# Vimy Resources Limited Diggers and Dealers – 5 August 2015 Mike Young, Managing Director and CEO





# Uranium myths



"I can assure you that none of us are in the pay of the nuclear industry.

I was very anti-nuclear until I worked on the after effects of the Chernobyl accident –

now I am very pro-nuclear as I realise that we have an unwarrented fear of radiation, probably due to all the <u>rubbish about a nuclear winter</u> we were fed during the Cold War."

Professor Geraldine Thomas

London's Imperial College.

Member of the UNSCEAR committee on the health effects of the Chernobyl accident

## Uranium



## **Nuclear power**

- A non-fossil fuel for base load power
  - > Easy to transport, no particulates, no pollution
  - > Extremely high energy density
  - > Lower CO<sub>2</sub> emissions than all but hydro and wind energy
- One of the cheapest forms of electricity
  - > Fuel costs approximately 6% of total cost of electricity

#### **Uranium**

- Natural Uranium occurs as the isotopes U<sub>238</sub> (99.3%) and U<sub>235</sub> (0.7%)
- Fuel for most common reactors requires U<sub>235</sub> @ 5%

## One kilogram of Uranium

- 45 MWh of electricity
- 7 average Aussie homes for one year
- 16 t of coal
- 45 t CO<sub>2</sub>
- MRUP will produce enough UOX to fuel 7 reactors and offset 50 Mt CO<sub>2</sub> 8% of Aus CO<sub>2</sub>

## Power Fundamentals



## Watts the story

- Watt = V x A (60 W light globe)
  - > Capacity measured in Watts electric (kWe, MWe, GWe)
  - > Output measured as Watt-hours (kWh, MWh GWh)
- Power generation
  - > Power plants labeled by "Installed Capacity" (5MW, 800MW, 1000 MW = 1GW)
  - > "Capacity Factor" is measure of availability (fuel fill, maintenance, wind, sun, etc)
  - > Example 1 1 GWe reactor @ 90% CF for 1 year (8760 hr) = 8,000 GWh electricity
  - > Example 2 MWF 420 MWe @ 27% CF for 1 year = 977 GWh electricy
  - > \$16.2 B = cost to build a windfarm capable of producing 8,000 GWh per year for 60 years 400 km² and 1,500 WTGs



## Power Fundamentals

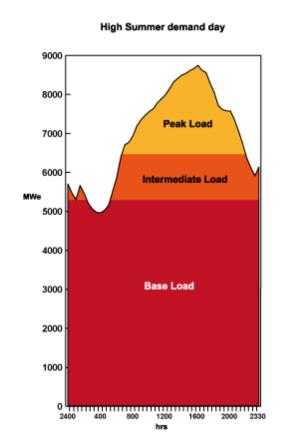
#### Load curves for Typical electricity grid

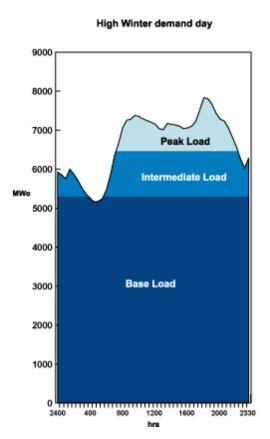
#### **Base load**

- Minimum capacity required on an ongoing continuous basis
- Fossil fuels, Hydroelectric, nuclear are the <u>ONLY</u> options – cost & reliability

#### **Peak demand**

- Additional capacity to meet relatively short periods of high demand
- Higher cost capacity that can be switched on an off quickly to match demand is more effective than generating "24 hr base load"
- Base load + solar, wind





## Uranium

## A paradigm shift is coming

- Global market balance switching to an overall shortage
  - > New reactors cause big increase in demand
  - > 3 years' supply to initially fill core + 1 year's stock in supply chain
- Increased demand mainly from China
  - > China expected to add **15 GWe** of capacity in 2015
  - > Circa12,000t concentrate (as fuel stock) when a reactor is switched on

## **Uranium trading at 10 year lows – unsustainable**

- Project delays and closures creating tightening supply
- Long term prices expected to be at least US\$75/lb
- Growing demand *but slowing current investment*

## Uranium myths, lies and in between

- Minerals Council of Australia (<a href="http://www.minerals.org.au">http://www.minerals.org.au</a>).
- WA DMP (<u>http://www.dmp.wa.gov.au</u>)
- World Nuclear Association







"The uranium market balance is expected to tighten substantially due to a delay in the development of major uranium mining projects and the rise in China's nuclear capacity. China and India alone have a total of 267 reactors slated for construction over coming years."

**Gary Gray MP** 





- Daquin Rail 20,000 t and 3.2km long
- 6,250 t per km
- 5Bt = 800,000 km of coal trains
- Distance to moon = 384,400 km
- Nearly half of China's RR used for movement of coal
- Rail network can't sustain China's energy growth using coal

What would a train look like carrying one day's worth of coal?

# China one day's coal use would fill a train 2200 km long





# Demand for reliable clean power – the next China boom



#### China continues to grow

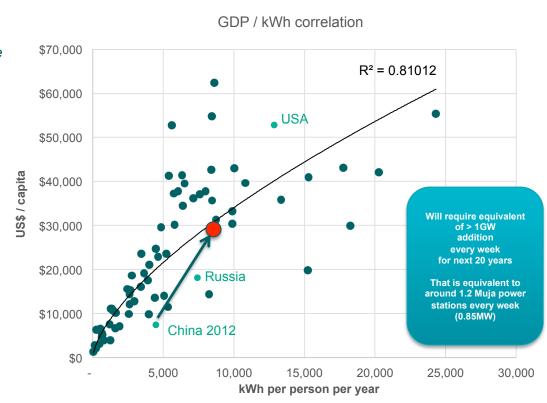
- China's rate of growth this century is c.10% pa
- Expected to average 5% to 6% y-o-y over next 20 years – economy will still treble in size
- By 2035 average wealth as measured by GDP / capita will be approaching US\$30,000 per person

#### China – BP Energy Outlook 2015

- 2035 World's largest energy importer
- Energy production rises by 47%
- Consumption grows by 60%

#### China – other developments

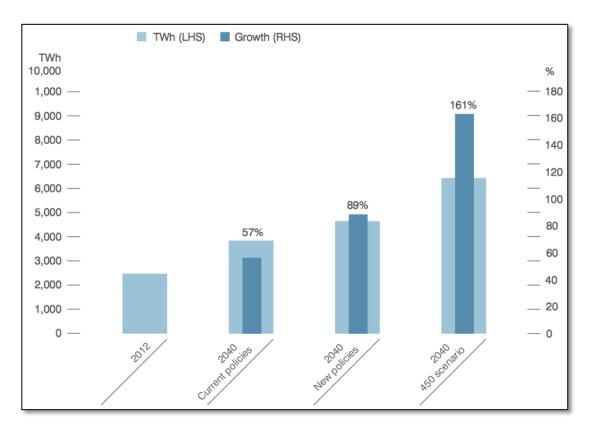
- Population reaches peak around 1.45b
- Electricity consumption increases with wealth per person 7,000kWh
- China will therefore require capacity > 2,500 GW roughly doubling from current 1,250 GW
- 24 existing, 26 under construction, 150 by 2030



Source: CIA World Fact Book; Vimy







## **Growth in Nuclear Energy**

Three Scenario energy projections to 2040:

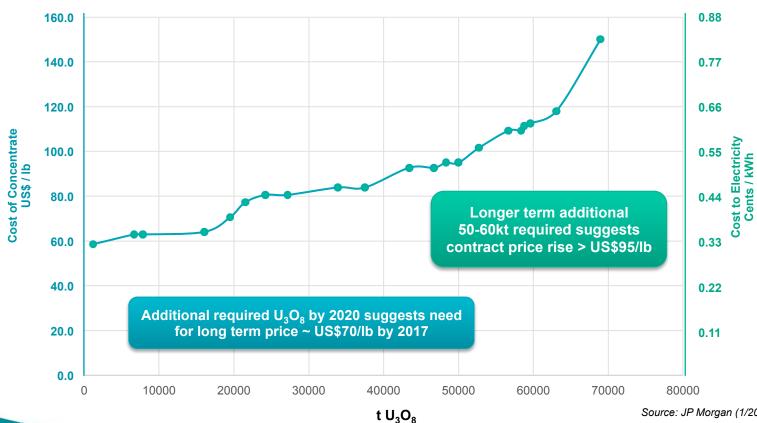
- Current policies
- New Policies
- 450 Scenario which seeks to limit the LT increase in average global temperature to 2°C by keeping CO<sub>2</sub> at 450 ppm

Source: MCA, IEA - World Energy Outlook 2014

# Uranium incentive price for new production



#### Incentive price in 2015 US\$



# Mulga Rock Uranium Project, Western Australia



## The second largest uranium deposit in Western Australia

- Large, low-cost, long life asset
- 59.7 Mt @ 550ppm U<sub>3</sub>O<sub>8</sub> for 73 Mlb (32,800t) U<sub>3</sub>O<sub>8</sub>\*
- Clear cut geology, mining and metallurgy
- 16 year LOM with estimated total production 47 Mlb U<sub>3</sub>O<sub>8</sub>
- PFS identifies upside on Resource, costs, and LOM

## **Targeting first production 2018**

- Pre-feasibility Study to be completed Q3 2015 with Feasibility Study to commence September 2015
- Investment decision and commencement of earthworks anticipated in 2H 2016
- State and Federal Government support for uranium mining and export including China and India
- Experienced management team with focus on production and development
   proven track record of building mines



# Mulga Rock Uranium Project





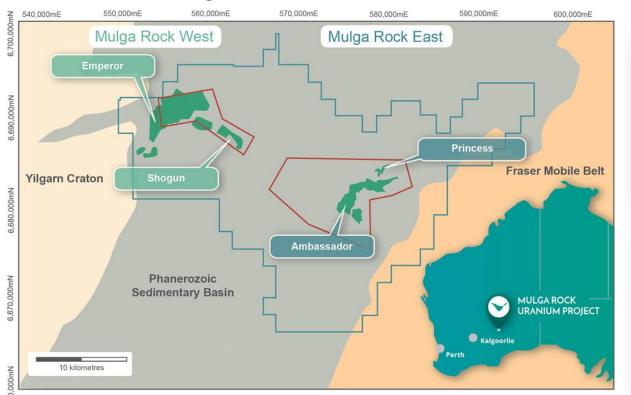


- Remote, arid location with no local inhabitants + 200km to nearest town
- Deposits covered by granted Mining Leases
- Access is via the Tropicana Mine Road AngloGold Ashanti

# Project plan of deposits

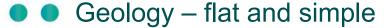


## • Initial focus on Mulga Rock East





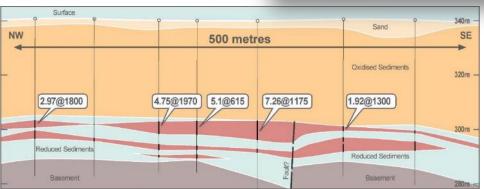




VIMY

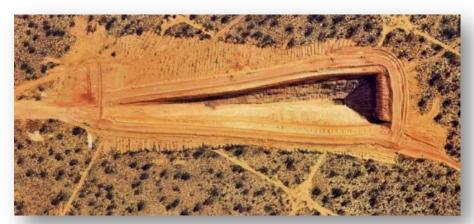
- Hosted within deeply weathered sediments comprising carbonaceous sandstone; silt; sandy lignites
- Mostly Uraninite (UO<sub>2</sub>) associated with carbonaceous material and lignite
   no complex silicate minerals
- Deep weathering = *soft friable rock*
- Deep pit voids to provide tailings disposal and waste dumps





# Mining – open pit

- Recent in-fill drilling confirmed continuity and grade
- Japanese test pit at Shogun in 1980s shows clear demarcation between carbon-rich mineralisation and oxidised overburden
- Deep weathering allowed for free dig mining methods
- PFS/DFS to explore bulk mining methods for overburden excavation using coal mining technology
- Strip mining allows waste dumping in pit voids



Test pit at Shogun dug by PNC in the 1980s





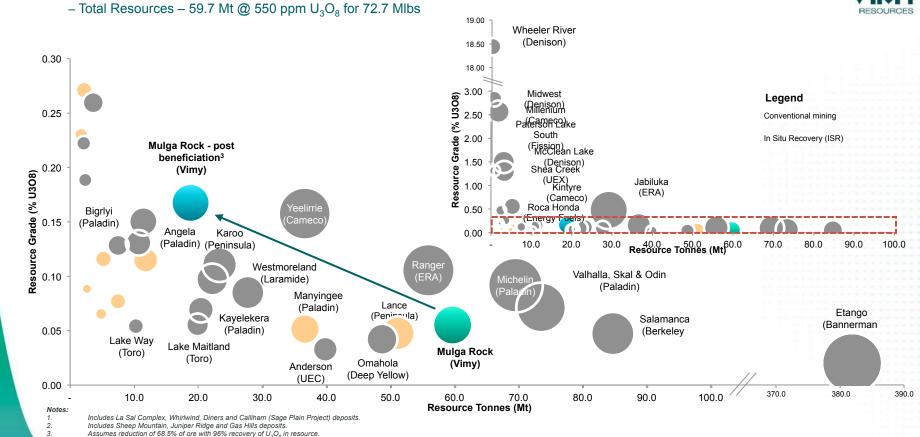
Close-up in test pit showing carbon-rich ore and free dig nature of material

# Where is Vimy placed: peer comparison of global projects

3. Source:

Company reports and filings.

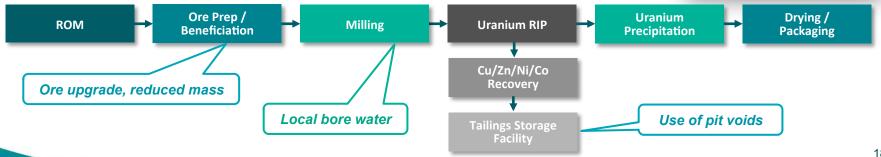




# Simple metallurgy – acid leach and resin-in-pulp

- Beneficiation removes >65% of gangue prior to leach circuit
- Preliminary flow-sheet developed acid leach and RIP
- Acid leach uranium extraction:
  - > Acid leach = proven technology
- Acid leach exhibits fast kinetics at ambient temperatures
  - Simple process and simple plant design
- Resin-in-pulp best for use in carbonaceous ore
- Base metal recovery as mixed carbonates
  - > By-product credits from Cu/Zn + Ni/Co
- PFS test work for completion September 2015



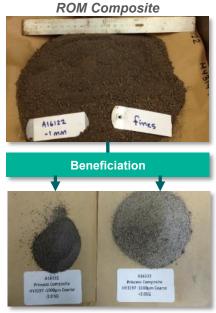




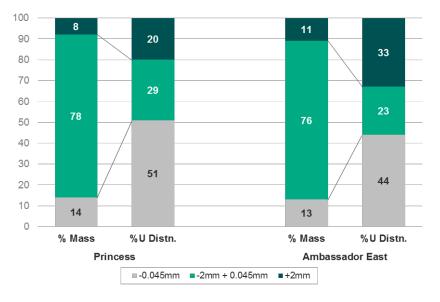


#### • Beneficiation breakthrough:

- > Ore is amenable to beneficiation = higher grade feed and smaller process plant
- > Significant improvements in reagent consumption and leach kenetics = *reduced costs*
- > Significant reduction in water usage and tailings volume



Uranium Ore Concentrate Fine Sand



Percentage of mass and uranium distribution in sized ROM material





#### **Key highlights from the test work:**

- Uranium resource contains a large portion of coarse, unmineralised silicate sand
- Uranium mineralisation is associated with light carbonaceous and clay minerals
- Uranium grades resulting from beneficiation are 2.7 3.4 times the original grade
- Mass rejection of 65-72% of ROM ore achieved
- Beneficiated ore uranium recoveries of 95-96% to final concentrate achieved



#### Final beneficiation results on a run of mine ore basis

Deposit	Initial Head Grade ppm U <sub>3</sub> O <sub>8</sub>	Beneficiated Ore Grade ppm U <sub>3</sub> O <sub>8</sub>	Uranium Upgrade *	% Mass Rejected	% Uranium Loss
Princess	657	2252	3.43	72	5.1
Ambassador	723	1980	2.74	65	4.1

## Recent achievements



#### **Successful Mulga Rock Scoping Study**

- Supports Vimy's view that the MRUP is Australia's best undeveloped uranium project
- Indicates that the project is economic at current long-term contract prices for uranium
- Simple mining process, production growth potential, resource growth potential

Key Financials – see appendix for details			
Capex	A\$332m plus A\$46m pre-strip		
C1 cost (first 7 years)	US\$25/lb U <sub>3</sub> O <sub>8</sub> *		
C1 cost (LoM)	US\$29/lb U <sub>3</sub> O <sub>8</sub> *		
Average annual EBITDA	A\$161m at US\$75/lb U <sub>3</sub> O <sub>8</sub> price		
NPV (10% DCF)	A\$764m **		
IRR	39% **		
Payback from start of production	2.6 years		

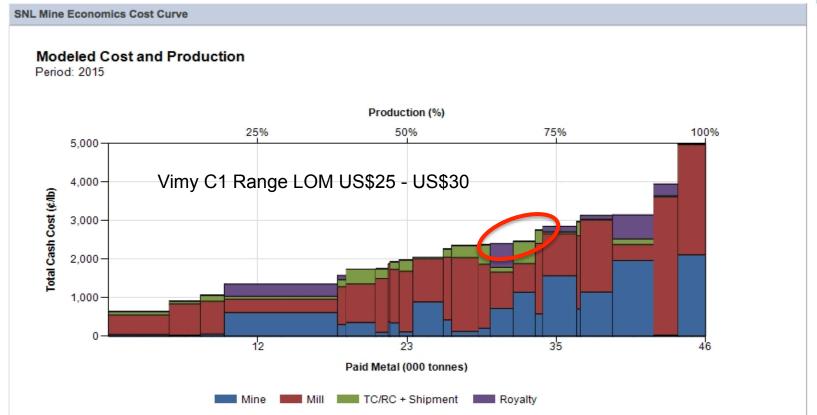
#### **Financing – Resource Capital Fund**

- Including by-product credits \*\* Inclusive of royalty, pre-tax
- A\$30 million funding package agreed with Resource Capital Fund VI
- Intended to fund Vimy through to project financing of Mulga Rock Uranium Project
- Initial A\$5 million via share placement for Mulga Rock Pre-Feasibility Study with in-principle terms agreed for additional funding of \$25 million – subject to remaining DD and FIRB



# Where is Vimy placed? Cash cost curve – SNL.COM







# Corporate overview



Capital structure <sup>1</sup>	
Shares on issue <sup>1</sup>	227.7 million
Share price (14 July 15)	\$ 0.40
Market cap 1	\$ 91 million
Cash <sup>1</sup>	\$ 8.9 million
Bank debt	\$ 0 million
Options (unlisted)	57 million @ 35c (June 2016)
	0.2 million @ 126c (Jan 2017)
	2.9 million @ 35c (June 2018)
	8.7 million @ 154c (Dec 2018)
	8.7 million @ 70c (Dec 2018)
	1.4 million @ 80c (Dec 2019)



Board and technical team <sup>2</sup>			
The Hon. Cheryl Edwardes	Non-Executive Chairman		
Mike Young	CEO and Managing Director		
Julian Tapp	Executive Director		
David Cornell	Non-Executive Director		
Aaron Hood	Non-Executive Director		
Shane McBride	CFO and Company Secretary		
Tony Chamberlain	Project Manager MRUP		
Xavier Moreau	GM - Geology and Exploration		

Significant shareholders <sup>1</sup>	
Forrest Family Investments	25%
Acorn Capital	21%
Macquarie	19%
Michael Fewster	16%
Resource Capital Funds VI 1	8%
Directors	3.5%

<sup>&</sup>lt;sup>1</sup> Includes issue of 18.2m shares to RCF associated on 21 May 2015. Cash is pro forma 31 March 2015 including \$5m RCF placement proceeds.

<sup>&</sup>lt;sup>2</sup> RCF has a right to nominate a Director after providing >\$10m as contemplated in funding package or >10% of Vimy issued shares.



## People: The Board



#### The Hon. Cheryl Edwardes - Non-Executive Chairman

- Former WA State Government Minister holding Ministries of Environment, Labour Relations and Attorney General
- Providing statutory and approvals advice to Atlas Iron, Hancock Prospecting, FTI Consulting
- Significant networks in State and Federal Government and broad experience and networks in China's business community

#### Mike Young - Chief Executive Officer and Managing Director

- Founding Managing Director of BC Iron Limited (ASX200:BCI) from 2006 2013. BC Iron went from first drill hole to first ore on ship in under four years and now exports 6 Mtpa of Iron Ore from a JV with FMG (75:25 BCI:FMG)
- Experienced Mining Consultant Resource Modelling and Estimation with Golder Associates
- Founding director of uranium developer Bannerman Resources and currently non-executive Chairman of Cassini Resources
- Studied at Queens University, Ontario and worked on uranium exploration projects and mines in Canada

#### **Julian Tapp – Executive Director**

- Head of Government Relations and Director of Strategy at Fortescue Metals Group until 2012 with special responsibility for expediting approvals
- Trained as an economist in London, lectured at a number of universities including the London School of Economics
- Economist and later Chief Economist for Ford Europe, BP and Rover Group before transitioning into role as Director, New Business Development

#### **David Cornell - Non-Executive Director**

- Founding director of the Element Group with significant commercial and financial experience in the mining and oil and gas sectors
- Previously an associate director at the LinQ group which managed Australia's largest listed resource fund
- Specialist in providing corporate and professional services to both WA junior explorers and international mining companies

#### **Aaron Hood - Non-Executive Director**

- BEng (Mechanical) and BCom both from the University of Western Australia and MBA from INSEAD
- Ten years in Sydney and Perth as executive director of a private equity firm with investments in mining services, oil and gas
- Chief Investment Officer for Squadron Resources, part of the Minderoo Group of companies















#### Shane McBride - Chief Financial Officer and Company Secretary

- Certified Practicing Accountant with over 33 years of commercial management experience gained in listed Australian companies
- Served as CFO, company secretary and director in exploration, development and producing mining companies
- Fellow of CPA Australia, Governance Institute of Australia and the Institute of Chartered Secretaries and Administrators

#### **Xavier Moreau – Geology and Exploration**

- General Manager of Geology and Exploration at Vimy since February 2010
- Valuable uranium project management experience with Areva and U3O8 Limited
- Extensive experience in uranium and gold exploration with Areva and Afmeco with significant time spent on Goldfields projects
- Educated in France and Canada and holds an Honours degree in Geology

#### Tony Chamberlain - Project Manager, Mulga Rock Project

- Involved in a number of uranium projects in Australia, Asia, Africa and Eurasia
- Extensive operational and process engineering experience with WMC and BHP Billiton projects
- Delivered pre-feasibility and feasibility studies and process design packages for Goldfields, Barrick, Paladin and Mega Uranium









# VIMY RESOURCES

## A unique uranium development

Located in a safe jurisdiction, with low risk and low costs mining process

Attractive deposit with sufficient scale and long mine life

Funding agreed through to project financing

Investment decision anticipated in H2 2016

Targeting first concentrate production in 2018

Robust financials, low cash costs

Excellent leverage opportunity to growing uranium demand, mainly from Chinese reactor builds

Experienced management team with proven track records in mining and production





# Appendix

Resource tables, project metrics and biographies

# Pre-feasibility study and schedule



## **Metallurgical test work – key breakthrough**

- Beneficiation work yields excellent results significant upgrade
- Leach and U extraction test work (underway)
- Uranium and base metal recovery (underway)

## **Environmental approvals**

- Draft Public Environmental Review (PER) submitted
- PER approval expected mid-CY2016

#### Feasibility study – 2H CY15 to 2H CY16

- Infill drilling, resource estimation, and mine optimisation and scheduling
- Geotechnical investigation trenches geotec, hydrogeology, bulk sampling
- Recovery optimisation and pilot plant to confirm up-scaling of front-end processing
- Engineering studies and long lead items



# Key physical and financial metrics



The Scoping Study results confirm the potential for the MRUP to be a low-cost uranium producer over a 16 year mine-life

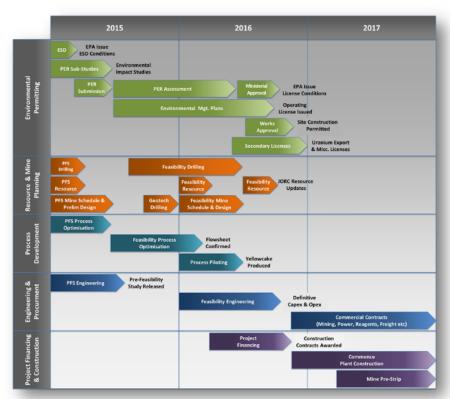
A flat exchange rate of A\$1.00: \$US\$0.76 and a flat uranium price of US\$75/lb U<sub>3</sub>O<sub>8</sub> have been assumed across the entire project life for the Scoping Study. The uranium price used represents a consensus view of the market analysts' long-term price to incentivise new uranium production.

Life of Mine (LOM)	16 years
Nameplate Run-of-Mine	2.55 Mtpa
ROM Uranium Grade (Years 1-7)	640 ppm U <sub>3</sub> O <sub>8</sub>
ROM Uranium Grade (LOM)	498 ppm $U_3O_8$
Average Strip Ratio LOM (waste tonne / ore tonne)	13.6
Overall Metallurgical Recoveries	
Uranium	89%
Copper	41%
Zinc	61%
Nickel	48%
Cobalt	46%
Annual Production – Uranium as U <sub>3</sub> O <sub>8</sub>	3.00 Mlbs U <sub>3</sub> O <sub>8</sub>
Process plant and infrastructure capital costs	A\$332M
Mine pre-strip cost (additional to process plant capital)	A\$46M
Sustaining capital (LOM)	A\$108M
Uranium Opex Years 1 - 7 (after by-product credits)	US\$25.24 / lb U <sub>3</sub> O <sub>8</sub>
Uranium Opex Years 1 - 7 (before by-product credits)	US\$29.43 / lb U <sub>3</sub> O <sub>8</sub>
Uranium Opex LOM (after by-product credits)	US\$29.11 / lb U <sub>3</sub> O <sub>8</sub>
Uranium Opex LPM (before by-product credits)	US\$31.37 / lb U <sub>3</sub> O <sub>8</sub>
Base Case Uranium Price	US\$75.00 / lb U <sub>3</sub> O <sub>8</sub>
Exchange Rate A\$:US\$	0.76
NPV (inclusive of royalty, pre-tax @ 10% DCF)	A\$764M
IRR (inclusive royalty, pre-tax)	39.1%
Payback from start of production	2.6 years

# Pre-feasibility Study snapshot July 2015



- Mulga Rock a significant deposit
   > 72.7Mlb U<sub>3</sub>O<sub>8</sub> (59.7Mt @ 550ppm U<sub>3</sub>O<sub>8</sub>)\*
- Vimy aims to produce >1,300 tpa U<sub>3</sub>O<sub>8</sub> for +15 years
- Capital and operating costs competitive and falling
- Considered possible to produce concentrate (and by-products) at low costs
- Could be under construction in 2H 2016 –
   "First shovel in ground"







Deposit / Resource	Classification	Cut-off Grade (ppm U₃O <sub>8</sub> )	Tonnes (Mt)	U <sub>3</sub> O <sub>8</sub> (ppm)	U <sub>3</sub> O <sub>8</sub> (MIb)
Mulga Rock East					
Princess	Indicated	200	1.3	690	1.9
Princess	Inferred	200	2.5	380	2.1
Ambassador	Indicated	200	13.0	750	21.6
Ambassador	Inferred	200	15.1	480	15.9
Sub-total			31.9	590	41.5
Mulga Rock West					
Emperor	Inferred	200	24.1	500	26.4
Shogun	Inferred	200	3.7	590	4.8
Sub-total			27.8	510	31.2
Total Resource			59.7	550	72.7

This resource estimate was released to the ASX on 20 April 2015. Please see http://www.asx.com.au/asxpdf/20150420/pdf/42xzqil1tafsvv.pdf

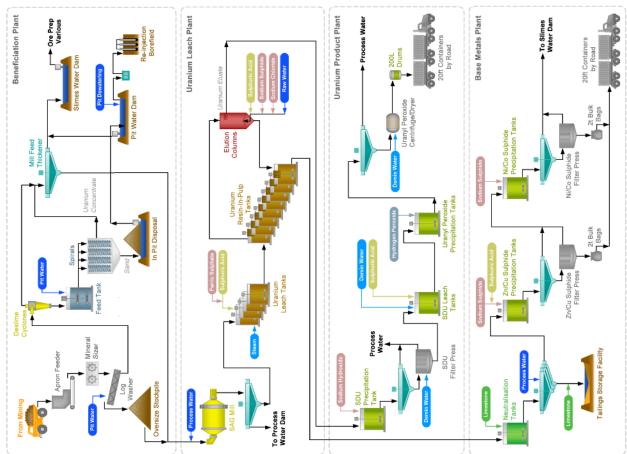




Deposit / Resource	Tonnes (Mt)	Cu (ppm)	Zn (ppm)	Ni (ppm)	Co (ppm)		
Mulga Rock East – tonnes and grade							
Princess – Indicated	1.3	750	1280	440	210		
Princess – Inferred	2.5	270	500	250	140		
Ambassador – Indicated	13.0	340	1350	600	250		
Ambassador – Inferred	15.1	170	320	300	160		
Total	31.9	270	790	420	200		
Deposit / Resource	Status	Cu (kt)	Zn (kt)	Ni (kt)	Co (kt)		
Mulga Rock East – contain	Mulga Rock East – contained metal						
Princess	Indicated	0.9	1.6	0.6	0.3		
Princess	Inferred	0.7	1.3	0.6	0.4		
Ambassador	Indicated	4.4	17.5	7.8	3.3		
Ambassador	Inferred	2.6	4.8	4.6	2.4		
Total		8.6	25.2	13.6	6.4		







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The purpose of this presentation is to provide general information about Vimy Resource Limited (**Vimy**); it constitutes a professional opinion only and is given in good faith. It is not recommended that any person makes any investment decision in relation to Vimy based on this presentation. To the extent that this presentation contains "forward-looking statements" they are only subjective predictions and are subject to inherent risks and uncertainties which could cause outcomes to differ materially from those expressed, implied or projected in such forward-looking statements. No representation or warranty, express or implied, is made by Vimy that the material contained in this presentation is accurate, reliable, relevant or complete, or will be achieved or prove to be correct.

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#### **Competent Persons' Statement**

The information in this announcement that relates to the Exploration Results for the Mulga Rock Resource Estimate (U<sub>3</sub>O<sub>8</sub>), Resource Database, Geology and Bulk Densities are based on information compiled by Xavier Moreau, who is a Member of the Australian Institute of Geoscientists. Mr Moreau is a full time employee of Vimy Resources. Mr Moreau has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which is being undertaken to qualify as Competent Persons as defined in the 2012 Edition of the JORC 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Moreau consents to the inclusion in the announcement of the matters based on his information in the form and context in which it appears.

The information in this announcement that relates to the Mulga Rock Mineral Resource estimates (U<sub>3</sub>O<sub>8</sub>) is based on information compiled under the supervision of Coffey Mining as consultants to the Company and reviewed by Ingvar Kirchner an employee of Coffey Mining. Mr Kirchner consents to the inclusion, form and context of the relevant information herein as derived from the original resource reports. Mr Kirchner has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which is being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the JORC 'Australasian Code for Reporting of Exploration Results. Mineral Resources and Ore Reserves'.