

APPENDIX H - BRIGG REP FACILITY - PRELIMINARY CALCULATION OF 'FIRST PRINCIPLES' TRAFFIC DEMAND

TRAFFIC FLOW CALCULATIONS SLEAFORD RENEWABLE ENERGY PLANT

ASSUMPTIONS

Operating regime

Operating hours	h/d	24	
Operating days	d/week	7	
Operating weeks	week/y	50	Annual shutdown for 2 weeks during summer
Delivery days	d/week	5.5	
Availability, excluding ar	%hours	94%	

Material inputs

Straw	t/h	30.21
Lime reagent	t/h	0.20

Material exports

Total ash	%mass	5.80%	
Of which: bottom ash	%total ash	75%	Remainder of ash goes to fly ash
Char with bottom ash	%mass	10%	In addition to basic mass of ash
Char with fly ash	%mass	5%	In addition to basic mass of ash
Moisture in botttom ash	%mass	50%	

Vehicle carrying capacities

Straw lorry	tonnes	20	Typically 3 layers of 12 bales; each 0.55 tonnes
Bottom ash lorry	tonnes	26	
Fly ash lorry	tonnes	13	Lower capacity assumed - may be volume limited due to low density
Lime reagent	tonnes	30	Lower capacity assumed - may be volume limited due to low density

Staff levels

Day staff	#	10	
Shift workers/shift	#	4	12h shifts; 5 shift system

CALCULATIONS

		annual (t)	weekly (t)	del day (t)	non del day (t)
Performance					
Straw input	tonnes	238,538	4,771	867	0
Lime input	tonnes	1,579	32	6	0
Bottom ash export	tonnes	21,790	436	79	0
Fly ash export	tonnes	3,632	73	13	0

**Delivery Hours
Per Day**

66

		annual	weekly	del day	non del day
HGVs (one way)					
Straw	trips	11927	239	44	0
Lime Input	trips	53	2	0.2	0
Bottom ash	trips	839	17	4	0
Fly ash	trips	280	6	2	0
Totals					
HGVs (one way)	trips	13099	264	50	0
Cars (one way)	trips			18	18

Trips per hour

3.62

0.03

0.26

0.09

3.97

HGV's