

Financial Feasibility

A generic feasibility

Marble/Granite

Assumptions Report		
Year in which to start projections	20XX	
Month for start of the projections	XXX	
Currency symbol	PKR	
Variables	Assumptions for First Year Values	Units
World Class Quarry		
Quarry Road	100,000 to 20,000,000	one time
Quarry Bench	100,000 to 500,000	one time
Machinery Transporation ex-mine	500,000 to 1,000,000	one time
Average 1st 6 months Production	4,200	Tons
Marketing Expense	1,000,000 to 50,000,000	PKR
Sales Price	PKR 10000	per Ton
Desired average finished inventory	20	% of sales
Cost of materials/goods	23%	As % sales
Target materials/goods inventory	10	As % of Sales
Average monthly direct costs	2,318,000	PKR
Direct Menpower levels	20	Personal
Wage Rate	15,000	PKR



Guidance

Any dimensional stone quarry can be classified as a world class quarry provided it is extracting, without fail almost 5000 tons every month and sells almost all of its production without fail.

Depends upon location and geological structure. Some of the quarries have almost no need for quarry roads and some require extensive road infrastructure.

Depends upon the desired material position. For wiresaw to work wiresaw platform needs flat ground for it to work.

Depends upon location of the mine. More remote areas means more transportation costs

with proposed set of machinery upto 1000 tons per month production can be achieved, however, during initial 6 months lower production is assumed as is the norm with start up mechanised stone quarries.

Marketing of stone would depend upon the type of quarry. A staple coloured, unique stone (white and light beige cream coloured stone) needs lesser marketing push and hence lesser in marketing spend. Conversely a generic stone needs a lot of marketing push to establish a regular demand in the market.

Selling price of our Pakistani good quality marble/granite/onyx can be as high as US\$1000/Ton and our average stone can easily fetch around US\$100/Ton. We have forecasted our feasibility on the lowest possible price.

It's a conservative estimate,

The initial manning levels are good for up to 8000 Ton annual extraction
As per industrial regulations every body will receive higher compensation than national wage rate

Project Economics	
Quarrying	
Infrastructure/Over Burden Removal/Quarry Camp/Storage Area/Water Works/One time transportation charges	2,400,000
Marketing Expense (The expenses can be a range of as low as 0 to as high as forecasted)	1,000,000
Machinery & Equipment (Purchased)	25,055,000
Machinery & Equipment (Rented)	
Machinery & Equipment (Total)	25,055,000
Total Capital Cost	28,455,000
Fuel & Lubricants	500,000
Spare & Consumables	500,000
Cash	1,000,000
Total Working Capital	2,000,000
Total Investment	30,455,000

Project Returns	
Net Present Value (NPV PKR @ 20%)	406,901,224
Internal Rate of Return (IRR)	243%
Modified Internal Rate of Return (MIRR)	98%
Payback Period	1.8 years

Manning

Type	Job	Base Cost/Month (PKR)	#	Yearly Cost (PKR)
Managerial	Operations Manager	35,000	1	420,000
	Quarry Manager	25,000	1	300,000
	Quarry Master	100,000	-	-
	Accountant	50,000	1	600,000
			3	1,320,000
Skilled Labour	Excavator Operator	30,000	2	720,000
	Loader Operator	30,000	-	-
	Truck driver	18,000	1	216,000
	Wire Saw Operator	25,000	2	600,000
	DTH Operator	25,000	-	-
	Truck driver	15,000	-	-
	Pick-Up driver	15,000	-	-
	Mechanics	25,000	-	-
	Electrician	20,000	-	-
			5	1,536,000
General Worker/Helpers	Operators Assistants	15,000	3	540,000
	Gaurds	15,000	2	360,000
	Cooks	15,000	2	360,000
	General Workers	15,000	5	900,000
			12	2,160,000
Total Manning			20	5,016,000

* Quarry Master Cost has been capitalised as quarry design cost in balance sheet, and hence its not clubbed with manning costs

Machinery & Equipment

Quarrying		Equipment (1st Instalment)	Specifications	Approximate Cost	Quantity	Total Cost (For Marble Mine)	Total Cost (For Granite Mine)
1	Project Machinery & equipment	Excavator with jack hammer	35 Ton (Used)	12,000,000	1	12,000,000	12,000,000
2		Wheel Loader*	35 Ton (Used)	12,000,000	-	-	-
3		Generator	250KVA (Used)	2,500,000	1	2,500,000	2,500,000
4		Compressor	800CFM (Airman, Atlas Copco)	2,500,000	-	-	2,500,000
5		Compressor	265 CFM (Used Airman, Atlas Copco)	1,500,000	1	1,500,000	1,500,000
6		Compressor	90 CFM (Chinese Double Tank)	150,000	1	150,000	150,000
7		Wire Saw†	75 HP Variable Speed (Denafonoon Iran)	1,000,000	2	2,000,000	2,000,000
8		Wire Saw	25 HP Stationery Speed (Denafonoon Iran)	550,000	2	1,100,000	1,100,000
9		Diamond Wire	200 Meter (Skystone, Diamont Boart)	5,100	200	1,020,000	1,020,000
10		Down The Hole Hammer (DTH)	Granite (Denafonoon Iran)	450,000	2	900,000	900,000
11		Line Drills	Vertical & Horizontal (Used)	2,000,000	1	-	2,000,000
12		Jacks	Hydraulic 160 tons	30,000	2	60,000	60,000
13		Push bag Splitter	Chinese	250,000	2	500,000	500,000
14		Block Handling Equipment	Local Fabricated, 30 Ton Capacity	500,000	1	500,000	500,000
15		Water Tank/Fuel Tank	5000 Gallons	500,000	2	1,000,000	1,000,000
16		Pickup Truck 4x4	used Toyota Hilux	2,500,000	-	-	-
17		Wire rebuilding equipment~	Hydraulic bench, Crimping Tools	50,000	1	50,000	50,000
18		Spares & Consumables~	Miscellaneous	500,000	1	500,000	500,000
19		Small truck 2 tons	used mazda titan	900,000	-	-	-
20		Drills with rods	misc	35,000	5	175,000	175,000
21		Small generator	2 kva	100,000	1	100,000	100,000
22		Machine Shop Tools	misc tools, lathe machine, welding, etc	1,000,000	1	1,000,000	1,000,000
Total						25,055,000	29,555,000

Non Equipment Assets		
Capital Requirement for non-equipment based assets	Probable Range	Average
Civil Works (Quarry Camp, Storage Area)	50,000 to 1,000,000	500,000
Quarry Bench Development	200,000 to 5,000,000	500,000
Water Works	400,000	400,000
Machine Transportation (one time)	500,000 to 2,000,000	1,000,000
Fuel Cost (Initial purchase)	500,000 to 1,000,000	500,000
Total		2,900,000

Most mechanised mines need one later after benches are developed.
 * some mines may need it right away for
 † the natural wiresaw is very sturdy and cheap in cost. A marble mine wiresaw should be ideally around 50HP but if use 75HP with inverter gives us

Projected Balance Sheet

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Assets						
<i>Current Assets</i>						
Cash & Bank	1,000,000	6,593,125	18,116,090	32,595,179	46,902,274	60,973,857
A/R	15 Days Sales Outstanding (DSO)	4,000,000	6,666,667	8,333,333	8,333,333	8,333,333
Finished Goods Inventory	90 DSO at cost	-	6,954,000	10,504,400	12,923,590	13,075,324
Equipment, Spare & Consumables Inventory	1,000,000	1,100,000	1,210,000	1,331,000	1,464,100	1,610,510
Total Current Assets	2,000,000	18,647,125	36,497,157	55,183,102	69,775,032	84,159,932
<i>Fixed Assets</i>						
Quarry Bench Development (Quarry Master Cost) ¹	-	-	-	(12,000)		
Civil Works Fittings & Fixtures	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000
Machinery Equipment	5%/Annum SLD	25,055,000	23,802,250	22,549,500	21,296,750	20,044,000
Total Fixed Assets³	27,455,000	26,202,250	24,949,500	23,684,750	22,444,000	21,191,250
Total Assets	29,455,000	44,849,375	61,446,657	78,867,852	92,219,032	105,351,182
Liabilities & Shareholder's Equity						
<i>Current Liabilities</i>						
Notes Payable						
Current Portion of Long Term Debt		-	-	-	-	-
Total Current Liability	-	-	-	-	-	-
<i>Long Term Debt</i>						
		-	-	-	-	-
<i>Paid-Up Capital</i>						
Company Capital *	29,455,000	38,256,250	43,330,567	46,272,673	45,316,757	44,377,325
Cummulative Retained Earnings ²		6,593,125	18,116,090	32,595,179	46,902,274	60,973,857
Total Owners Equity	29,455,000	44,849,375	61,446,657	78,867,852	92,219,031	105,351,182
Total Liabilities & Shareholder's Equity	29,455,000	44,849,375	61,446,657	78,867,852	92,219,031	105,351,182

* Company Capital is used as a balancing entry

1. The benefits of Quarry Master Expenditure will accrue to the business for a very long time in form of increased production at lower cost & wastage rate

2. A 10% of net profit is retained for management of smooth operations and CSR activities

3. Total Fixed Assets does not include value of the mine, due to lack of credible/mutually agreeable valuation tools.

Projected Income Statement

Unit = PKR			Year 1	Year 2	Year 3	Year 4	Year 5
Total Production Tons (A,B,C Category Blocks)			12,000	20,000	25,000	25,000	25,000
Gross Sales Ex-Quarry (80% of Total Production * 10,000 PKR) ¹	80%	10,000	96,000,000	160,000,000	200,000,000	200,000,000	200,000,000
Net Sales			96,000,000	160,000,000	200,000,000	200,000,000	200,000,000
COGS		Base Costs ²					
Royalties		500	4,800,000	8,000,000	10,000,000	10,000,000	10,000,000
Labour ³			5,016,000	5,517,600	6,069,360	6,676,296	7,343,926
Extraction Costs ⁴		1,500	18,000,000	28,500,000	35,625,000	35,625,000	35,625,000
Ex-Mine Costs			27,816,000	42,017,600	51,694,360	52,301,296	52,968,926
Total Per Ton Cost			2,318	2,101	2,068	2,092	2,119
Gross Profit			68,184,000	117,982,400	148,305,640	147,698,704	147,031,074
Sales General & Administration Expense							
Marketing Expense			1,000,000	1,500,000	2,250,000	3,375,000	5,062,500
Amortization Cost (Quarry Master)			-	-	12,000		
Depreciation Expense	5%		1,252,750	1,252,750	1,252,750	1,252,750	1,252,750
Total SG&A			2,252,750	2,752,750	3,514,750	4,627,750	6,315,250
Profit Before Tax			65,931,250	115,229,650	144,790,890	143,070,954	140,715,824

1. Generally a mine produces various qualities and all produce is not sellable. We have assumed only 80% as sellable and in that 80% there are A,B & C categories

2. The base costs are as per average costs, the costs also vary from as high/low as 100% of the forecasted value.

3. Per Ton labour charge is exhibiting an increasing trend not assuming any learning curve and productivity increment

4. Extraction costs are projected to decline incrementally as the bench develops extraction per incremental ton is forecasted to be lesser even countering the Inflation.

5. To be established by sub-contractor a figure is assumed though it will depend upon sub-contractor own performance standards

Projected Cash Flow Statement

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Terminal Value*
<i>Operating Profit</i>							
Net Profit	-	65,931,250	115,229,650	144,790,890	143,070,954	140,715,824	
Add: Depreciation		1,252,750	1,252,750	1,252,750	1,252,750	1,252,750	
Amortization							
Account Receivable		(4,000,000)	(2,666,667)	(1,666,667)			
Finished Goods Inventory		(6,954,000)	(3,550,400)	(3,550,400)	(3,550,400)	(3,550,400)	
Equipment Inventory	(2,000,000)	(1,100,000)	(1,210,000)	(1,331,000)	(1,464,100)	(1,610,510)	
Pre-Ops Cost							
Cash Generated by Ops	(2,000,000)	55,130,000	109,055,333	139,495,573	139,309,204	136,807,664	
<i>Financing Activities</i>							
Change in LTD	-	-	-	-	-	-	
Share issue							
Cash Provided by/used for financing	-	-	-	-	-	-	
<i>Investing Activities</i>							
Capital Expenditure	(28,455,000)						
Cash provided by/used for investment	(28,455,000)						
Net Cash	(30,455,000)	55,130,000	109,055,333	139,495,573	139,309,204	136,807,664	Avg Projected Cash
							579,797,775

NPV @ 20% (PKR)	406,901,224
IRR	243%
MIRR	98%
Payback	1.8 years

* Terminal value is a conservative estimate of the expected Cash flows the business will generate for the coming years. The value is achieved through discounting the 5 Year's average projected cash flows of the projected period at 10% inflation rate (Terminal Value=Average (Cash Generated by Operations) *10 Years, Discounted Terminal Value=Terminal Value/1.1^10
 © Free Cash flows= Net Income+ Depreciation+ Amortization

Major Ratios

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Liquidity Ratios						
Current Ratio						
Quick Ratio						
Asset Management Ratios						
Inventory Turnover		11.92	13.66	14.03	13.76	13.47
Total Asset Turnover		2.14	2.60	2.54	2.17	1.90
Fixed Asset Turnover		3.66	6.41	8.44	8.91	9.44
Debt Management Ratios						
Debt Ratio						
Times Intrest Earned						
Profitability Ratios						
Profit Margin		69%	72%	72%	72%	70%
Basic Earning Power		147%	188%	184%	155%	134%
ROA		147%	188%	184%	155%	134%
ROE (Total)		172%	266%	313%	316%	317%
Cash Flow Return on Investment - CFROI		123%	177%	177%	151%	130%

Marketing Expense						
	City	Type	Quantity (Ton/Sqm)	Cost/Ton	TotalCost	
Marketing Stock	STOCK					
	Ex-Xiamen	Block	100 Ton	15,000	1,500,000	
China Block:	Ex-Shenzen	Block	100 Ton	17,000	1,700,000	
	Ex-Jeddah	Block/Slab	50 Ton/ 400 Sqm	20,000	1,120,000	
	Ex-Carrara	Block	50 Ton	25,000	1,250,000	
	Ex-Verona	Block	50 Ton	30,000	1,500,000	
	Ex-Rio	Block	100 Ton	40,000	4,000,000	
	Ex-Mundra	Block	100 Ton	15,000	1,500,000	
	Stock	Ex-Los Angeles	Slab/Cut to Size	400 Sqm	3,000	1,200,000
		Ex- New York	Slab/Cut to Size	400 Sqm	3,000	1,200,000
	Exhibitions	Verona Fair Italy				2,000,000
		Coverings USA				2,000,000
Big 5				1,000,000		
Izmir Fair Turkey				1,500,000		
Xiamen Show China				1,000,000		
Promotional Su	Stone Designers In China				2,500,000	
	Stone Designers In Italy				3,000,000	
	Stone Designers in USA				4,000,000	
	Stone Designers in GCC				7,000,000	
Total					38,970,000	

Cost Breakup

Direct Cost+Tranportation+Loading+FOB

Direct Cost	3000
Ex-Factory Tranporta	6000
Loading & FOB Charq	1000
Total FOB Cost	10000