

Category	Theme	Selection Criteria	Description	Requirement
Environmental	Energy (inputs to the system)	Energy consumption/ generation	Comparison of the net energy consumption of the options.	☒
	Input materials (inputs to the system - consumables)	Recycled input materials (consumables)	Percentage of input materials that are recycled	☐
		Quantity of consumables used	Measure of the amount of consumable materials required by each option (Membranes, etc.), i.e. number to be replaced over 10 years	☐
		Volume of chemicals used	Measure of the volume of chemicals required	☐
	Land area requirement (impact of the system)	Site footprint	Measure of the size of the option site footprint	☐
	Ecological Integrity (Impact of the system)	Impacts of spill of waste or input chemicals, or system failure on surrounding environment	Evaluates the likely impact on the receiving environment caused through system failure or spill of waste or input chemicals of the option	☐
	Solid waste (outputs from the system)	Nature/hazard of solid waste	Assesses the quality of the solid waste Waste classification guidelines will be used	☐
		Quantity of solid waste	Measure of the amount of solid output waste by the option.	☐
		Solid output re-use	Measure of the percentage of the solid discharge that will be re-used for other purposes.	☐
	Gaseous emissions (outputs from the system)	Greenhouse gas emissions	Comparison of the estimated quantity of GHG emitted by the various options.	☐
		Air quality	Assesses the impact of gaseous emissions upon air quality in the vicinity of the site.	☐
	Liquid waste - (outputs from the system)	Nature/hazard of liquid waste	Assesses the quality of the liquid waste.	☐
		Quantity of Waste Liquid Produced	Measure of the amount of liquid output generated by the option.	☐
		Liquid output re-use	Measure of the percentage of the liquid discharge that will be re-used for other purposes, thus reducing the amount of virgin materials consumed.	☐
Economic	Economic Performance	CAPEX (total project costs)	Measures the total Capital expenditure for each option	☐
		OPEX (total project costs)	Measures the total Operational expenditure for each option over an agreed upon time period (e.g. cost per annum).	☒
		Capital replacement costs	Replacement costs for consumables, e.g. membranes over a 20 year time period.	☐
		Financial recoveries	Recovery of costs through by-product recovery, water sales, etc.	☐
		Closure costs	Costs associated with closure of water treatment site.	☐
	Contractual	Contractual agreements	The type of contract that the supplier is willing to sign with the operation e.g. operational guarantees, build-own-operate, etc.	☐
		Reliability of Contractor	Assessment of the contractors track record. Takes current projects, contractors experience, and size and stability of the company.	☐
	Construction	Ease of obtaining necessary permits	Assesses the costs associated with obtaining the necessary permits and associated potential delays (to the project and production).	☐
		Interference with activities on site	Assesses the economic cost of disruption of other routine site activities during the implementation of the option. Applicable when construction will take place on an operational site. Major activities result in loss of production time.	☐
	Potential for fines, penalties and surcharges	Potential for fines, penalties and surcharges	Evaluation of the likelihood of potential action occurring / being avoided through implementation of the option or incurred through malfunction / failures. Applicable if the mine already has relevant authorisations / permits for operation.	☐
	Health & Safety	Public health & safety	Potential adverse impacts on public human health and safety arising from the implementation of the option (residents, transients).	☐
		Workers' health & safety	Evaluates the potential impacts of the option for the health and safety of the staff and contractor staff (accidents, time off, illness, etc.) - does not include health risks of hazardous chemicals. Evaluation is to be based upon the track record of the option in similar circumstances.	☒

CONTROL PANEL

Number of Processes

2

For any inquiries please contact Priyal Dama-Fakir:

Please refer to the helpfile for information on this tool

Projection mode (1024x768):

☐ Disabled

Social		Hazardous materials	Assesses the extent of hazardous chemicals used (input materials, not as waste)	☐
	Impacts on local community	Local suppliers and contractors	Assess the relative economic advantages that each option will bring to the country through local sourcing of goods and services through local procurement practices, especially within medium, small and micro-enterprises.	☐
		Local job creation	Assesses the intensity of local job creation	☐
		Employment diversity	Assesses the employment of individuals who are from previously disadvantaged backgrounds.	☐
		Community perception	Assesses the community's known or anticipated perception of the option	☐
		Construction work impacts on the local community	Assesses the potential disruption and corresponding impact on the community during construction of the option. Disruption includes duration, noise, visual, dust, vibration and community inconvenience.	☐
		Operational impacts on the local community	Assesses the potential disruption and corresponding impact on the community during operation of the option.	☐
Technical	Adaptability	Robustness	Assesses the flexibility and adaptability of the option to changing feed quality. This indicator measures the flexibility and adaptability of systems to changing environmental and seasonal effects, in particular shock loadings.	☐
		Upgradability	Assesses the ease at which the option may be upgraded to meet future increased (or decreased) flow rates. Assesses whether units be easily added to increase capacity if the system is modular.	☒
	Complexity	Ease of site establishment	The level of effort required to establish the site for the option - accessibility, terrain, source of fill material, etc.	☐
		Decommissioning Complexity	Assesses the level of efforts required in the decommissioning of the technology (underground infrastructure, electrical network, hazardous material and solid waste, health risks, complexity of demolition works, additional off-site operations, fugitive emissions control, etc.)	☐
		Electrical System Complexity	Assesses the complexity of the electrical system required for powering the option. Takes into consideration high loads against average power consumption, requirements for larger sized equipment, single-phase versus three-phase loads, etc.	☐
		Operation and Maintenance Complexity	Assesses the frequency and complexity of the operation and maintenance (O&M) required for the option. Assessment of O&M complexity and the frequency at which this is required. Availability of required skills and the impact upon operations should repairs require long lead times.	☒
		Design complexity	Assesses the relative level of design complexity associated with each option. More complex designs may lead to unforeseen issues arising in later project stages.	☐
		Construction complexity	Assesses the relative level of construction complexity associated with each option. More complex construction has the potential to lead to delays and problems during operation.	☐
	Uncertainty	Likelihood of Acceptance by Regulator	Assesses the likelihood of acceptance of the proposed option by the regulatory agencies. Assessment to be based upon proven / tested performance in similar environments to meet the discharge regulations / requirements.	☐
		Technical support	Assesses the likelihood of the availability of technical support from the supplier(s) based upon previous experiences and recent interactions.	☐
		Durability	Assesses the durability of the option. Evaluates the long-term durability of the treatment process. Assessment to be based upon proven or tested performance in similar environments.	☐

		Technical Uncertainty / Reliability	Assesses the reliability defined as the level of technological uncertainty surrounding the implementation of the option. Measures the confidence associated with the option through proven previous implementation and measurement. Appropriate measures can be recommended to reduce technical uncertainty such as small-scale trials.	☐
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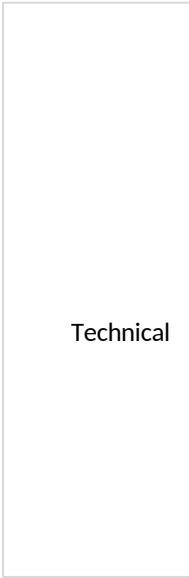
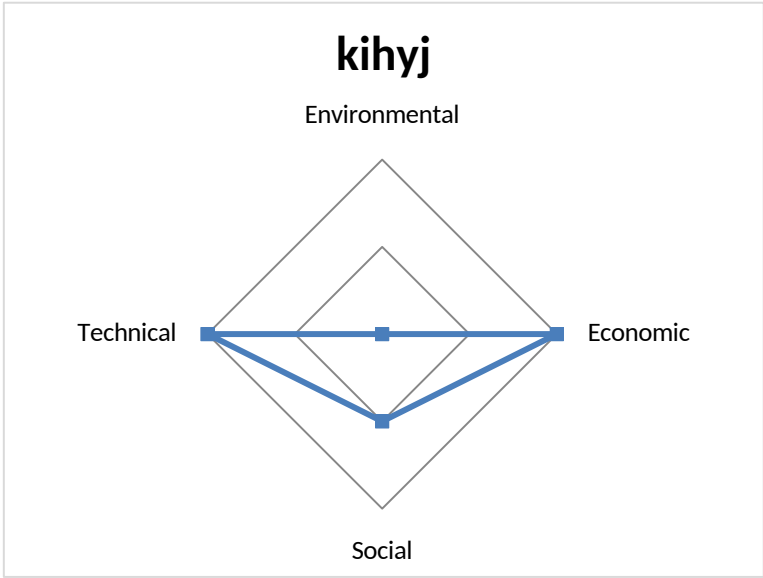
Category	Theme	Selection Criteria
Environmental	Energy (inputs to the system)	Energy consumption/ generation
Economic	Economic Performance	OPEX (total project costs)
Social	Health & Safety	Workers' health & safety
Technical	Adaptability	Upgradability
	Complexity	Operation and Maintenance Complexity

Description	Scoring Description
Comparison of the net energy consumption of the options.	QUANTITATIVE
Measures the total Operational expenditure for each option over an agreed upon time period (e.g. cost per annum).	QUANTITATIVE
Evaluates the potential impacts of the option for the health and safety of the staff and contractor staff (accidents, time off, illness, etc.) - does not include health risks of hazardous chemicals. Evaluation is to be based upon the track record of the option in similar circumstances.	100 - Minimal H&S risk to workers managed through education, awareness, signage, PPE 50 - Moderate H&S risk to workers managed through education, awareness, signage, PPE 0 - Highly complex equipment and process posing significant danger requiring highly trained staff
Assesses the ease at which the option may be upgraded to meet future increased (or decreased) flow rates. Assesses whether units be easily added to increase capacity if the system is modular.	100 - The treatment option is modular and can be easily upgraded 50 - The treatment option is partially modular and less than 30 % of equipment will need to be replaced to meet a 50 % increase in feed flow 0 - The treatment option cannot be upgraded easily and will require more than 30 % of equipment to be replaced to meet a 50 % increase in flow.
Assesses the frequency and complexity of the operation and maintenance (O&M) required for the option. Assessment of O&M complexity and the frequency at which this is required. Availability of required skills and the impact upon operations should repairs require long lead times.	100 - Infrequent and simple O&M, skills available on site 75 - Fairly frequent but simple O&M, skills available on site 50 - Fairly frequent but complex O&M, skills available regionally 25 - Very frequent and complex O&M, skills available in South Africa 0 - Frequent, disruptive and complex O&M with long lead times and no local skills available

		Weight	
tesd	gfdgf	Indicator	Theme

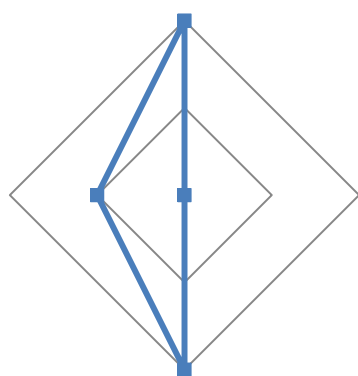
RESULTS

Theme	kihyj	jhgjg
Environmental	0.00%	100.00%
Economic	100.00%	0.00%
Social	50.00%	100.00%
Technical	100.00%	50.00%
Total	50.00%	72.22%



jhgjg

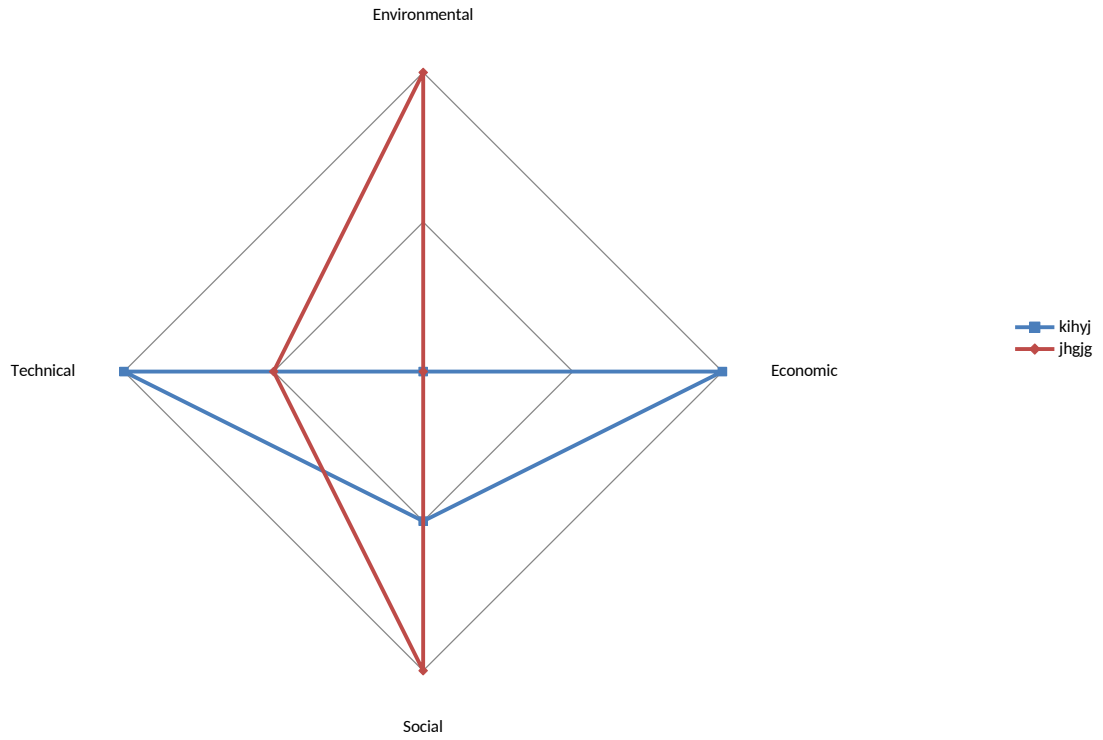
Environmental



Economic

Social

All Options



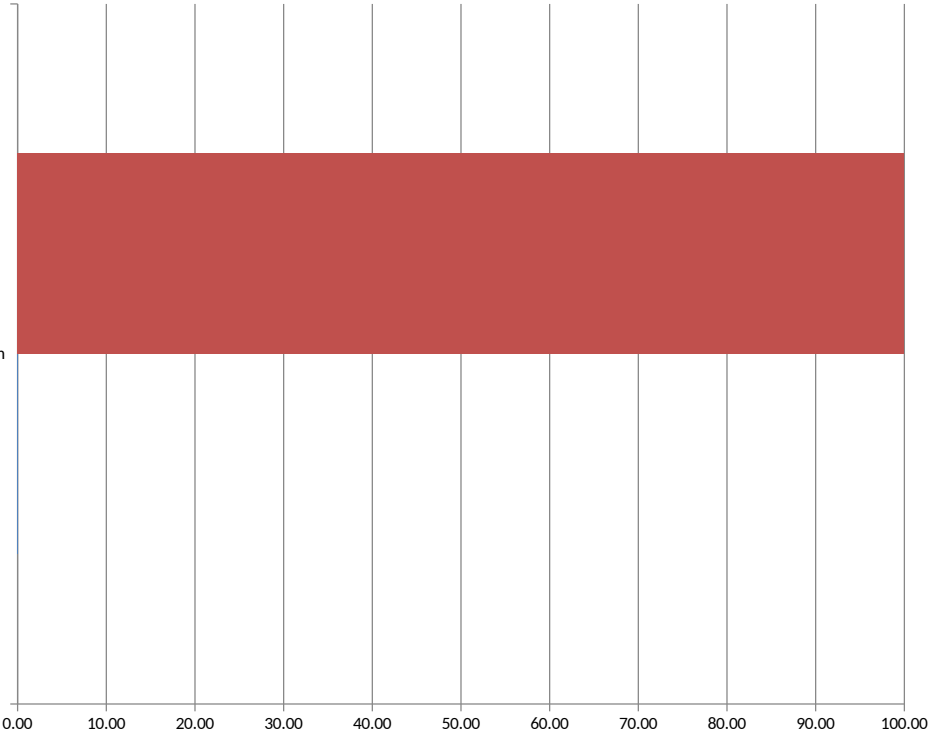
DETAILED RESULTS

	Category	Selection Criteria	kihyj	jhgjg
-	Environmental	Energy consumption/ generation	0.00	100.00
-	Economic	OPEX (total project costs)	100.00	0.00
-	Social	Workers' health & safety	50.00	100.00
-	Technical	Upgradability	100.00	50.00

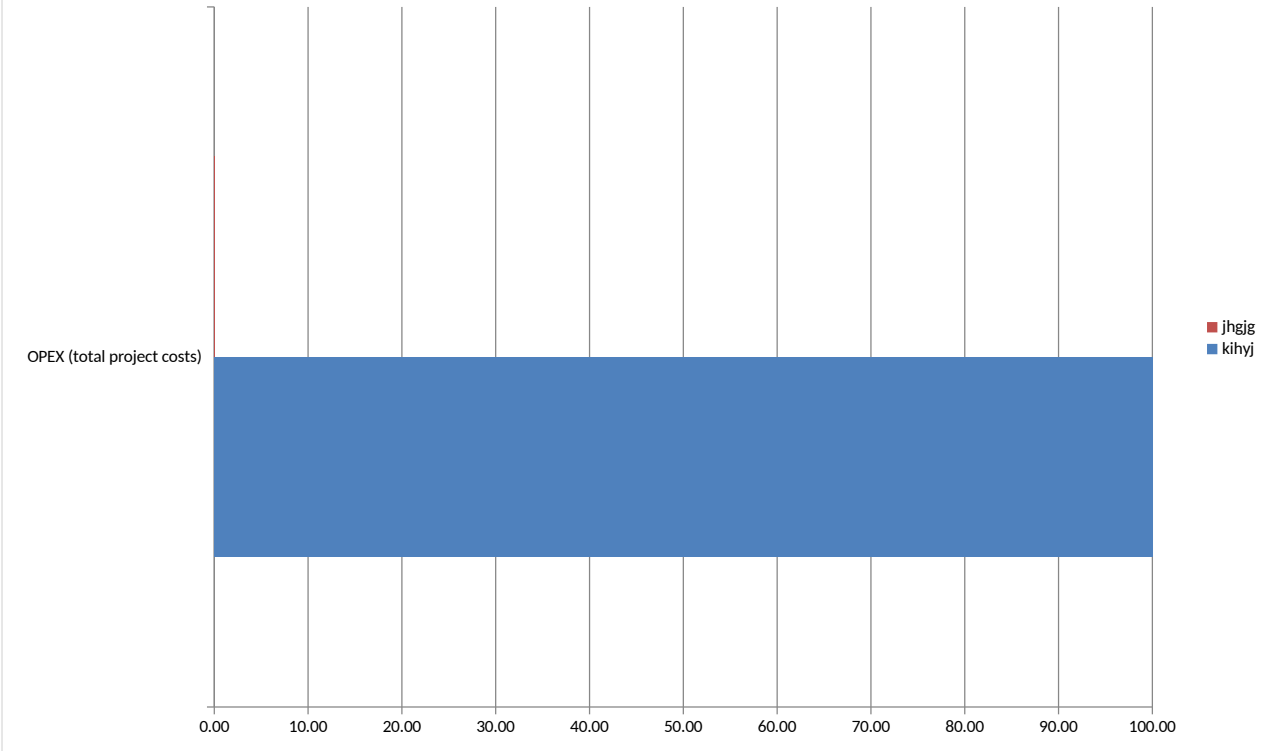
Environmental Results

Energy consumption/ generation

jhgig
kihyj



Economic Results



Social Results

