

# ISAP Project Review



## Wealth Unearthed

Investor day : 28 October 2010



# Objectives of this Session

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“To provide an update on the ISAP project”.

“To field questions”



## ISAP project objectives

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- To provide the market with competitive shock tube initiating systems.
- To assist customers to convert to shock tube.
- To develop technologies required for a world scale shock tube plant.
- To improve safety and environmental standards.
- To construct and fully ramp up the asset.
- To achieve the targeted investment hurdles.
- To offer more competitive shock tube technologies internationally.
- To enhance the AEL brand.

# ISAP



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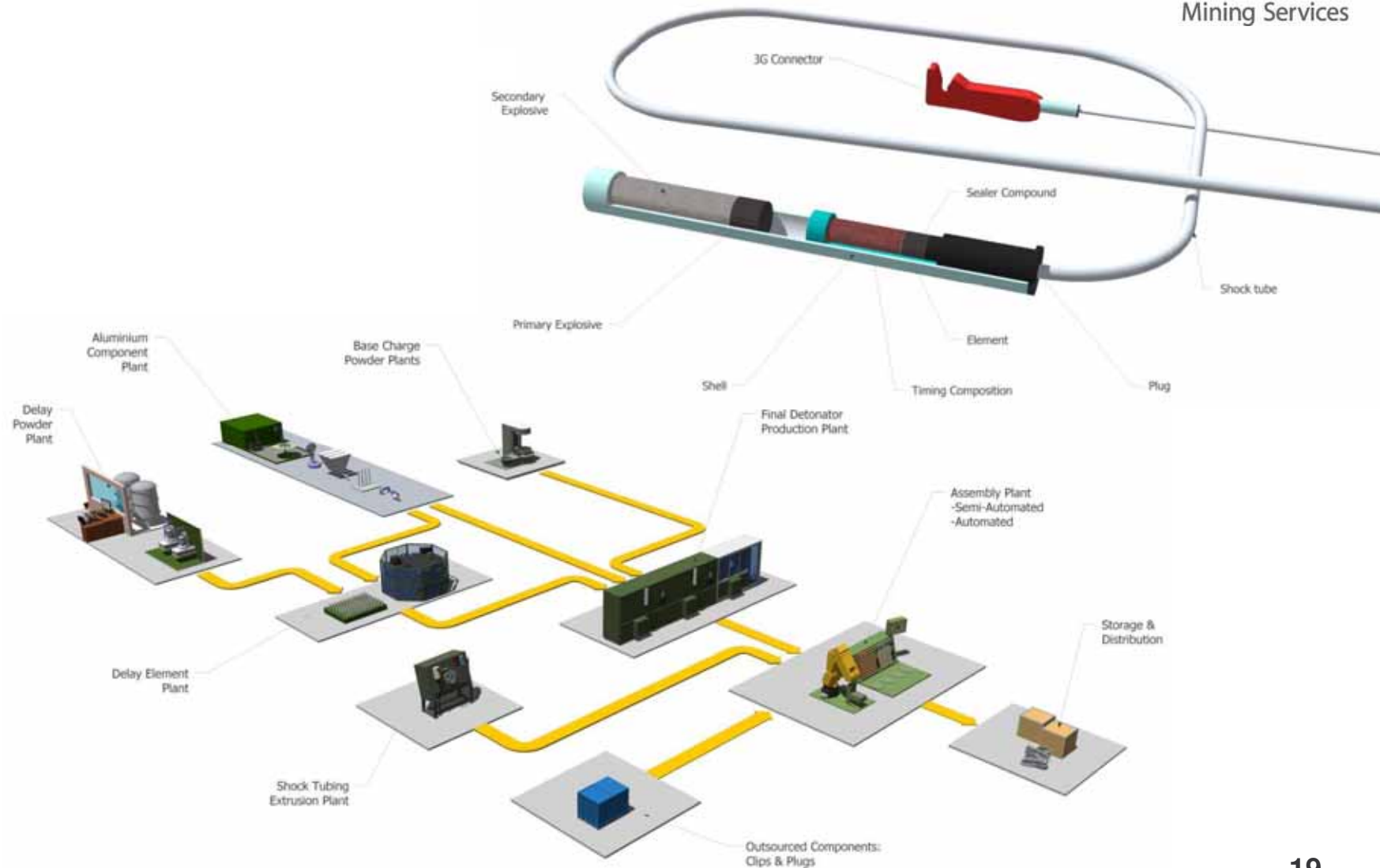
## ISAP Comprises Three Plants

- Shocktubing Plant
- Detonator Plant
- Assembly Plant
- Development of Outsourced Components



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# Basic Flow of a shock tube Plant



# Detonator Plant - Final Stage



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# ISAP – Flexible Automated Robotic Assembly





## Key Metrics

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- Latest total output requirements:
  - Final assemblies: Base load of minimum 80 million units.  
70% auto-assembled - 30% conventional
  - Detonators: Base loading minimum 140 million.
  
- Plant to operate 24/7.
  
- Product Split
  - Over 80% to be narrow reef.
  - Remainder : surface range and  
components for export/remote assembly.



## Key Benefits

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- Safer processes.
- Improved product performance.
  - Step-up in product quality
  - More accurate shock tube product.
  - Improved ease of use.
- High volume benefits:
  - Safety
  - Large batch sizes, consistency and quality
  - Purchasing power.
  - Lower overheads per unit.
- New propriety technologies and know how.

# Key Developments

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- Chemistry, Plant processes, Equipment
  
- Shocktubing.
  
- Delay powders.
- Delay elements.
- Base charge
  
- Detonator production.
  
- Auto-Assembly.
  - Modular single purpose high speed.
  - Flexible Robotic Assembly.
  - Conventional / Semi automatic

# Key Considerations

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- Narrow Reef Range
  - Over 80% of output.
  - Tight range of products.
  - Short lengths.
  - High speed long runs.
  
- Surface and Massive Range
  - Smallest volume demand.
  - Very wide range of products
  - Wide range of different delay elements.
  - Different clips
  - Large amount of changeovers required.
  
- 1<sup>st</sup> Priority : Narrow Reef Range – 80% of the project benefit



## Key Development Work

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- Outsourced components – completed.
- Tubing – completed
- 4000ms ISAP Detonator – completed
- 200ms Detonator – ISAP market trials in Nov 2010.  
No concerns  
currently using conventional 200ms.
- Then starting with remaining 20% of delay element range for surface. Base work already established.
- Some work on base charge powders to extend capacity.



## Key Development Work

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- Equipment all functional and in production.
- In full ramp up mode.
- Post installation - technical improvements and debottlenecking
- Journey of exploration – but now known territory.
- Achieving new records:
  - September output – world record:
  - Total of 18 million elemented detonators.
    - 7.4 million from Isap Detonator Plant
    - 11 million from conventional plants.

# Ramp Up



- Achieving new records:
  - September output – world record:
  - Total of 18 million elemented detonators.
    - 7.4 million from ISAP Detonator Plant
    - 11 million from conventional plants.

Ramp Up Level	Jun 10	Sep 10	
■ Shock tubing plant	80%	90%+	completed
■ Detonator plant	44%	64%	confident > 80% Dec `10.
■ Auto assembly plant	30%	35%	secondary focus – to pick up. confident 50% - 60% Dec `10



## ISAP – Investment Returns

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- Project IRR reviews remain above hurdle rate of 22% real.
- Jun '10 spend to date 554 million – estimated final R650 to R700 million.
- Relies only on own volume conversion to meet hurdle
  
- Cautious with conventional plant shut down – ISAP track record and exports.
- Conventional plant ramp down – circa 600 positions in April 2011.
  
- Hybrid product margins lower than full ISAP product.
- Some material margin gains already achieved.
  
- R120 million fixed cost and R80 million material margin remains on track.
- Largely auto assembly dependent, most complex plant to ramp up
- Confident for end 1Q2012 - Auto assembly fully ramped up.

# Focus



- Ramp-up – general debottlenecking and 200ms narrow reef detonator.
- Surface range delay element development.
- Continued development of world class operations management processes.

## Key Dates:

- Dec 2010: 200ms ISAP detonator in the market.  
Over 10 million/mth ISAP detonators produced.  
Over 2.5 million/mth ISAP Auto assembled units produced.
- Apr 2011: Start of closure of part of conventional plant capacity.
- May 2011: First full ISAP surface product into market.
- Mar 2012: Auto assembly fully ramped up and project completed.

# Questions



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