

Mining & Metals Scenarios to 2030



Mineral Economics and Management Society
Phoenix, March 3, 2010

Project objectives

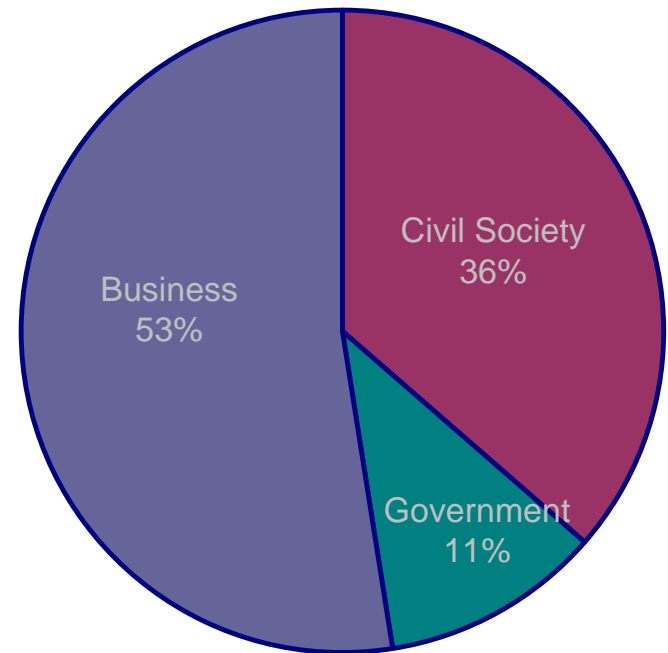
- **Stimulate dialogue and mutual understanding** between the public and private sectors and civil society regarding the future of the mining and metals sector in a non-threatening context
- **Deepen insight into the complex context** in which the sector operates by bringing together multidisciplinary and multistakeholder perspectives
- Provide useful tools to improve **strategic decision-making**, and identify **strategies for collaborative action**

Multistakeholder scenario development process

Over 20 workshops



255 participants



Developing the scenarios: how did we get there?



- | | | | | |
|---|--|--|---|---|
| SOCIAL <ul style="list-style-type: none"> • COI expectations • Income inequality • Population growth • Consumer behaviour • Indigenous expectations • Skills gap • Health and safety expectations | TECHNOLOGICAL <ul style="list-style-type: none"> • Automation of operations • Substitutions for minerals • Energy innovation • Resource scarcity • Low carbon technologies • New uses for materials | ECONOMIC <ul style="list-style-type: none"> • Global economic growth • Emerging middle classes • Developmental status of economies • Access to capital • Financial openness • Global wealth distribution • Fiscal policy • Form of capitalism | ENVIRONMENTAL <ul style="list-style-type: none"> • Climate change policy • Water availability • Effects of climate change / environmental degradation • Price of CO₂ • Price of water • Global industry adaptation of environmental standards • Ecosystem valuation • Biodiversity regulation | GEOPOLITICAL <ul style="list-style-type: none"> • Geopolitical instability • Level of state intervention in business • Degree of trade liberalisation • Resource nationalism • Resource management • Protectionism • Energy security policy • Corruption • Global governance • Quality of public governance • Geopolitical cover skills |
|---|--|--|---|---|



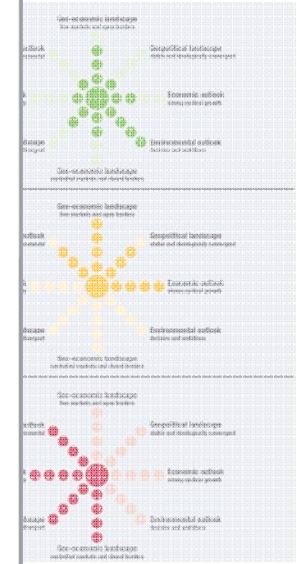
Asia dominates	Regional spread	Stable	Unstable
Open cross border flow	Closed crossborder flow	Ideological convergence	Ideological divergence
Free market	Controlled market	Extreme volatility	Cyclical volatility
Decisive response	Passive response	GDP growth	GDP decline
Incremental response	Radical response		



Driving forces shaping the future of the mining & metals sector



SOCIAL	TECHNOLOGICAL	ECONOMIC	ENVIRONMENTAL	(GEO)POLITICAL
<ul style="list-style-type: none"> • CSR expectations • Income inequality • Population growth • Consumer behaviour • Indigenous expectations • Skills gap • Health and safety expectations 	<ul style="list-style-type: none"> • Automation of operations • Substitutions for minerals • Energy innovation • Resource scarcity • Low carbon technologies • New uses for materials 	<ul style="list-style-type: none"> • Global economic growth • Emerging middle classes • Developmental states of economies • Access to capital • Financial openness • Global wealth distribution • Fiscal policy • Form of capitalism 	<ul style="list-style-type: none"> • Climate change policy • Water availability • Effects of climate change / environmental degradation • Price of CO₂ • Price of water • Global industry adaptation of environmental standards • Ecosystem valuation • Biodiversity regulation 	<ul style="list-style-type: none"> • Geopolitical instability • Level of state intervention in business • Degree of trade liberalisation • Resource nationalism • Resource management • Protectionism • Energy security policy • Corruption • Global governance • Quality of public governance • Geopolitical power shifts



Determining their impact and uncertainty



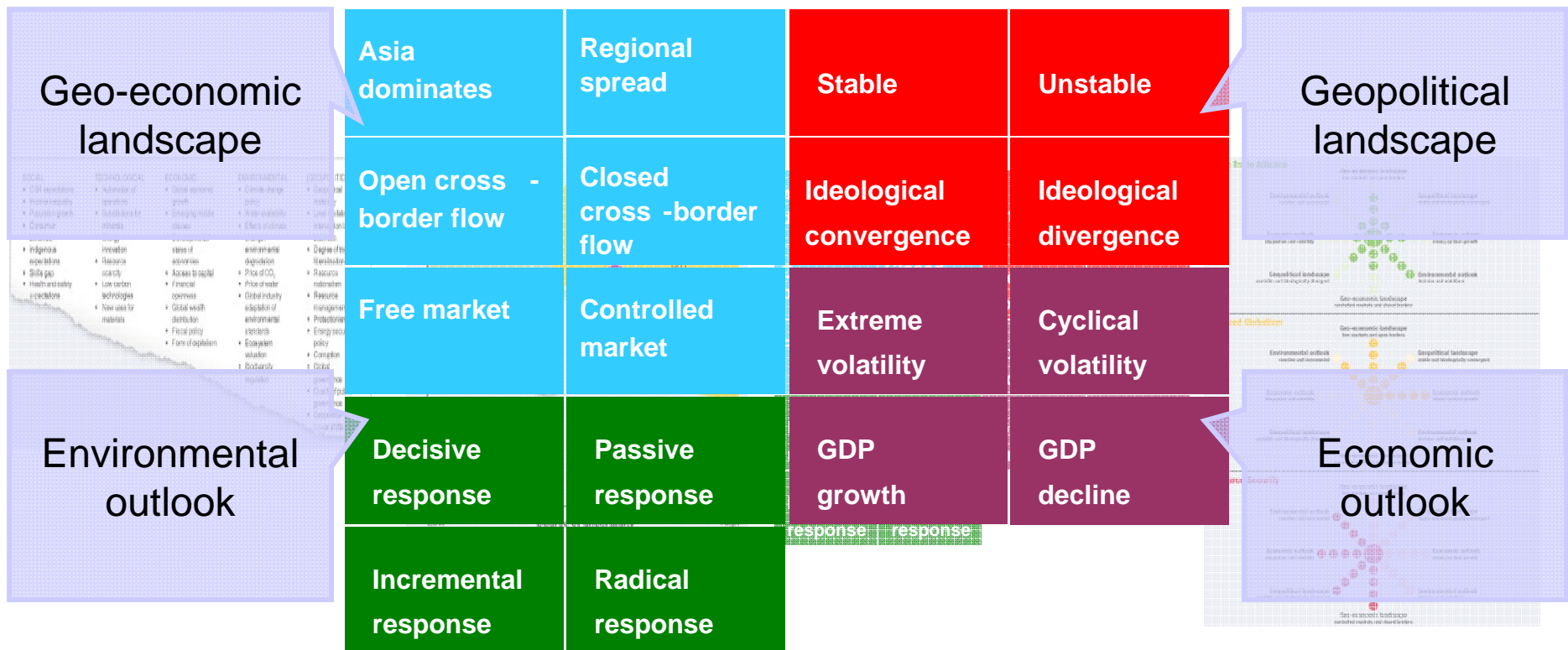
SOCIAL	TECHNOLOGICAL	ECONOMIC	ENVIRONMENTAL	GEOPOLITICAL
<ul style="list-style-type: none"> • Civil liberties • Income inequality • Population growth • Consumer behavior • Inequality • Skills gap • Health and safety • Education 	<ul style="list-style-type: none"> • Automation of operations • Substitution for humans • Energy innovation • Resource scarcity • Low carbon technologies • New uses for materials 	<ul style="list-style-type: none"> • Global economic growth • Emerging middle class • Developmental status of economies • Access to capital • Financial openness • Global wealth distribution • Fiscal policy • Form of capitalism 	<ul style="list-style-type: none"> • Climate change policy • Water availability • Effects of climate change • Environmental degradation • Price of CO₂ • Price of water • Global industry • Adoption of environmental standards • Escapism • Biodiversity regulation 	<ul style="list-style-type: none"> • Geopolitical instability • Level of risk intervention in business • Degree of trade liberalization • Resource nationalism • Resource management • Protectionism • Energy security • Competition • Global governance • Quality of public governance • Geopolitical power shifts



Unstable
Ideological divergence
Cyclical volatility
GDP decline



Exploring plausible, challenging outcomes



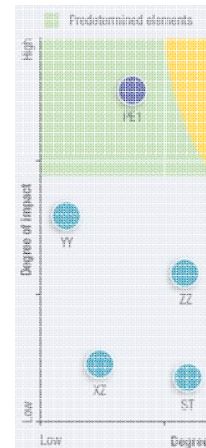
Selecting and developing 3 relevant scenarios



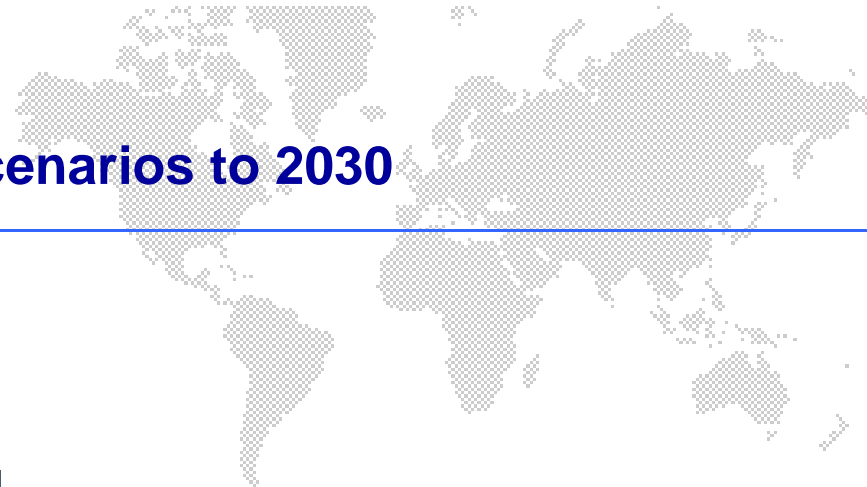
Unstable
Ideological divergence
Cyclical volatility
GDP decline



SOCIAL	TECHNOLOGICAL	ECOLOGICAL	ENVIRONMENTAL	GEOPOLITICAL
<ul style="list-style-type: none"> • Civil expectations • Income inequality • Population growth • Consumer behavior • Indigenous perspectives • Skills gap • Health and safety considerations 	<ul style="list-style-type: none"> • Automation of operations • Substitutions for resources • Energy innovation • Resource scarcity • Low carbon technologies • New uses for materials 	<ul style="list-style-type: none"> • Global economic growth • Emerging middle class • Developmental stages of nations • Access to capital • Financial openness • Global wealth distribution • Fiscal policy • Form of capitalism 	<ul style="list-style-type: none"> • Climate change policy • Water availability • Effects of climate change • Environmental degradation • Price of CO₂ • Price of water • Global industry adaptation of environmental standards • Ecovillage valuation • Sustainability regulation 	<ul style="list-style-type: none"> • Geopolitical instability • Level of non-interventionist business • Degree of trade liberalization • Resource nationalism • Resource management • Protectionism • Energy security • Competition • Global governance • Quality of public governance • Geopolitical power shifts



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Green Trade Alliance



Rebased Globalism



Resource Security

Potential activities for phase 2

Strategic Options

Continue multistakeholder discussions and build trust by providing a platform for effective discussion on strategic options to capitalize on opportunities and overcome challenges

Individual

Provide an opportunity for our Partners to tailor the scenarios to their context

Country Deep Dive

Better prepare specific countries and its stakeholders for a more sustainable future

For more information, please contact us



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