

## Comparison of Coal at Sampoor with LNG at West Coast

		COAL				LNG				
<b>Fuel Characteristics</b>	<b>COALPRICE</b> <b>(\$/MT)</b>	65.68	65.68	71.7	71.7	<b>PRICE</b> <b>(\$/mmbtu)</b>	8.50	8.50	8.50	8.50
	(Delivered at Power Plant price based on imported CIF prices)					(Delivered at Power Plant based on Henry Hub)				
	Heat Content (kCal/l)	-	-	-	-	Heat Content (kCal/l)	5850	5850	5850	5850
	Specific Gravity (kg/l)	-	-	-	-	Specific Gravity (kg/l)	0.45	0.45	0.45	0.45
	Heat Content (kCal/kg)	5500	5500	5900	5900	Heat Content (kCal/kg)	13000	13000	13000	13000
	Fuel Cost (\$/Gcal)	11.9	11.9	12.2	12.2	Fuel Cost (\$/Gcal)	33.690	33.690	33.690	33.690
		<b>500MW</b> <b>Trinco</b> <b>Coal</b> <b>Plant</b>	<b>500MW</b> <b>Trinco</b> <b>Coal</b> <b>Plant +</b> <b>Jetty</b> <b>+Tx line</b>	<b>300M</b> <b>W</b> <b>NEW</b> <b>COAL</b> <b>PLANT</b>	<b>300MW</b> <b>NEW</b> <b>COAL</b> <b>PLANT</b> <b>+Jetty</b> <b>+Tx line</b>	<b>LNG</b> <b>300MW</b> <b>plant</b> <b>only</b>	<b>LNG</b> <b>500MW</b> <b>plant</b> <b>only</b>	<b>LNG</b> <b>500MW</b> <b>plant</b> <b>+ FSRU</b> <b>+Tx</b>	<b>LNG</b> <b>500MW</b> <b>plant</b> <b>+ Land</b> <b>Terminal +</b> <b>Tx</b>	
Plant Capacity (Gross)	MW	500.0	500.0	300.0	300.0	300.0	500.0	500.0	500.0	
Plant Capacity (Net)	MW	454.0	454.0	270.0	270.0	286.9	478.2	478.2	478.2	
Plant Unit Capital Cost (Gross)	(USD/kW)	1030.6	1030.6	1668.2	1668.2	1041.1	1041.1	1041.1	1041.1	
Plant Unit Capital Cost (Net)	(USD/kW)	1135.1	1135.1	1853.6	1853.6	1088.5	1088.5	1088.5	1088.5	
Plant cost	Mill USD	515.32	515.32	500.47	500.47	312.33	520.56	520.56	520.56	
Jetty Cost	Mill USD		113.0		113.0					
FSRU/Terminal Cost	Mill USD							171.3	487.8	
Transmission Cost	Mill USD		100		100			40.8	40.8	
Total Investment Cost	Mill USD	515.32	728.32	500.47	713.47	312.33	520.56	732.66	1049.16	

Discount Rate		10%	10%	10%	10%	10%	10%	10%	10%
Life Time	Years	30	30	30	30	30	30	30	30
PV factor		9.4269	9.4269	9.4269	9.4269	9.4269	9.4269	9.426	9.4269
Plant Factor	%	80%	80%	80%	80%	80%	80%	80%	80%
Annual Energy Production	<b>GWh</b>	<b>3181.6</b>	<b>3181.6</b>	<b>1892.2</b>	<b>1892.2</b>	<b>2010.9</b>	<b>3351.4</b>	<b>3351.</b>	<b>3351.4</b>
Full Load Heat Rate (HHV, NET)	(kCal/kWh)	2600	2600	2241	2241	1793	1793	1793	1793
Efficiency (HHV, NET)	%	<b>33%</b>	<b>33%</b>	<b>38%</b>	<b>38%</b>	<b>48%</b>	<b>48%</b>	<b>48%</b>	<b>48%</b>
Fuel Cost	UScts/GCal	1194.2	1194.2	1215.2	1215.2	3369.0	3369.0	3369.0	3369.0
Unit Fuel Cost	UScts/kWh	3.10	3.10	2.72	2.72	6.04	6.04	6.04	6.04
Fixed O&M	\$/kW-mth	2.838	2.838	4.634	4.634	0.378	0.378	0.378	0.378
Variable O&M	\$/MWh	5.5547	5.5547	5.7705	5.7705	4.920	4.920	4.920	4.920
Annual Fixed O&M	(Mill USD)	15.46	15.46	15.01	15.01	1.30	2.17	2.17	2.17
Annual Variable O&M	(Mill USD)	17.67	17.67	10.92	10.92	9.89	16.49	16.49	16.49
Annual Fuel Cost	(Mill USD)	98.79	98.79	51.53	51.53	121.48	202.46	202.46	202.46
Total Annual Cost	(Mill USD)	131.92	131.92	77.46	77.46	131.37	218.95	218.95	218.95
<b>Levelized Cost of Electricity</b>									
LNG price \$8.50/M-BTU Coal price at top of table	US cents/kWh	<b>5.86</b>	<b>6.57</b>	<b>6.90</b>	<b>8.09</b>	<b>8.25</b>	<b>8.25</b>	<b>8.92</b>	<b>9.93</b>

<b>LNG price \$8.00/M-BTU</b>	<b>do</b>	<b>7.90</b>	<b>7.90</b>	<b>8.57</b>	<b>9.57</b>
<b>LNG price \$7.50 /M-BTU</b>	<b>do</b>	7.54	7.54	8.21	9.21
<b>LNG Price \$6.50/M-BTU</b>	<b>do</b>	<b>6.83</b>	<b>6.83</b>	<b>7.50</b>	<b>8.50</b>

NOTE: Sensitivity to LNG price is shown in the last three rows of the last four columns.

**Author Kumar David takes responsibility for the data which was gathered from many sources including the CEB. Calculation utilizes a CEB Generation Planning Department Excel program and the presentation follows its style.**