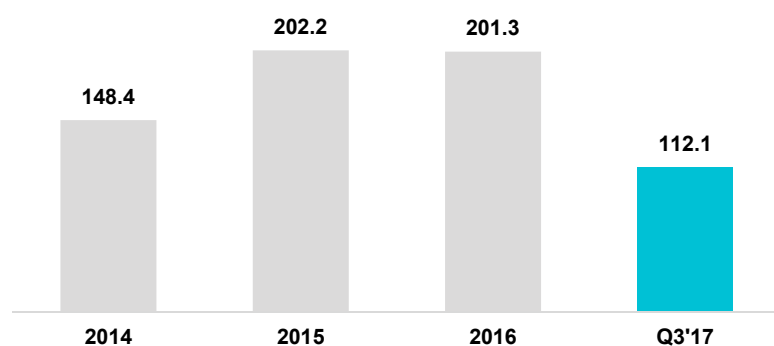
Industry-leading safety performance

**Concentrator throughput**  
('000 tonnes)



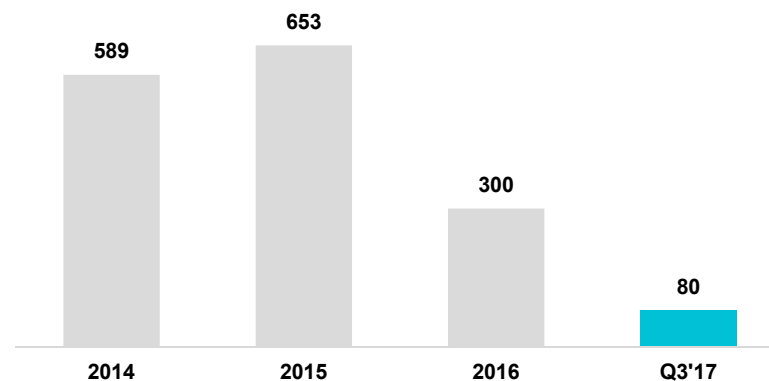
Throughput target of 40 million tonnes for 2017

**Copper in concentrates**  
('000 tonnes)



2017 guidance of 130,000 – 160,000 tonnes of copper  
and 100,000 – 140,000 ounces of gold

**Gold in concentrates**  
('000 ounces)



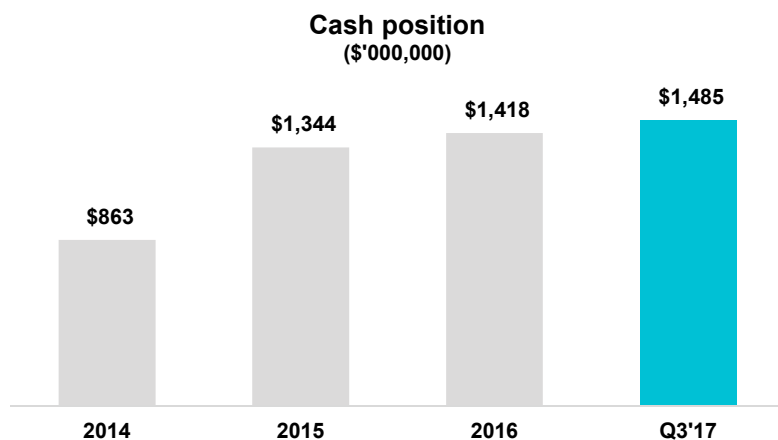
2017 gold production impacted by low-grade Phase 6 ore



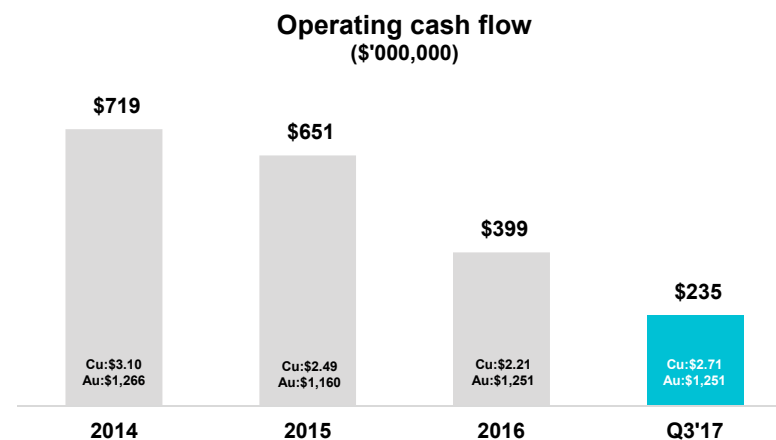


# Financial highlights

18

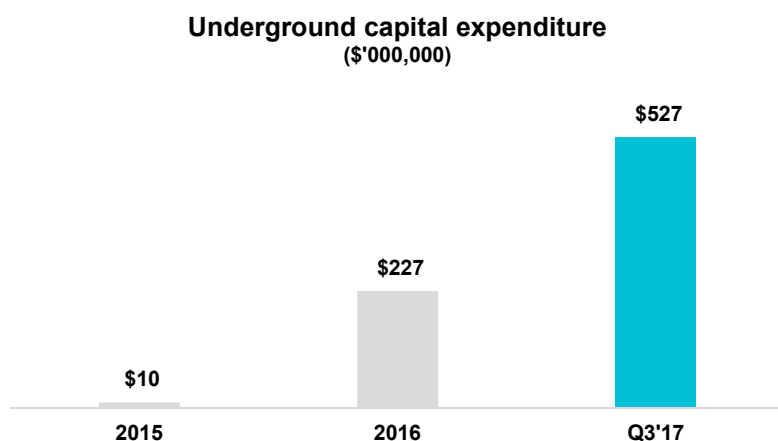


Strong cash position

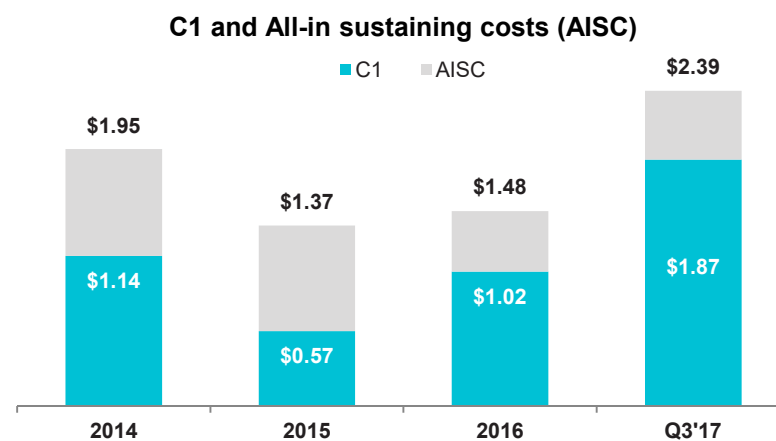


Over \$2.0 billion of operating cash flow generated since 2014

Source: Average quarterly Comex copper price and average quarterly LBMA gold price.



2017 underground CAPEX guidance of \$825 million - \$925 million



Competitive unit costs

Note: C1 and AISC not meaningful in 2013.



# Production and financial guidance

19

	2017	2018
Copper in concentrates	130,000 – 160,000 tonnes	125,000 – 155,000 tonnes
Gold in concentrates	100,000 – 140,000 ounces	240,000 – 280,000 ounces
Operating cash costs	\$720 million	\$700 million
Capital expenditures	\$100 million (open pit) \$825 million - \$925 million (underground)	\$150 million (open pit) \$1.1 billion - \$1.2 billion (underground)

- 2017 production impacted by ~25% lower copper head grade and ~50% lower gold head grade
- 2017 operating cash costs reflect cost improvements and impact of lower logistics costs from decreased production
- 2017 open-pit CAPEX reflects lower maintenance costs, reduced deferred stripping cost due to optimization and improved tailings storage costs



# Reserves case concentrator performance

20

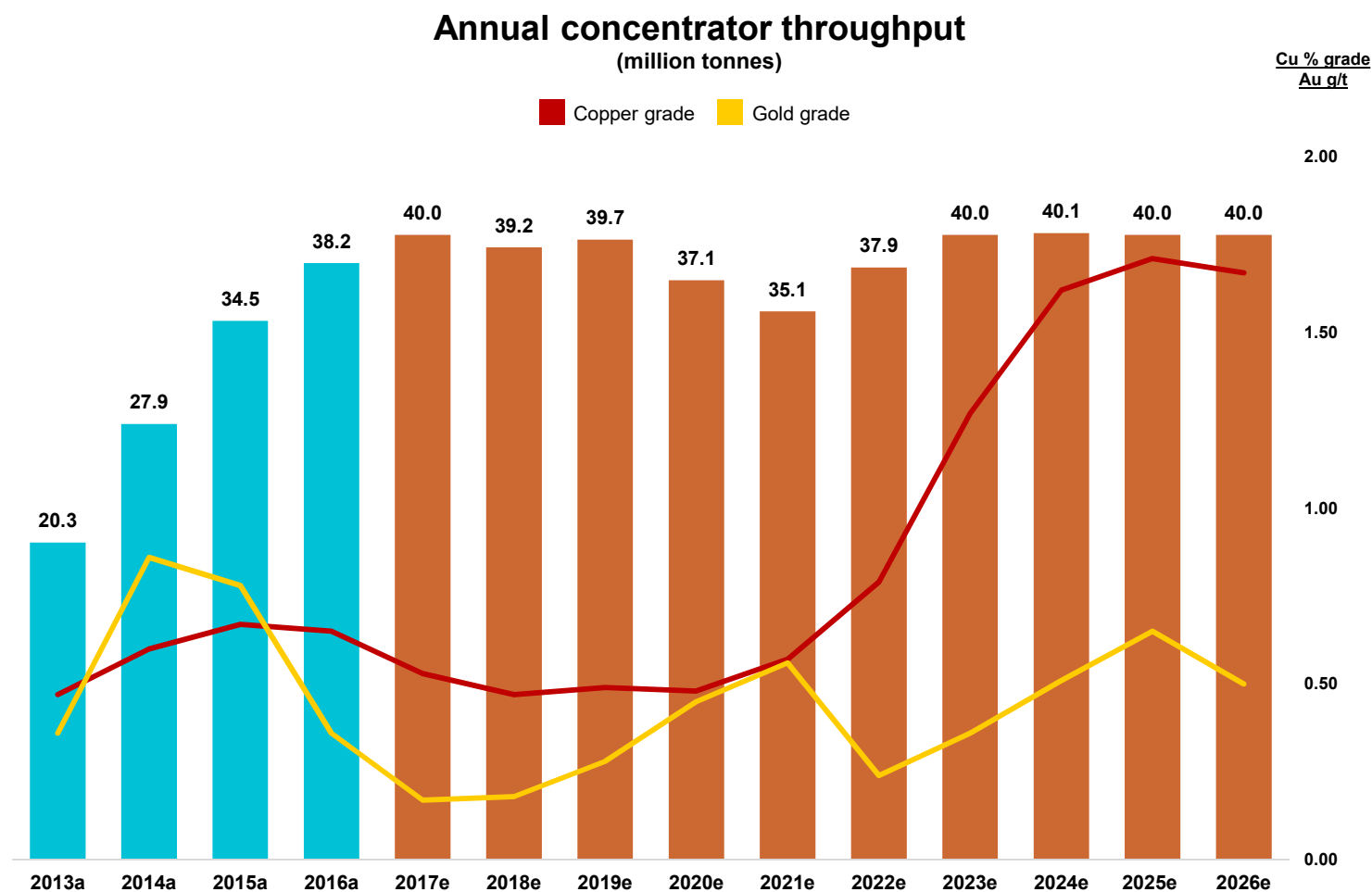


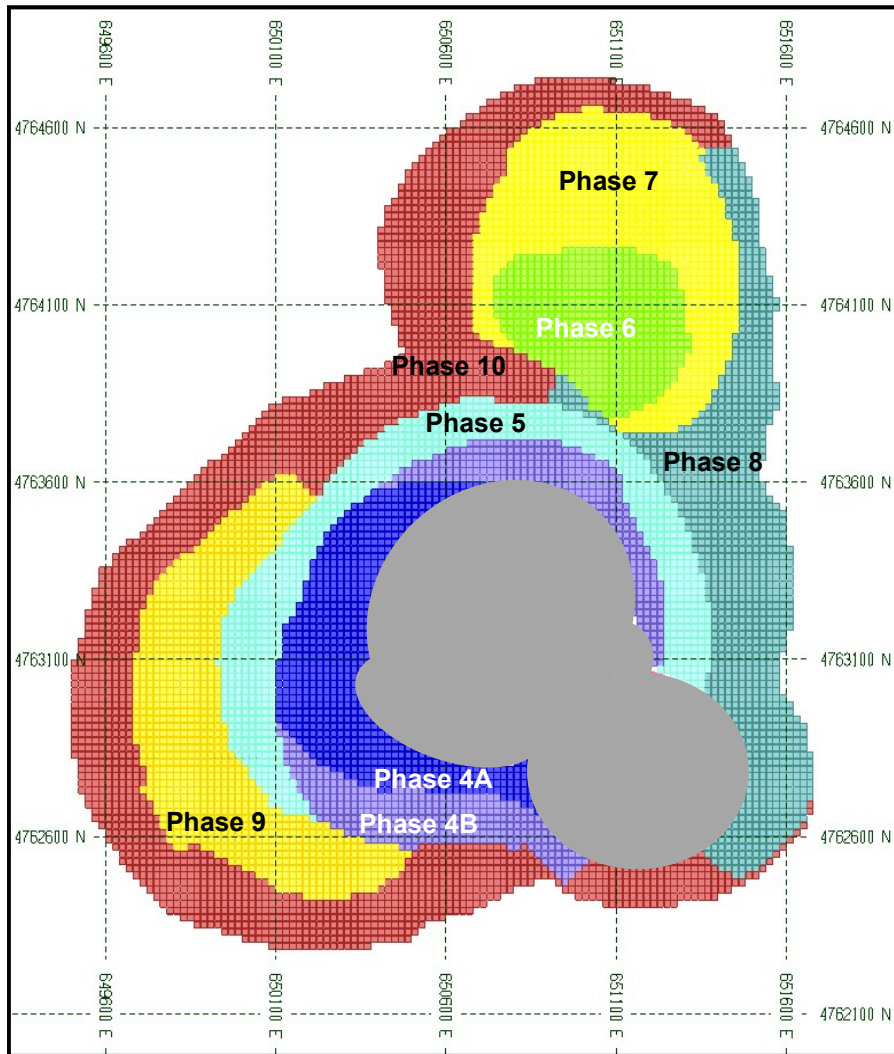
Figure: 2016 Oyu Tolgoi Technical Report. Note: a = actual, e = expected.





# Managing near-term ore grade challenges

21



- Phases 6 and 4a as well as low-grade stockpile ore processed in 2017
- Phase 4 stripping provides access to higher ore grades in 2018



# Oyu Tolgoi – a long-term growth opportunity

22

- **Advancing** underground development
- **Creating** long-term development options
- **Demonstrated** productivity and cost improvements
- **Best copper asset** in development

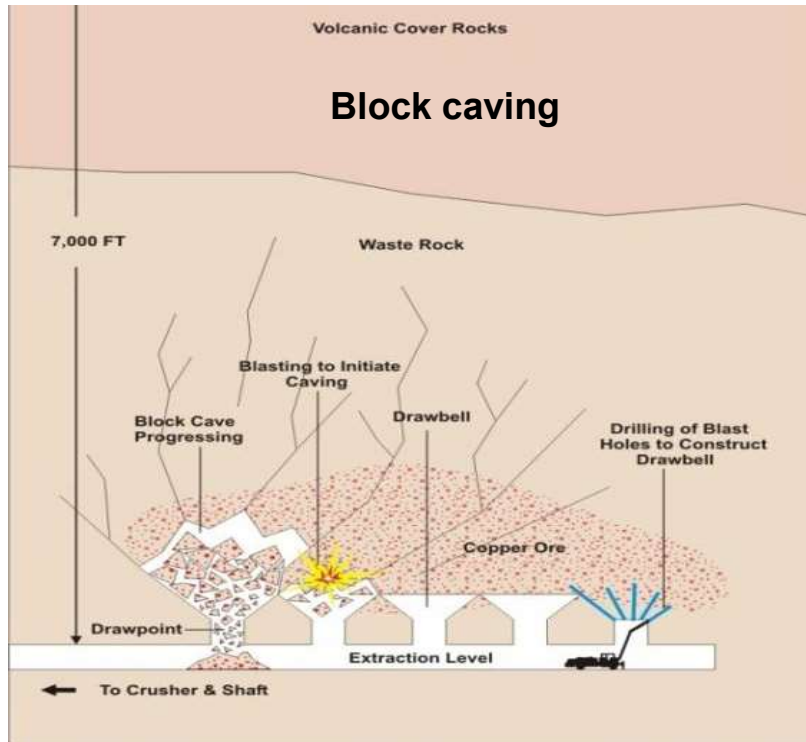


# Appendix

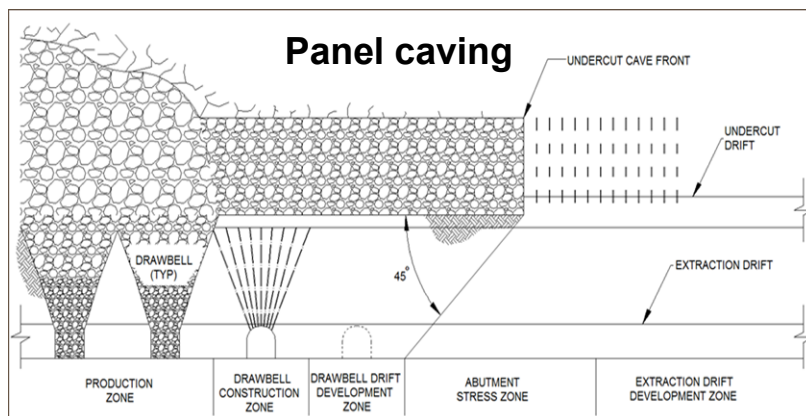


# Block cave concept

24



- Gravity used to exploit deep ore body
- Cave propagation (caveability) depends on in situ stresses and host rock's ability to fracture
- Initial drill, blast and extraction focused on bottom section of ore body via drawpoint to create void
- Broken ore removal from undercut area causes ore above it to collapse (vertical propagation) and void forms drawpoint
- In traditional block cave, whole ore body extracted through static set of drawpoints at base of ore body
- Once undercutting complete, no on-going construction; only production until end of cave life



- Ore body progressively and systematically mined through moving *cave front* via series of panels
- Draw rates carefully managed to avoid riling and premature dilution
- Rate of undercut advance matched to both draw column height and production capacity





# Reserves Case cash-flow model

25

Cash Flow Statement (US\$M)	Year													Total
Year Number	1	2	3	4	5	6	7	8	9	10	11	21	31	
Year To	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	20	30	40	
Gross Revenue	954	923	1,189	1,402	1,735	1,993	3,380	4,434	4,879	4,622	35,422	13,698	8,175	82,806
Realization Costs	263	237	222	212	246	311	513	664	728	709	5,955	2,502	1,206	13,770
<b>Net Sales Revenue</b>	<b>691</b>	<b>686</b>	<b>967</b>	<b>1,190</b>	<b>1,489</b>	<b>1,682</b>	<b>2,867</b>	<b>3,770</b>	<b>4,151</b>	<b>3,912</b>	<b>29,467</b>	<b>11,196</b>	<b>6,969</b>	<b>69,036</b>
<b>Site Operating Costs</b>														
Mining	191	182	177	188	188	221	220	250	287	254	3,072	2,158	1,038	8,427
Processing and Tailings	285	295	297	279	266	292	326	328	329	327	3,248	3,193	2,445	11,911
G&A and Operations Support	100	93	94	96	97	96	96	96	92	88	851	586	387	2,771
Infrastructure and Other	65	84	91	41	69	57	69	83	69	30	373	359	371	1,761
<b>Total Site Operating Costs</b>	<b>641</b>	<b>655</b>	<b>659</b>	<b>604</b>	<b>620</b>	<b>665</b>	<b>710</b>	<b>756</b>	<b>776</b>	<b>700</b>	<b>7,544</b>	<b>6,297</b>	<b>4,241</b>	<b>24,869</b>
<b>Operating Surplus / (Deficit)</b>	<b>51</b>	<b>31</b>	<b>307</b>	<b>585</b>	<b>869</b>	<b>1,016</b>	<b>2,157</b>	<b>3,013</b>	<b>3,375</b>	<b>3,213</b>	<b>21,923</b>	<b>4,899</b>	<b>2,728</b>	<b>44,167</b>
Indirect Costs	171	182	180	187	182	178	182	188	178	164	1,746	1,190	848	5,576
<b>Net Profit Before Income Tax</b>	<b>-121</b>	<b>-151</b>	<b>128</b>	<b>398</b>	<b>688</b>	<b>838</b>	<b>1,974</b>	<b>2,825</b>	<b>3,197</b>	<b>3,049</b>	<b>20,177</b>	<b>3,708</b>	<b>1,880</b>	<b>38,591</b>
Income Tax	-	-	-	-	-	-	-	-	-	-	1,496	557	254	2,307
<b>Net Profit After Income Tax</b>	<b>-121</b>	<b>-151</b>	<b>128</b>	<b>398</b>	<b>688</b>	<b>838</b>	<b>1,974</b>	<b>2,825</b>	<b>3,197</b>	<b>3,049</b>	<b>18,681</b>	<b>3,151</b>	<b>1,627</b>	<b>36,284</b>
<b>Capital Expenditure</b>														
Expansion Capital	874	1,071	1,080	831	387	92	-	-	-	-	-	-	-	4,336
Sustaining Capital	82	101	58	351	424	373	397	430	320	350	1,912	866	424	6,088
VAT & Duties	79	82	66	102	75	44	43	47	35	38	209	99	47	967
<b>Subtotal</b>	<b>1,035</b>	<b>1,254</b>	<b>1,205</b>	<b>1,285</b>	<b>886</b>	<b>509</b>	<b>440</b>	<b>477</b>	<b>354</b>	<b>388</b>	<b>2,121</b>	<b>964</b>	<b>472</b>	<b>11,391</b>
Working Capital, Capitalized Operating Costs and Closure	-47	-34	-2	80	87	76	37	6	18	49	411	187	937	1,805
VAT & Duties (Capex)	3	1	-	5	2	3	1	-	1	5	44	21	-	86
<b>Total Capital Expenditure</b>	<b>992</b>	<b>1,221</b>	<b>1,203</b>	<b>1,369</b>	<b>975</b>	<b>588</b>	<b>479</b>	<b>483</b>	<b>374</b>	<b>442</b>	<b>2,576</b>	<b>1,172</b>	<b>1,408</b>	<b>13,282</b>
<b>Net Cash Flow After Tax</b>	<b>-1,112</b>	<b>-1,372</b>	<b>-1,075</b>	<b>-971</b>	<b>-287</b>	<b>250</b>	<b>1,496</b>	<b>2,342</b>	<b>2,823</b>	<b>2,607</b>	<b>16,105</b>	<b>1,979</b>	<b>218</b>	<b>23,003</b>

Metal Price Assumptions						
	Unit	2017	2018	2019	2020	2021 Onwards
Copper	\$/lb	2.15	2.36	2.58	2.79	3.00
Gold	\$/oz	1,300	1,300	1,300	1,300	1,300
Silver	\$/oz	19.00	19.00	19.00	19.00	19.00

Source: Oyu Tolgoi 2016 Technical Report.



# Oyu Tolgoi at China's doorstep

26



# Project finance flow of funds

27

## Shareholder loan



### Payable to Turquoise Hill\*

Shareholder loan Q1'16: \$7.0 billion

Drawdown Q2'16: \$4.3 billion

Shareholder loan Q3'17: \$3.6 billion

## TURQUOISE HILL

### Receivable from Oyu Tolgoi\*

Shareholder loan Q3'17: \$3.6 billion

1. In accordance with the ARSHA, Turquoise Hill funded the common share investments in Oyu Tolgoi on behalf of Erdenes Oyu Tolgoi LLC; at June 3, 2017 the balance was approximately \$1.1 billion

\* Interest rate LIBOR + 6.5%

## At project finance drawdown



Proceeds: \$4.3 billion<sup>2</sup>

### Payable to Turquoise Hill\*

Shareholder loan: \$3.6 billion

## TURQUOISE HILL

\$4.3 billion<sup>3</sup>

### Receivable from Oyu Tolgoi\*

Shareholder loan: \$3.6 billion



\$4.2 billion

### Deposit from Turquoise Hill

Deposit: \$4.2 billion  
Waive 2.5%\*\* guarantee fee with amount on deposit

2. Project finance facility made directly with Oyu Tolgoi

3. Amount received net of bank fees

\* Interest rate LIBOR + 6.5%

\*\* When guarantee fee paid, Oyu Tolgoi pays 1.9% and Turquoise Hill pays 0.6%

## Priority of funding used for development

- #1 Oyu Tolgoi operating cash flow
- #2 Project finance funds
- #3 Turquoise Hill cash

## Oyu Tolgoi cash call



Funding

### Payable to Turquoise Hill

(2.5%\*\* guarantee fee on funds used)

Shareholder loan: ↑

Equity loan: ↑

## TURQUOISE HILL

Funding

### Receivable from Oyu Tolgoi\*

Shareholder loan: ↑

Equity loan: ↑



Funding

\* Indicative, does not show the withholding tax implications | original shareholder loan interest rate LIBOR + 6.5% | Oyu Tolgoi's all-in project finance interest rate, including upfront and ongoing fees as well as the guarantee fee, is LIBOR + 6.0%

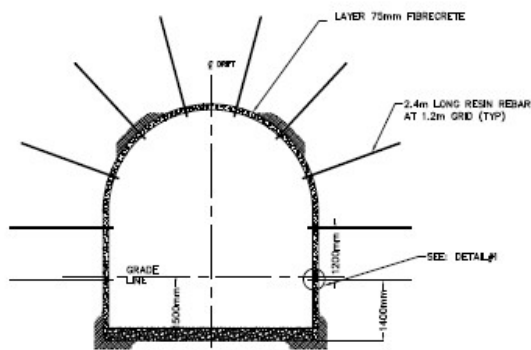
\*\* Guarantee fee - Oyu Tolgoi pays 1.9% and Turquoise Hill pays 0.6%



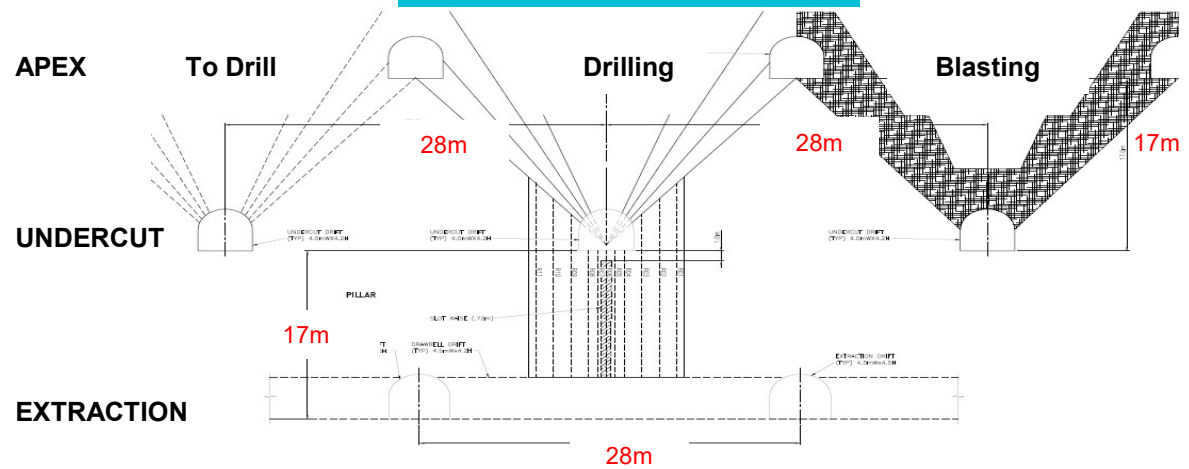
# Underground elements

28

## Ground Support



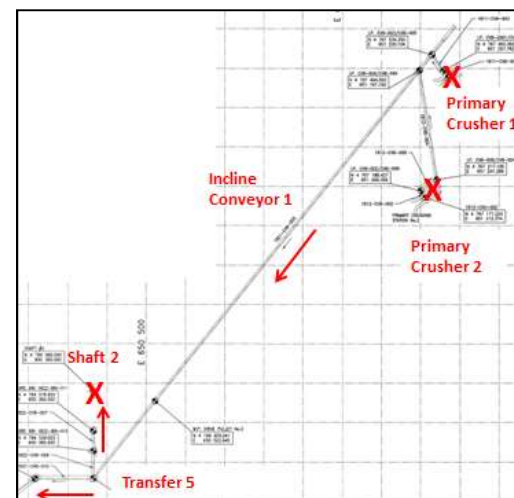
## Undercut



## Extraction



## Ore Handling





# Oyu Tolgoi's impact in Mongolia

29

## Mongolian Workforce

**94%**

At the end of Q3'17, ~94% of Oyu Tolgoi's workforce was Mongolian

## Taxes and Fees

**\$120M**

At the end of Q3'17, Oyu Tolgoi had paid \$120 in annual taxes, fees and other payments to the Mongolian Government

## In-country Spend

**\$6.7B**

Between 2010 and Q3'17, Oyu Tolgoi has spent \$6.7B in Mongolia<sup>1</sup>

## Taxpayer Rank

**#1**

Oyu Tolgoi was the top corporate taxpayer in Mongolian for 2015 and 2016

## Community Investment

**\$5.3M**

Oyu Tolgoi invested \$5.3M in sustainable long-term projects in the South Gobi community thorough Q3'17

## Water Recycling

**86.5%**

Oyu Tolgoi's water recycling rate averaged 86.5% at the end of Q3'17 against a recycling target of 80%

1. In-country spend includes salaries, payments to Mongolian suppliers, taxes and other payments to the Government of Mongolia.



# turquoisehill.com

Turquoise Hill Resources Ltd.  
Suite 354 - 200 Granville Street  
Vancouver, BC, Canada V6C 1S4

TRQ: TSX, NYSE & NASDAQ

Turquoise Hill is an international mining company focused on the operation and development of the Oyu Tolgoi copper-gold mine in southern Mongolia.

