

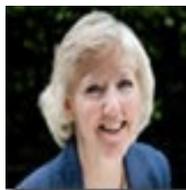


Cycladex
Investor Presentation



Chairman and CEO

Roger Pettman, PhD DSC.
 Founder of Cycladex
 Co-Founder of Revolymer raising £40m including an AIM IPO
 Co-founder Chirex with \$147m NASDAQ IPO



Chief Financial Officer

Christine Betts ACA
 Former CFO of Microsoft UK with 2000+ employees
 Joined Microsoft with 4 UK employees
 Responsible for the building of Microsoft Reading Campus.



Independent Non-Executive Director

Lieven De Smedt, eng, MBA, MiF
 Business Executive 30 yrs experience
 Chairman of the Board at AgroSavfe (AgTech, Belgium)
 Chairman of the Board at BioMillenia (BioTech, Paris)



Independent Non-Executive Director

Professor Adrian Boyce
 Leader in Applied Geoscience research
 4 decades of Scientific Research into Mineral Deposits
 Published over 300 peer-reviewed papers
 Fellow of the Society of Economic Geologists (SEG) and Geology Applied to Mineral Deposits (SGA)



Chief Scientific Officer

Sir Fraser Stoddart, Nobel Laureate
 Director for the Chemistry of Integrated Systems at Northwestern University
 Knighted by the Queen for his work in nanotechnology
 Awards include; the King Faisal International Prize, the Albert Einstein World Award, the Feynman Prize in Nanotechnology and the Tetrahedron Prize for Creativity in Organic Chemistry. Over 1000 publications in the most prestigious scientific journals
 Burning ambition to make an impact on society



Independent Adviser

Richard Brown
 Chief Commercial Officer at Gabriel Resources Gold Mine (Rosia Montana & Silver Project)
 Prior Head of Corporate Finance and COO at Ambrian (Natural Resources Investment Bank)
 Funding, regulatory and compliance focus in mining sector
 Significant experience in the gold mining market



Executive VP, Technology Transfer

Dale Arnold CChem
 DuPont Chemical Engineer with 35 yrs experience in plant design, build and commissioning
 Engineered titanium dioxide plant in Taiwan from inception to production
 Developed and scaled up Cycladex process development

Shareholder	Percentage
Roger Pettman	52.80%
Dale Arnold	14.96%
Lieven De Smedt	6.50%
North Western University	5.00%
Sir Fraser Stoddart	4.00%
Comstock Mining	3.00%
Xinova	3.00%
Angel Investors	3.00%
Minority Shareholders below 3%	14.24%

Business Overview

Cycladex aims to provide an alternative to the use of cyanide in precious metals extraction with a 'disruptive' new chemical process/flowsheet that promises to obviate community concerns and objections to mining projects. It also has the potential to 'unlock' the revenue potential of certain stranded gold deposits and difficult-to-treat, gold-bearing materials and promises lower capital and operating costs and a lower overall environmental footprint.

Key points

- Cycladex has developed a process (patented) which will reduce operating and capital costs by 30-50% with a shorter processing time than that for the more traditional cyanide route, and using more environmentally friendly chemicals
- Existing mine site processing plant facilities can be modified easily to run the process; a simple switch rather than costly changes.
- Straightforward business model – simple pathway to cash generation with royalties and sale of licences. Partnering with global suppliers of chemicals and a capital-light growth profile in the first instance; growth is not dependant on displacing mainstream cyanide-related gold production
- Improved process economics may allow formerly uneconomic deposits (tailings and refractory ores) to be brought into production. Interest from several parties suggests strong growth potential (some contracts have been won / in negotiation). Demonstration and scale-up is currently in progress with E-waste also a potential opportunity
- Depth of technical (chemical, engineering, process) expertise across experienced Management/Board is a differentiator

Patented Product

- Patents have been established after years of work with [Reputable London Based Lawyer]. The process is not easily replicated.

Cheap and Quick Process

- The Cycladex process uses relatively cheap and easily accessible chemicals. The time to process each batch of crushed ore from mining is significantly shorter than for the cyanide process.

What's the difference?

- Cycladex is using known chemicals, the difference being to get the reacting chemicals to the right place at the right time to effectively leach precious metals. Recovery of gold uses α -cyclodextrin (a starch extracted from corn).

Cycladex process can target new opportunities

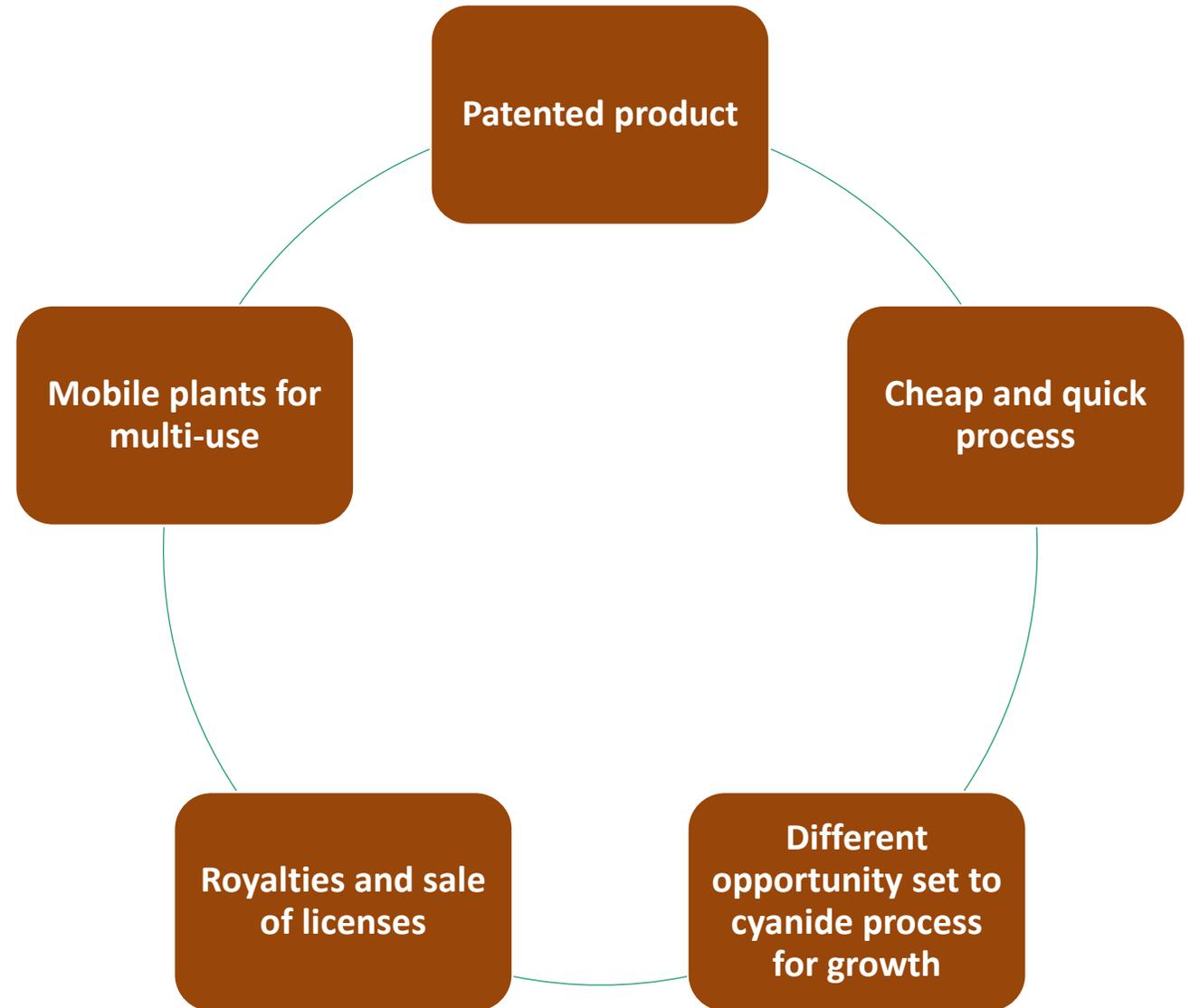
- The Cycladex process can target existing and new resources;
 - Tailings that aren't economic using cyanide
 - Countries where cyanide is banned (e.g. Spain)
 - Deposits with refractory ore (where gold is enclosed by other minerals that cannot be easily leached)

Simple Business Model

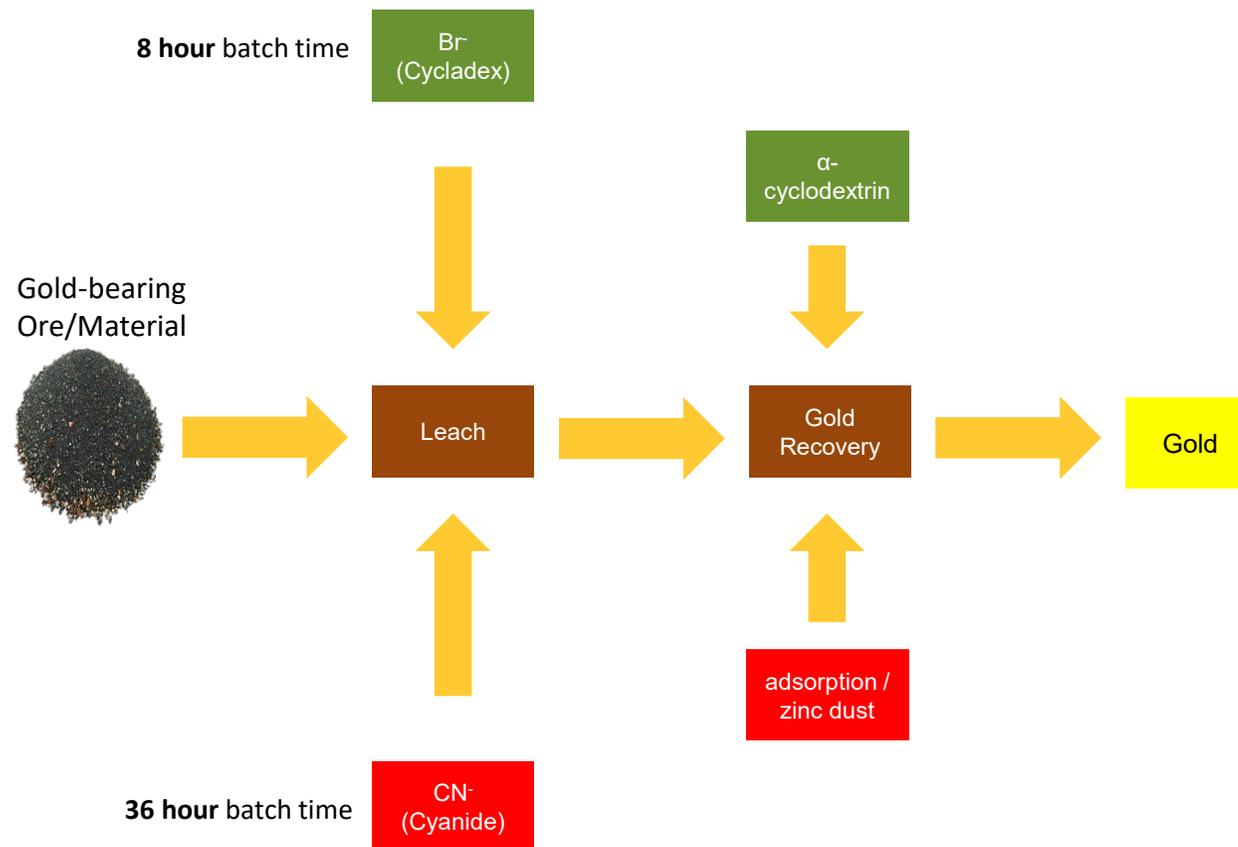
- Revenues initially to be generated through Royalties and sale of licenses

Further out, reusable mobile plants may be employed

- The Cycladex process could use mobile plants for multi-use at several different sites with pre-prepared feed (e.g. tailings)



High Yield and Quick Process



Cycladex process

Cycladex can replace the use of cyanide. Test work shows:

- Quicker leach times 8h vs 36h
- Higher recoveries (typically +5%)
- Environmental concerns (large dams, water and cyanide usage) reduced
- May work where gold is refractory (i.e. – those deposits where gold is trapped in minerals which can't be leached by cyanide easily)
- Lower cost, lower CAPEX

Cyanide process

Cyanide revolutionised the recovery of gold from lower-grade and non-refractory deposits.

But it comes with its challenges

- Additional costs (operating and capital)
- Safety aspects in transport, storage and use
- Community concerns
- Not without its problems. e.g Baia Mare tailings spill in Romania

Competitors

- Majority of industry uses the gold cyanide process
- Dundee Technologies
 - uses chlorine gas in close loop system
 - Capex 15% higher than the cyanide, 50% higher than Cycladex
- Barrick Gold
 - has patented a process based on EDTA but
 - complicated and used only on e-plant

Cost considerations

- Historically low innovation in industry
- Strong Cyanide lobby, 500,000 MT at \$3k per tonne

	Cyanide	Cycladex
Gold Leaching	\$110.00	\$50.00
Gold Isolation	\$12.00	\$10.00
Cyanide destruction	\$10.00	-
Cost per ounce	\$130.00	\$70.00

Business Streams

- Primary immediate revenue through
 - Licensing
 - Royalty model
- Discussions are progressing with:
 - Key end users/customers (see next page)
 - Suppliers of the chemicals in the process who are opening doors for Cycladex

Longer Term Opportunities

- Release of Constrained Assets
 - Deposits where ore is refractory and capital costs are too high
 - Deposits in countries where cyanide is banned
 - Significant tailings opportunity where constructing cyanide plant too expensive
- E-waste

- **Customer A - \$5b Private Gold Mining Company**
 - Existing mining company has tailings from the last 20yrs with 2g/t gold at existing mine
 - Cyanide gives low yield because of presence of iron
 - R&D license agreement signed, technology transfer in Q1 2019
 - Need process plant but no mine development, 18-24 months for commercialization
- **Customer B - FTSE 250 Gold Mining Company 1.4m oz annual production**

Owns the largest undeveloped silver deposit in Russia: potential for production of 292 m oz of silver at 586 g/t over the life of the mine plus 2m ounces of gold

 - Cyanide works poorly with a 25% yield for silver, Cycladex testing provides a yield of 90% giving additional \$220 recovery per tonne of ore, equivalent to an additional revenue potential of \$175m annually
 - Process proved in their labs, R&D license agreement signed, commercial term sheet in final negotiations providing exclusivity for Russia
 - Project delayed for 1 year for mine development
- **Customer C - Largest Steel Company with gold in their waste**
 - Customer generates 2m tonnes of pyrite cinders with 2g/t gold and 18g/t of silver
 - Cyanide doesn't work because of iron, product now used in construction without isolating metals
 - Exclusive option agreed
 - Potential of \$160m or revenue per year for customer, \$8m for Cycladex
 - JV in discussion
- **Customer D - Spanish Based Conglomerate with extensive tailings**
 - Copper and zinc mine traditionally but gold discovered in tailings at 2g/t
 - Cyanide banned in Spain
 - Cycladex shipping pilot plant for scale-up
- **Customer E – AIM Listed Gold Company**
 - Restarting an existing plant for gold production of 25,000 oz per year
 - Refractory ore where previously used Biox with poor yields
 - Considering selling concentrate but processor requiring 25% of Gold
 - Ore already processed by Cycladex 70% on pass yield with simple process
- **Customer F – Third Largest Miner in Peru**
 - Copper/gold mine with tailings
 - Cycladex process can separate gold from copper, cyanide cannot
 - Sample already sent, CDA signed
 - Sample to be processed by Chilean partner Sunsa
 - Solvay also interested in developing process
- **Cycladex Processing**
 - **1000 Tonne of ore sourced in Arizona at 30 gm per tonne**
 - **Lease of existing plant in negotiation**
 - **Opportunity for \$1m+ within 12 months**

Project	Revenue Received	Revenue 2019
A		£35,000
B	£50,000	-
C	-	£250,000
D		
E		£50,000
F		£50,000
G		£50,000
Cycladex Processing		£175,000
Total		£610,000

- Primary immediate revenue through
 - Selling Licenses for a set fee
 - Royalties which are typically single digits (based on the gold production) with annual minimums

Monthly Cash Burn / Cost Breakdown	
Item	Cost
Travel Costs	£7k
Processing Labour	£8k
SG&A	£47k
Patent	£6k
Business Development	£20k
Technology Transfer	£12k
Total	£100k

Background and funding

- Cycladex was incorporated in March 2014 as a Delaware corporation
- Seed funding through National Science Foundation (NSF) Small Business Innovation Research (SBIR)
 - Phase I \$150k
 - Phase IB \$30k
 - Phase II \$700k
- Other funding
 - 2015: Comstock Mining \$60k cash \$240k PIK
 - Angel investing \$120k
 - Management \$150k plus no salary for 4 yrs
- Development of the process and early test work
- Now working on scaling up at 3 European Customers

Contracts Won/in Progress

- Non Exclusive R&D License with Customer with Customer B \$65k
- Non Exclusive R&D License Agreement Customer A \$35k
- Exclusive Option on Pyrite Cinders Customer C
- JDA agreement Praxair 2016
- LOI with Solvay
- Term Sheet in Preparation with Customer B for Exclusive License Russia

Fundraise

- Funded to-date primarily by Directors and grant funding, never previously raised institutional capital
- £5m of EIS and VCT qualifying funds can now be deployed to build out the team and bring the Company to commercialisation
- Use of proceeds per annum:
 - Business development and commercialisation - £324k
 - Patent filing and prosecution - £84k
 - Technology Transfer and Processing Team - £240k
 - SG&A - £352k

Summary

- Experienced, technical and fully committed management team with a clear plan to commercialisation
- Low Cost Process and existing client facilities can be used
- Strong IP / Patents and this will be further strengthened with funds raised
- Simple Business Model for cash generation
- Strong customer traction

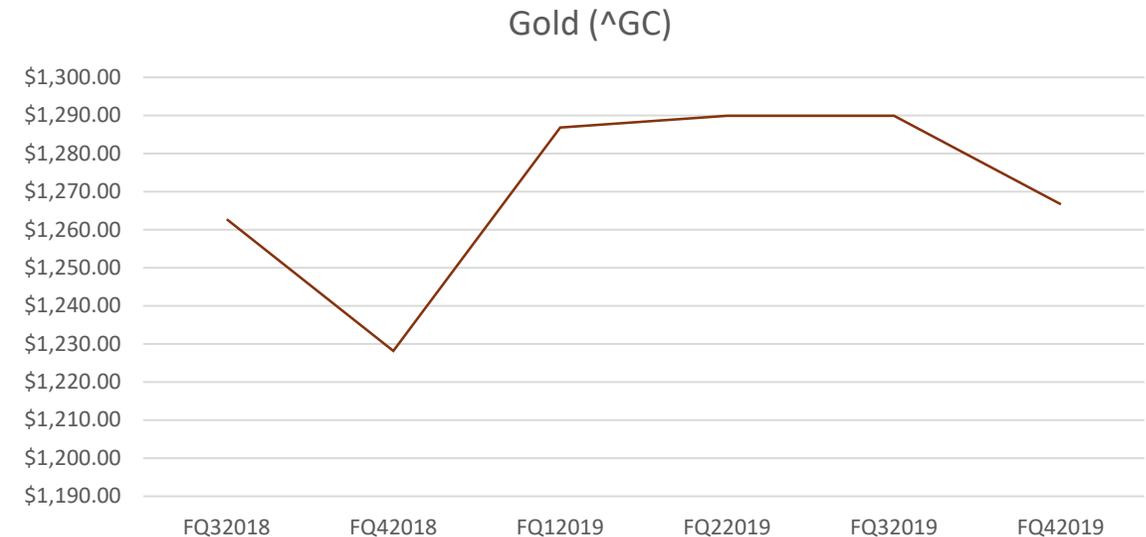
Appendices

- Licensing agreement with Northwestern University for certain patent rights
 - Running royalty of 3% of net receipts
- Other patents in the name of Cycladex

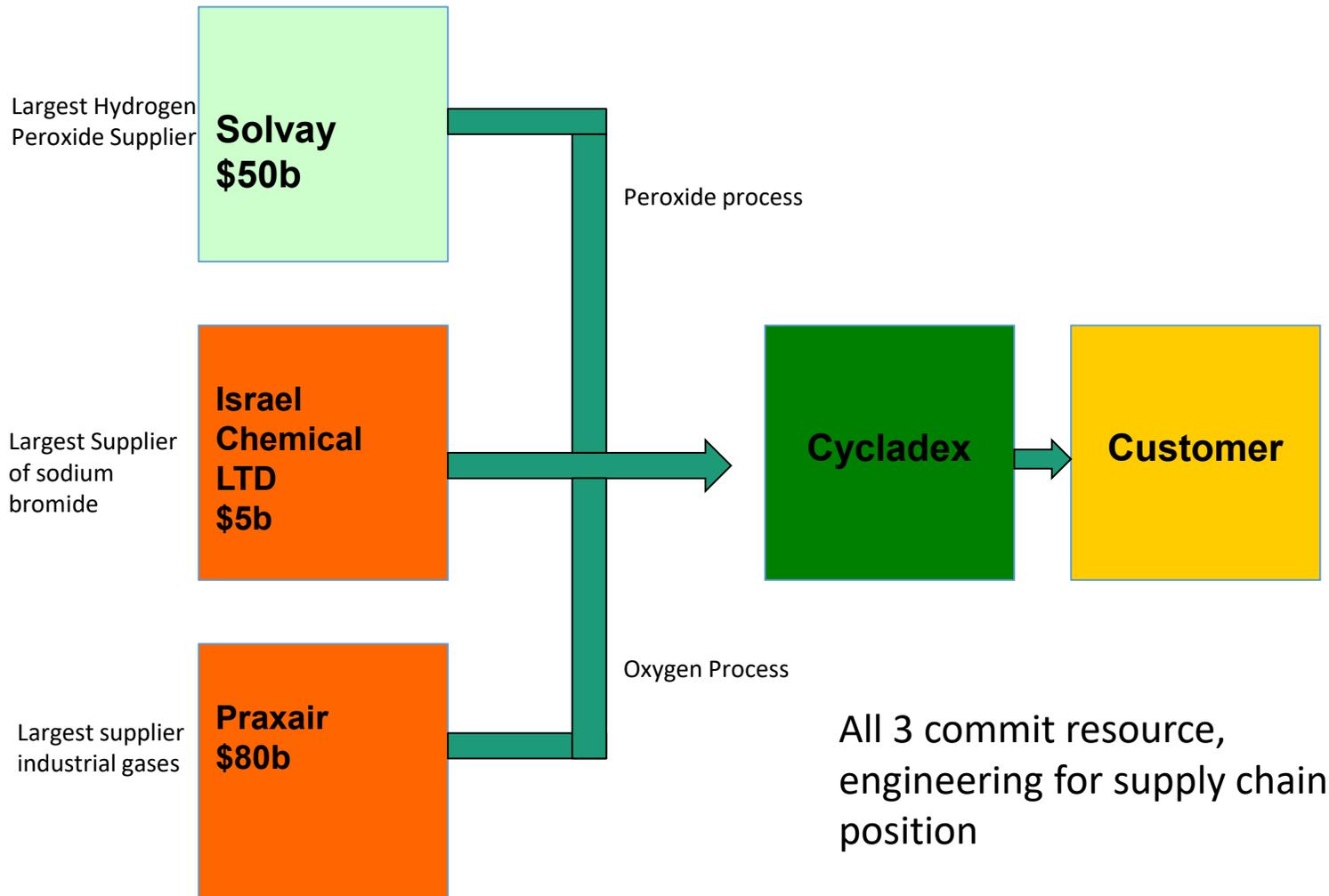
Patent	Countries / Organisations	Status
Compounds and Methods to Isolate Gold	China, Eurasian Patent Organisation*, Armenia, Azerbaijan, Belarus, Kyrgyzstan, Kazakhstan, Russian Federation, Tajikistan, USA	Granted / Registered
Compounds and Methods to Isolate Gold	Australia, Canada, European Patent Office, Peru, Philippines, Uzbekistan, South Africa	Pending
Peroxide Process	Australia, Canada, Chile, China, Eurasian Patent Organisation*, European Patent Office, Peru, USA, South Africa	Application Filed

**includes Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Russia, Tajikistan and Turkmenistan*

- Nearly all the gold ever mined is still in circulation or locked in vaults. Over 190,000 tonnes gold have been mined over time with current primary production set at over 3,000 tonnes of gold and 28,000 tonnes of silver per year (GFMS , Silver institute).
- Precious metal deposits come in all shapes and sizes and can form in several different ways, associated with different suites of metals and in different geological environments. The larger, higher-grade deposits are becoming more and more difficult to find.
 - Grade and recovery are different across deposits with, in some cases, poor recovery of precious metals, with tailings held in impoundment areas
 - There are also hundreds of projects globally – some are stranded due to ore being refractory or located in countries where cyanide use is prohibited or tightly controlled
- In the future, Cycladex will evaluate the many potential opportunities globally in which it can profit from its disruptive technology.

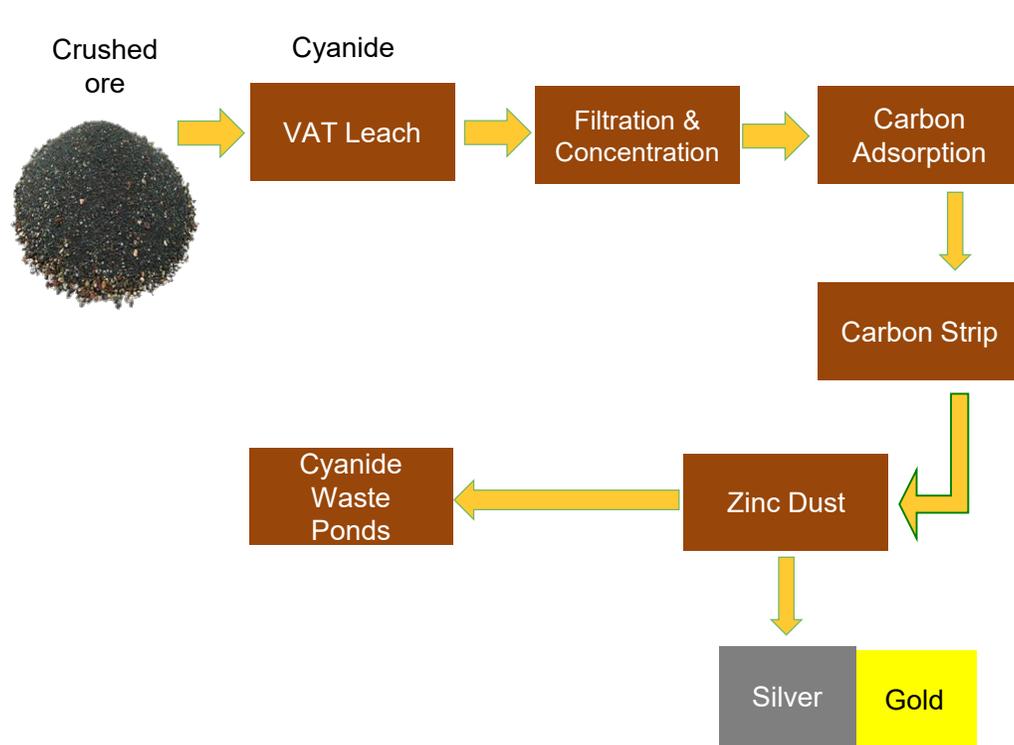


Source: Gold Price Consensus Capital IQ

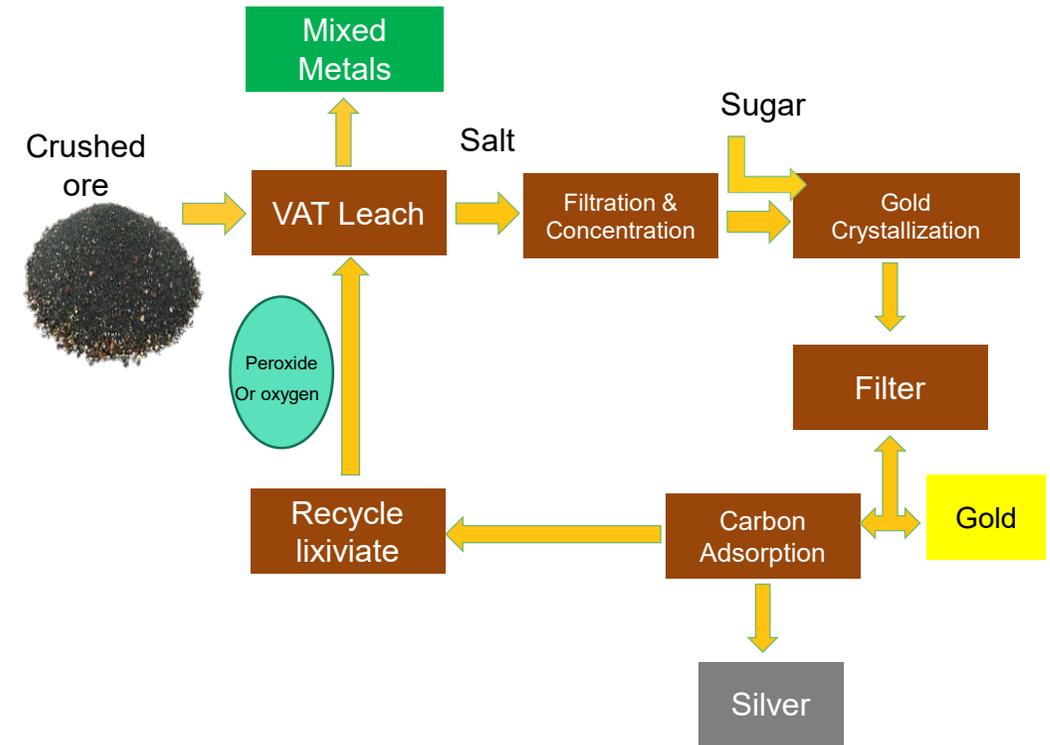


- The inputs to the process are fairly simple, and are not supply constrained in key regions
- Cycladex's suppliers are financially robust, large companies
- These companies could create future synergies in terms of business development for Cycladex

Cyanide Merrill Crowe Process – 36h Batch Time



Cycladex Process – 8h Batch Time



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