

## World Steel Dynamics September 2007 World Cost Curve Results for Steel Sheet Plants

### Inputs and Assumptions

Company:	<b>Composite</b>	HR Capacity:	3.0	HR Quality Rating	8	Country: All
Plant:	<b>Average BOF</b>	CR Capacity:	1.5	CR Quality Rating	8	Exchange Rate: 1
		Slab Capacity:	3.0	Furnace Type	BOF	Currency US Dollar

### Input Prices

		<b>Share Fixed</b>	<b>Share in \$</b>		<b>Share Fixed</b>	<b>Share in \$</b>
<b>Coking Coal</b>				<b>Sinter</b>		
Contract Coal	98			Sinter feed	74.40	
Freight	30			Conversion cost	<u>14.00</u>	
Delivered	128			Sinter cost	88.40	
Share	50%			Usage	85%	
Spot Coal	98					
Freight	40			<b>Total iron ore</b>	<b>94.64</b>	0.07 0.70
Delivered	138					
Share	50%			<b>Scrap and substitutes</b>		
<b>Total coal</b>	<b>133.00</b>	0.07	0.70	Scrap-#1 HM, del	370	
				Usage	50%	
Purchased Coke	275	0.07	1.00	Scrap-Premium	410	
Freight	30			Usage	50%	
Delivered	305			Total Scrap	390	0.07 0.70
PCI Coal	75			DRI	300	
Freight	13			Freight	30	
Delivered	88			Delivered	330	0.07 1.00
PCI coal	88			Purch pig, FOB	425	
Conversion	12			Ocean freight	25	
PCI cost	100			Freight	5	
				Delivered	455	0.07 1.00
<b>Iron Ore</b>						
Pellets	80.00			Purchased Slab	500	0.07 1.00
Freight	50.00			Freight, ocean	0	
Delivered	130.00			Freight, to plant	10	
Usage	15%			Delivered	510	
Lump	60.00			Purchased HRB	570	0.07 1.00
Freight	50.00			Freight, to plant	15	
Delivered	110.00			Delivered	585	
Usage	0%					
Fines-local conc	40.00			<b>Wage</b>	16.00	1.00 0.00
Freight	8.00					
Delivered	48.00			<b>Electricity</b>	0.050	0.07 0.00
Share	40%					
Fines-imported	52.00			<b>Natural Gas</b>	4.00	0.07 0.00
Freight	40.00					
Delivered	92.00			<b>Other Costs</b>		0.07 0.10
Share	60%			<b>Overhead</b>		0.60 0.10
Average fines	74.4			<b>Energy/scrap credit</b>		0.50 1.00

## World Steel Dynamics 2007 World Cost Curve for Steel Sheet Plants

### Breakdown of Costs by Process in US Dollars per Tonne

Company: **Composite**      SOR:      90%  
 Plant: **Average BOF**

			SOR		SOR
<b>Coke Cost</b>					
Coal cost/t	133.00				
Usage	1.43	190.19			
Wage	16				
MHPT	0.9	14.40			
Electricity	40.00	2.00			
Natural Gas	5.0	20.00			
Other costs		17.00			
By-products Credit	-10	<u>(34.00)</u>			
Total process cost		209.59			
Lease Fee		0.00			
JV Coke		209.59			
<b>Pig Iron Cost</b>					
Own coke	209.59				
Share	85%				
JV Coke	209.59				
Share	0%				
Purchased coke	305				
Share	15%				
Coke Cost	223.90				
Usage	0.390	87.32			
PCI Cost	100.00				
Usage	0.100	10.00			
DRI/Scrap	410				
Usage	0	0.00			
Iron Ore	94.64				
Usage	1.6	151.42			
Wage	16				
MHPT	0.7	11.20			
Injected fuels	4.00				
Usage	0.7	2.80			
Misc fuels	4.00				
Usage	0.70	2.80			
Electricity	30.00	1.50			
Other costs		17.00			
Gas credit	-4.00	<u>(14.40)</u>			
Total process cost		269.65			
<b>Liquid Steel Cost</b>					
Own Pig Iron	269.65				
Usage	0.880	237.29			
Purchased Pig/DRI	330				
Usage	0	0.00			
Scrap	390				
Usage	0.220	85.80			
Wage	16				
MHPT	0.63	10.08			
Electricity	0.05				
Usage	30	1.50			
Natural Gas	0.2	0.80			
Fluxes, FA, Al		28.00			
Other Costs		<u>25.00</u>			
Total process cost		388.47			
<b>Slab Cost</b>					
Liquid Steel	388.47				
Usage	1.035	402.06			
Scrap credit	410				
Usage	-0.03	-12.30			
Wage	16				
MHPT	0.50	8.00			
Electricity	25.00	1.25			
Natural Gas	0.20	0.80			
Other Costs		<u>16.00</u>			
Total process cost		415.81			
<b>HR Band Cost</b>					
Own Slab Cost	415.81				
Share	0.93				
Purchased Slab	510.00				
Share	0.07				
Average Slab Cost	419.86				
Usage	1.04	436.65			
Scrap credit	410				
Usage	-0.035	-14.35			
Wage	16				
MHPT	0.6	9.60			
Electricity	110	5.50			
Natural Gas	1.7	6.80			
Other Costs		<u>13.00</u>			
Total process cost		457.20			
<b>HR Coil (P&amp;O) Cost</b>					
HRB	457.20				
Usage	1.045	477.78			
Scrap credit	410				
Usage	-0.035	-14.35			
Wage	16				
MHPT	0.6	9.60			
Electricity	25	1.25			
Natural Gas	0.5	2.00			
Other Costs		<u>10.00</u>			
Total process cost		486.28			
<b>Cold Rolled Coil Cost (Anneal, temper, finish)</b>					
Own HR Coil	486.28				
Share	100%				
Purchased HRC	500.00				
Share	0%				
Average HRC Cost	486.28				
Usage	1.048	509.62			
Scrap credit	410				
Usage	-0.045	-18.45			
Wage	16				
MHPT	1.40	22.40			
Electricity	160.00	8.00			
Natural Gas	2.20	8.80			
Other Costs		<u>28.00</u>			
Total process cost		558.37			
<b>Plant Overhead</b>					
CRC Cost		558.37			
Wage	16				
MHPT	0.6	9.60			
Other Costs		<u>19.70</u>			
Total process cost		587.67			
CRC Cost w/ Overhead		587.67			
Depreciation		29.00			
Interest		<u>13.00</u>			
<b>Total Pretax Cost</b>		<b>629.67</b>			

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Company: <b>Composite</b>	HR Capacity: 3.0	HR Quality 8	Country: All
Plant: <b>Average BOF</b>	CR Capacity: 1.5	CR Quality 8	Exchange Rate: 1
	Slab Capacity: 6.7	Furnace BOF	Currency US Dollar

<b>Summary Through Stage Costs</b>		<b>Raw Material Costs/T</b>	<b>Total</b>	<b>Pig</b>	<b>LS</b>	<b>Slab</b>	<b>HRB</b>	<b>HRC P&amp;O</b>	<b>CRC w/OH</b>	<b>HRB w/OH</b>
		Coal	70.47	73.05	64.28	66.53	64.35	67.25	70.47	64.35
		Coke	17.21	17.84	15.70	16.25	15.72	16.43	17.21	15.72
Coke	209.59	Iron Ore	146.09	151.42	133.25	137.92	133.39	139.40	146.09	133.39
Pig Iron	269.65	Scrap	94.06	0.00	85.80	88.80	85.89	89.76	94.06	85.89
Liquid Steel	388.47	DRI/Pig	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Slab	415.81	Slab	37.76	0.00	0.00	0.00	34.48	36.03	37.76	34.48
HRB	457.20	HRC	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
HRC (P&O)	486.28	Total	365.59	242.31	299.04	309.50	333.83	348.85	365.59	333.83
CRC	558.37									
Overhead	29.30	<b>Labor Costs/T</b>								
CRC w/Overhead	587.67	MHPT	5.469	0.998	1.509	2.061	2.594	3.310	4.869	3.194
Depreciation	29.00	Wage	16	87.51	15.97	24.14	32.98	41.50	52.97	77.91
Interest	13.00									
CRC Pretax Cost	629.67	<b>Other Costs/T</b>	169.31	22.64	72.92	91.47	101.47	116.04	149.61	119.20
		<b>Energy Costs/T</b>	52.26	14.39	14.97	17.54	29.26	33.83	52.26	29.26
		<b>Energy/Scrap Credit</b>	-87.00	-25.67	-22.59	-35.68	-48.86	-65.41	-87.00	-48.86
		<b>CRC w/ OH</b>	587.67	269.65	388.47	415.81	457.20	486.28	558.37	484.53
		<b>Marginal Cost</b>	492.12	246.95	348.54	371.38	407.61	431.10	484.24	414.71
			78.2%							
		<b>Fixed Cost</b>	137.55	22.69	39.93	44.44	49.59	55.17	74.13	69.83
			21.8%							
		<b>Share of cost in \$</b>	289.34							
			46.0%							
		<b>Share of cost in HC</b>	340.33							
			54.0%							