



SILICON TECHNOLOGY

Presentation to Portfolio Committee on Trade and Industry

2 NOVEMBER 2012

Overview



- An overview of Siltech and Ferrosilicon
 - Siltech / The Product / The Process / Customers
- Siltech
 - Cost Drivers
- Impact of Electricity Tariff increases
 - Cost drivers / Operational Cost / Subsidies & Levies
- Events of 2Q12
 - Stopping of Operation
 - Retrenchment of Employees

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Plant aerial view



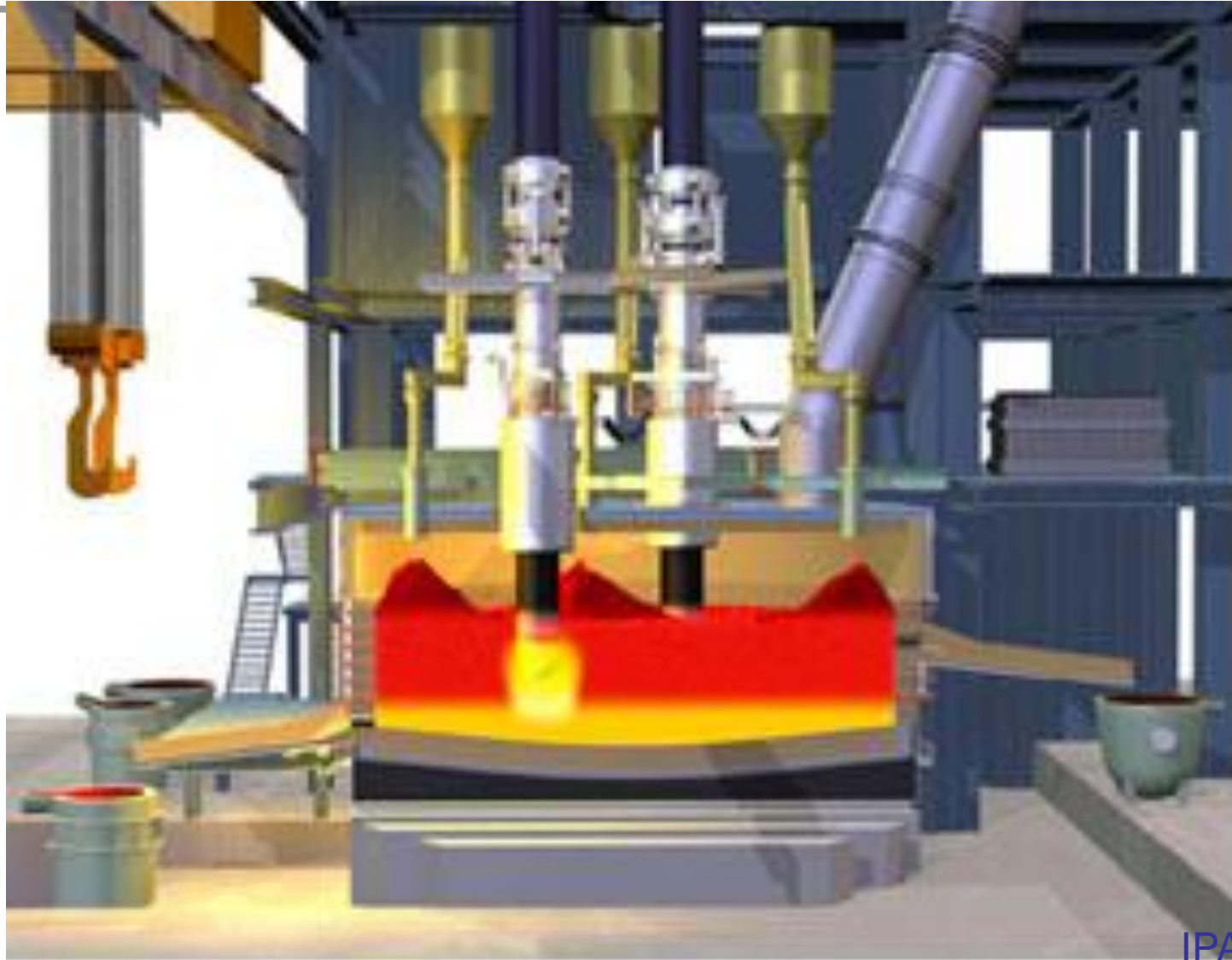
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Siltech Overview



- Operation
 - Complement: 270 employees
 - FeSi - 50 000 tons per annum
 - Submerged arc furnaces:
 - Furnace A: 43 MVA or 27 MW
 - Furnace B: 59 MVA or 31 MW
 - Consumption: 550 GWh pa
 - Baghouses
 - Silica Fume Plant
 - Small brick making plant
 - Small recovery plant.

Submerged Arc Furnace











What is FeSi



- Ferroalloy containing:
 - Silicon Metal : 70 - 75 %
 - Iron (Fe) : 22 - 23 %
 - Al, Ca & other impurities.



What is FeSi



- Applications:
 - Steelmaking (carbon & stainless steels)
 - Alloying element (for conductivity & corrosion resistance)
 - Deoxidizing
 - Source of energy
 - 70 % of global FeSi output is used in steel.
 - Average Si content is 0.3 % for mild steel and 1 % in stainless steel
 - Foundries
 - Certain cast iron (20 % of global production)
 - Welding consumable
 - Coating on welding rods
 - Production of other ferroalloys
 - Magnesium in China (7 % of global production)
 - Low carbon FeCr

Simplified process

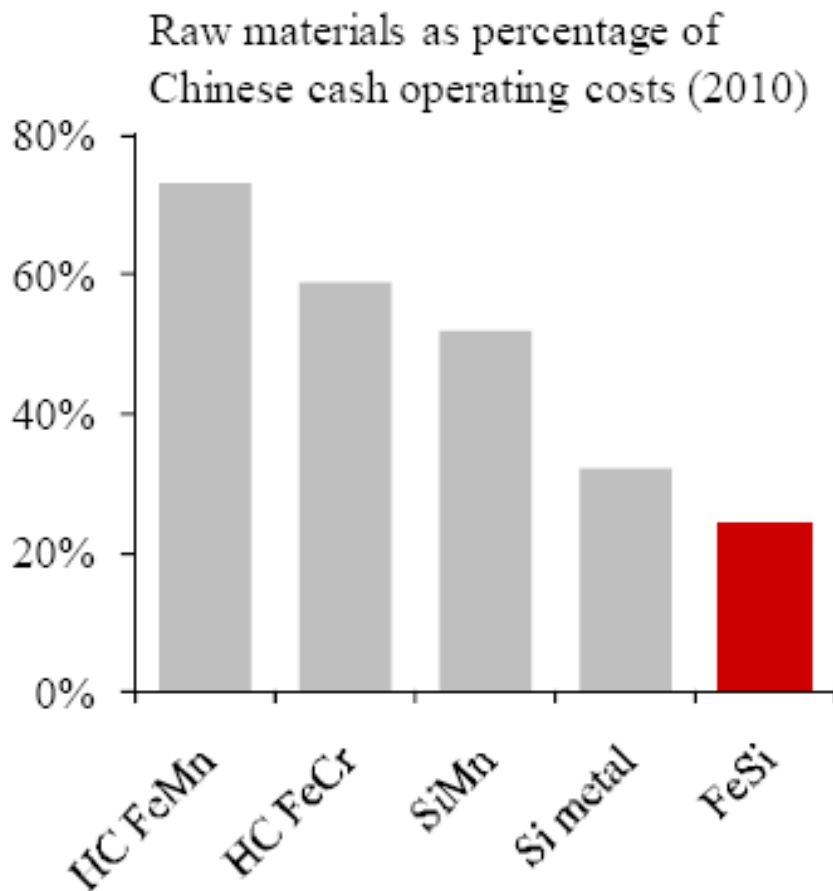
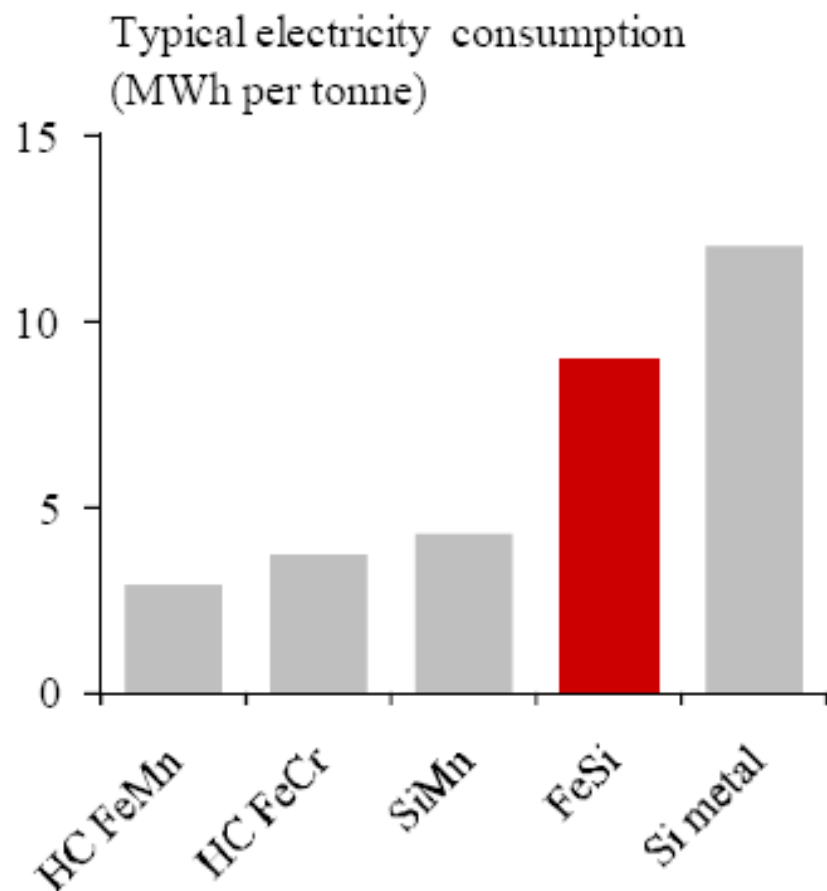


Quartzite + Carbon + Energy → Si-metal + Carbon Monoxide

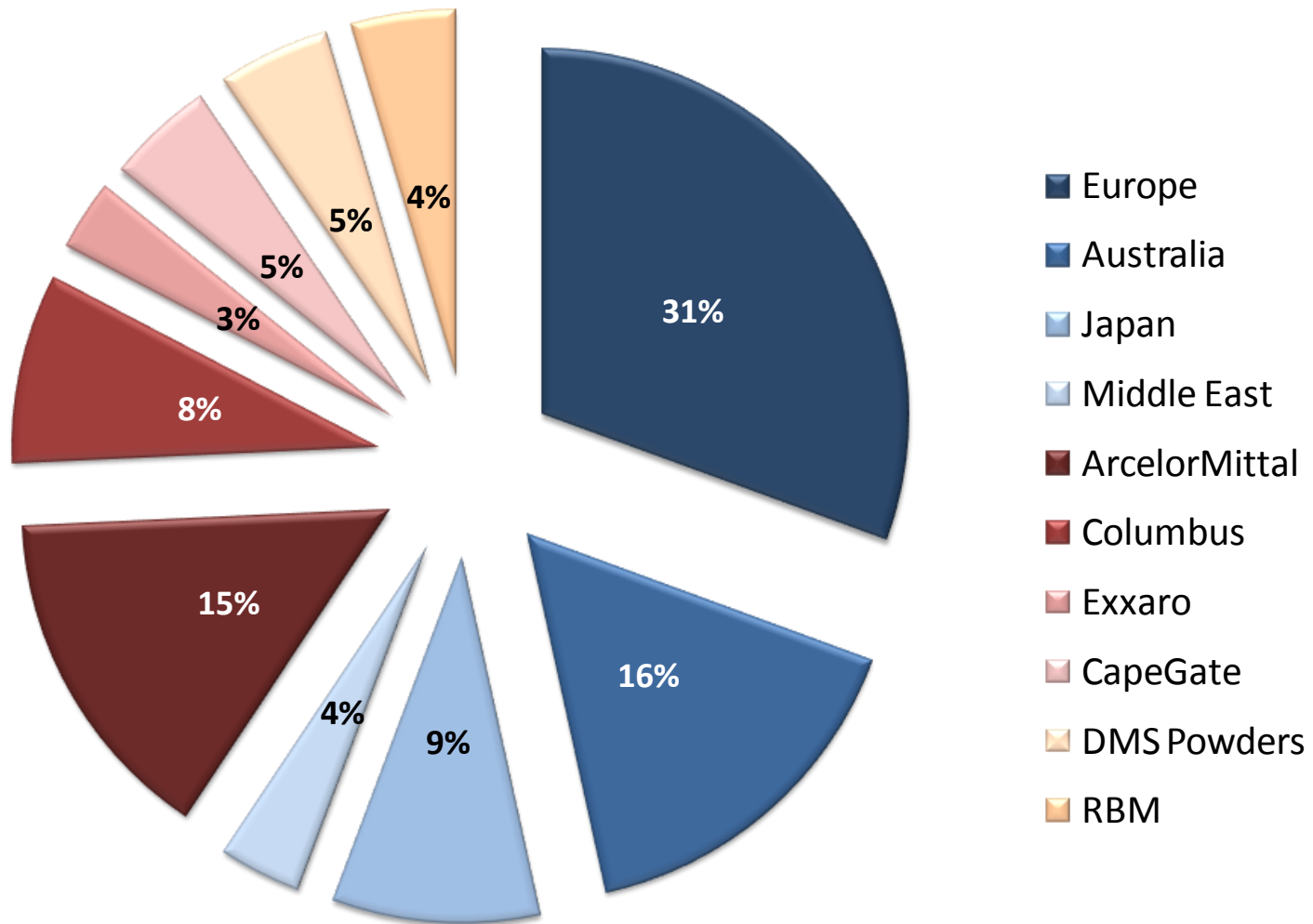
Consumption Rates:

- Quartzite:
 - 2 tons of Quartz / ton of FeSi
- Carbon:
 - 1000 - 1100 kg Coal / ton of FeSi
 - 350 - 380 kg Char / ton of FeSi
 - 350 - 400 kg Charcoal / ton of FeSi
 - 300 kg Wood / ton of FeSi
- Millscale
 - 350 kg millscale / ton of FeSi
- Energy
 - 9 000kWh / ton of FeSi

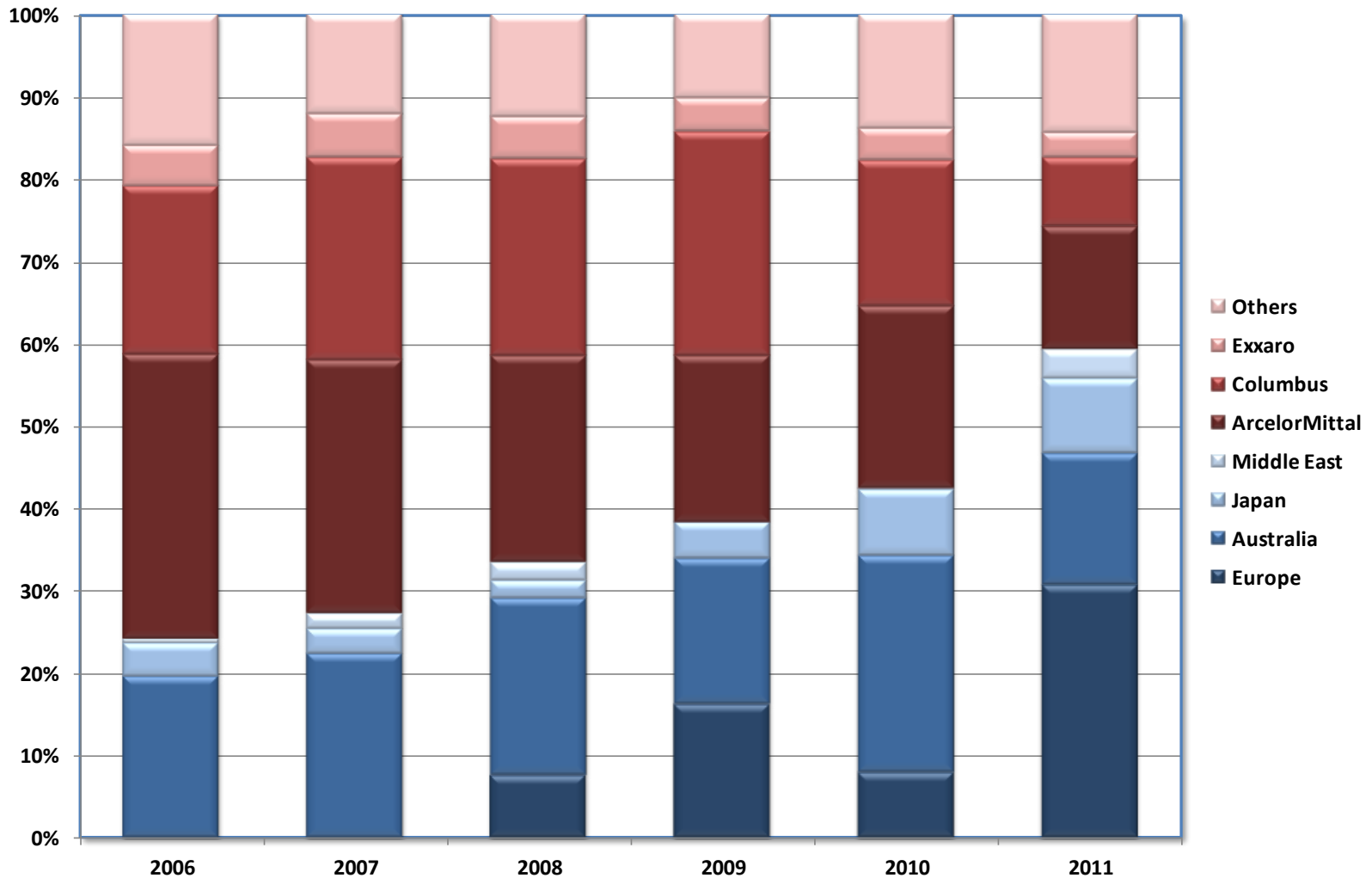
FeSi is driven by electricity rather than raw materials – a fundamental difference from FeMn/SiMn and FeCr



Siltech's Customers



Siltech's Customers



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- Events of 2Q12

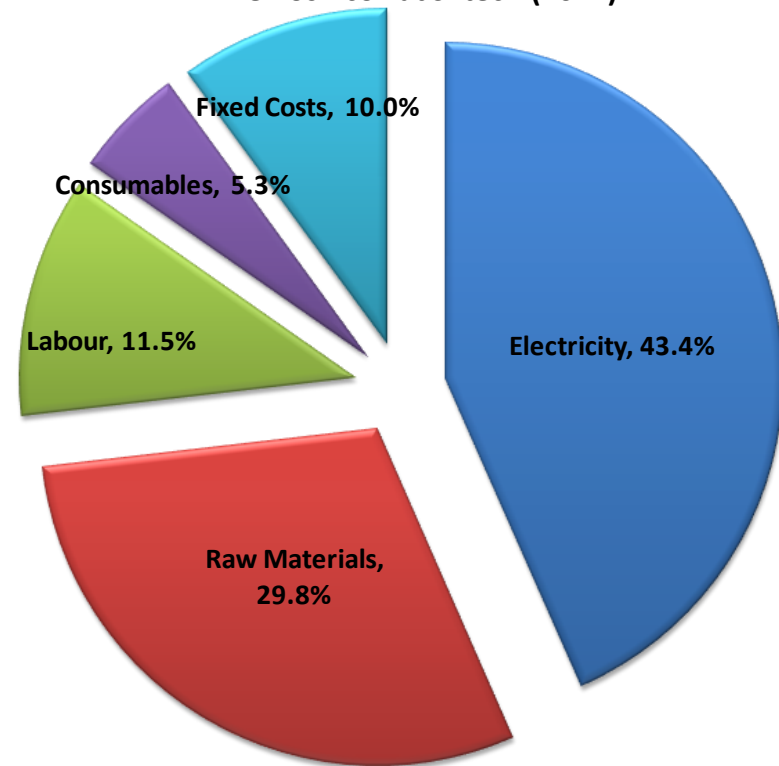
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Cost Drivers



1. Electricity
 - Maximum Demand Charges
 - Active Energy Charges
 - Admin Charges
 - Rural Subsidies & Environmental Levies
2. Raw Material
 - Quartz & Millscale
 - Reductants (Coal, Char, Charcoal)
 - Wood
3. Consumable
 - Electrodes & Casings
 - Lancing & Refractories
4. Labour
5. Fixed Costs
 - Administrative costs
 - Maintenance charges

The Breakdown of the Cost of Production for Ferrosilicon at Siltech (2012)



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Cost Increases



Year-on-Year increases in:	2008	2009	2010	2011	2012
Total production cost	30.7%	12.1%	17.2%	12.6%	10.9%
Total raw materials	49.5%	-8.4%	11.7%	15.7%	7.0%
Quartz	5.5%	9.8%	19.9%	6.7%	12.0%
Reductants	30.5%	38.6%	-4.9%	7.1%	0.0%
Total Electricity	25.9%	31.1%	32.0%	27.2%	16.9%
Total Fixed Costs	16.8%	-6.7%	32.5%	-6.1%	7.3%
Salaries	23.7%	8.5%	19.3%	-8.2%	6.0%
Cumulative production cost increase since 2007	30.7%	46.5%	71.7%	93.4%	114.4%
Cumulative electricity cost increase since 2007	25.9%	65.1%	117.8%	177.2%	224.1%

Electricity Cost Comparison



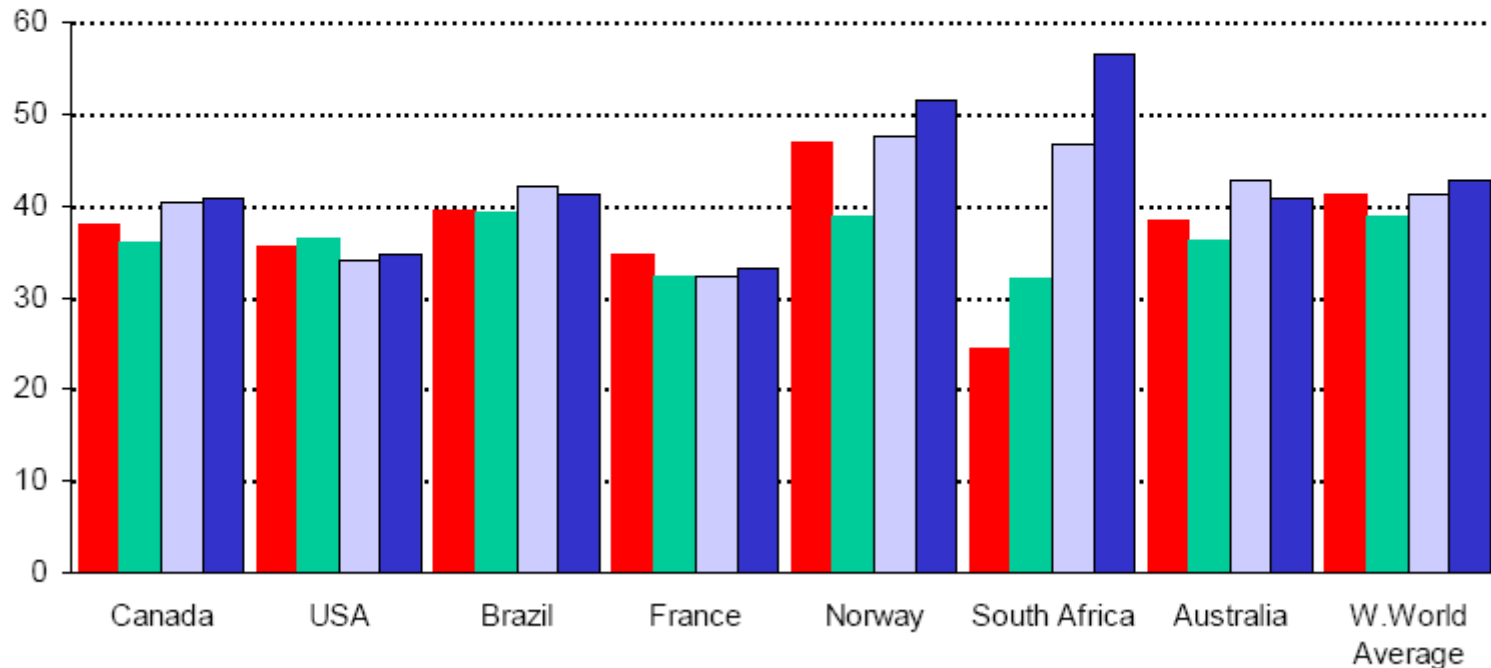
CRU ANALYSIS

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Western world silicon smelters

Average electricity rates by country

US mills/kWh



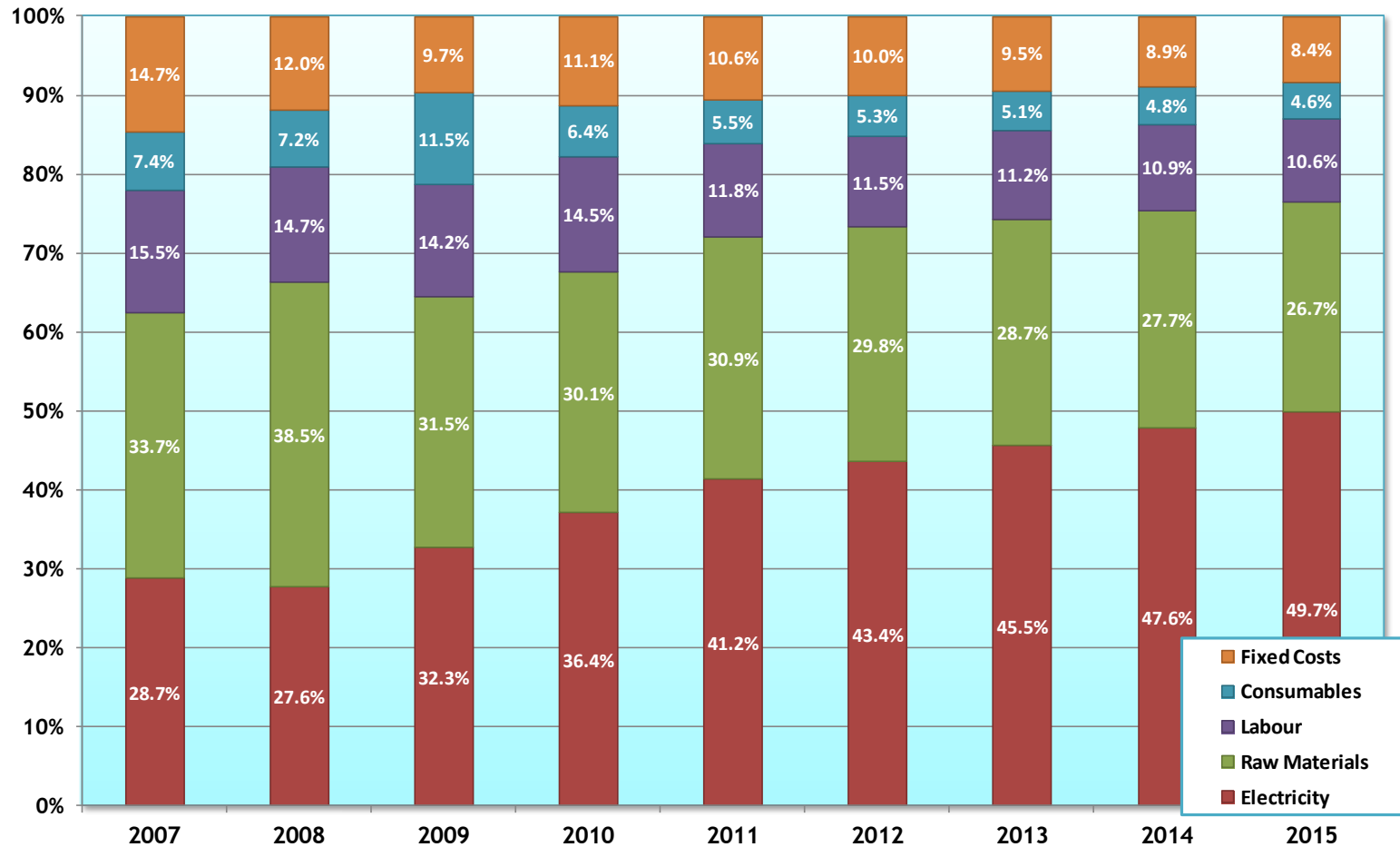
Data: CRU

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Cost Drivers



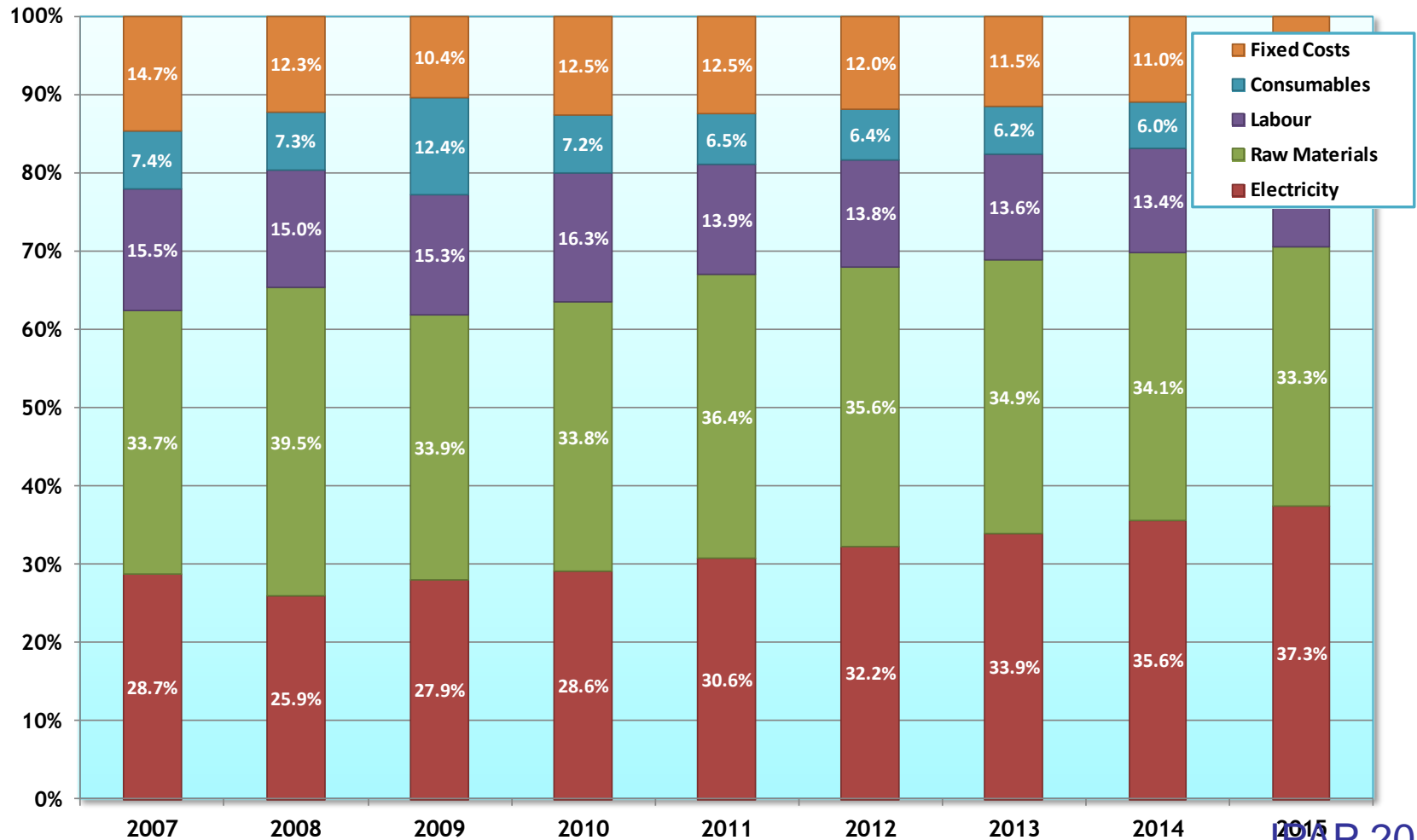
Siltech Production Cost Driver Ranking (Current & Projected)



Cost Drivers



Siltech Production Cost Driver Ranking (Adjusted)



Electricity costs



	Tons Produced		Electricity Cost ZAR			Rural Subsidy &	Net Profit
	Actual	F/cast	Actual	F/cast	R/ton	Env Levy	(After Tax)
						R / year	
2007	46 852		R 77 458 196		R 1 653	R 7 875 581	R 47 892 593
2008	42 883		R 89 126 569		R 2 078	R 8 815 946	R 169 363 400
2009	46 427		R 124 181 067		R 2 675	R 15 839 650	R 37 112 611
2010	46 164		R 160 354 364		R 3 474	R 23 286 202	R 22 166 707
2011 YTD	36 119	44 305	R 169 913 431	R 205 913 431	R 4 648	R 27 679 152	R 8 - 12 m
2012 F'cast		46 025		R 241 648 245	R 5 250	R 32 653 253	R -

Cost / price comparison



Siltech Production Cost vs FeSi Pricing in Europe, China
in ZAR, Jan 2007 to present



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Impact on Labour



Occupational categories	Designated								Total
	Male			Female			Male		
	African	Coloured	Indian	African	Coloured	Indian	White	White	
	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	
	%	%	%	%	%	%	%	%	
Legislators, Senior Officials & Managers	0.0%	0.0%	0.0%	0.0%	0.0%	14.3%	0.0%	85.7%	7
Professionals	36.4%	0.0%	0.0%	0.0%	0.0%	0.0%	9.1%	54.5%	11
Technicians & Associated Professional	26.7%	0.0%	6.7%	0.0%	0.0%	0.0%	0.0%	66.7%	15
Clerks & Administrative Staff	18.2%	6.1%	12.1%	3.0%	6.1%	15.2%	21.2%	18.2%	33
Craft & Related Trades	61.1%	0.0%	5.6%	2.8%	0.0%	0.0%	0.0%	30.6%	36
Plant and Machine Operators & Assemblers	95.7%	1.1%	1.1%	0.0%	0.0%	0.0%	0.0%	2.2%	92
Elementary occupations	92.9%	0.0%	0.0%	7.1%	0.0%	0.0%	0.0%	0.0%	70
Total Permanent	71.6%	1.1%	3.0%	2.7%	0.8%	2.3%	3.0%	15.5%	264

Impact on Economy



Description		Value (2011)
Salaries and wages	R	70 000 000
Newcastle based creditors	R	80 000 000
Total	R	150 000 000

Description		Value (2011)
Revenue from Local Sales	R	265 000 000
Revenue from Export Sales	R	196 000 000
Total	R	461 000 000



THANK YOU