



'Stockport's Homes biomass project – a case study'

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Local biomass supply chains and the Stockport Homes example

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- 7 projects (4.2MW)
- About £600,000 a year in biomass
- 2000+ flats
- 6,000 tonnes a year of wood chips
- Purchased by the £/MWh
- 3 year contract extended to October 2016

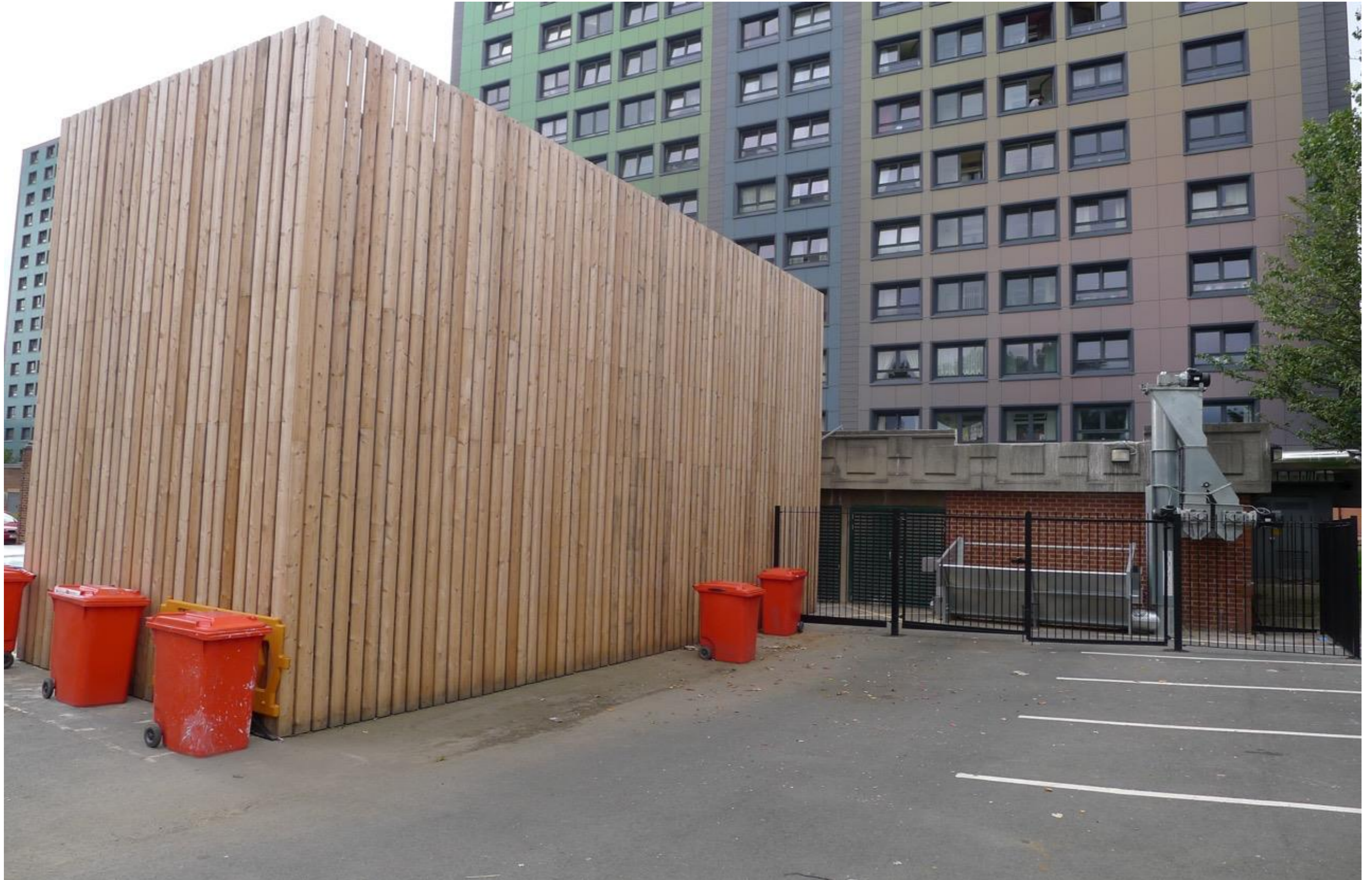
- Heaton and Norris
- York Street
- Mottram Street
- Lancashire Hill
- Hollow End
- Victoria Park

- Schemes were installed and commissioned between January 2013 and September 2014
- Part of a range of wider ECO works to upgrade and improve the high rise blocks (over cladding, new internal radiators etc).
- Represent one the UKs largest biomass heating projects, and certainly a leading example of biomass installed in a social rented heating context.

Stockport Homes Biomass Schemes



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Our Role

To review and improve biomass performance

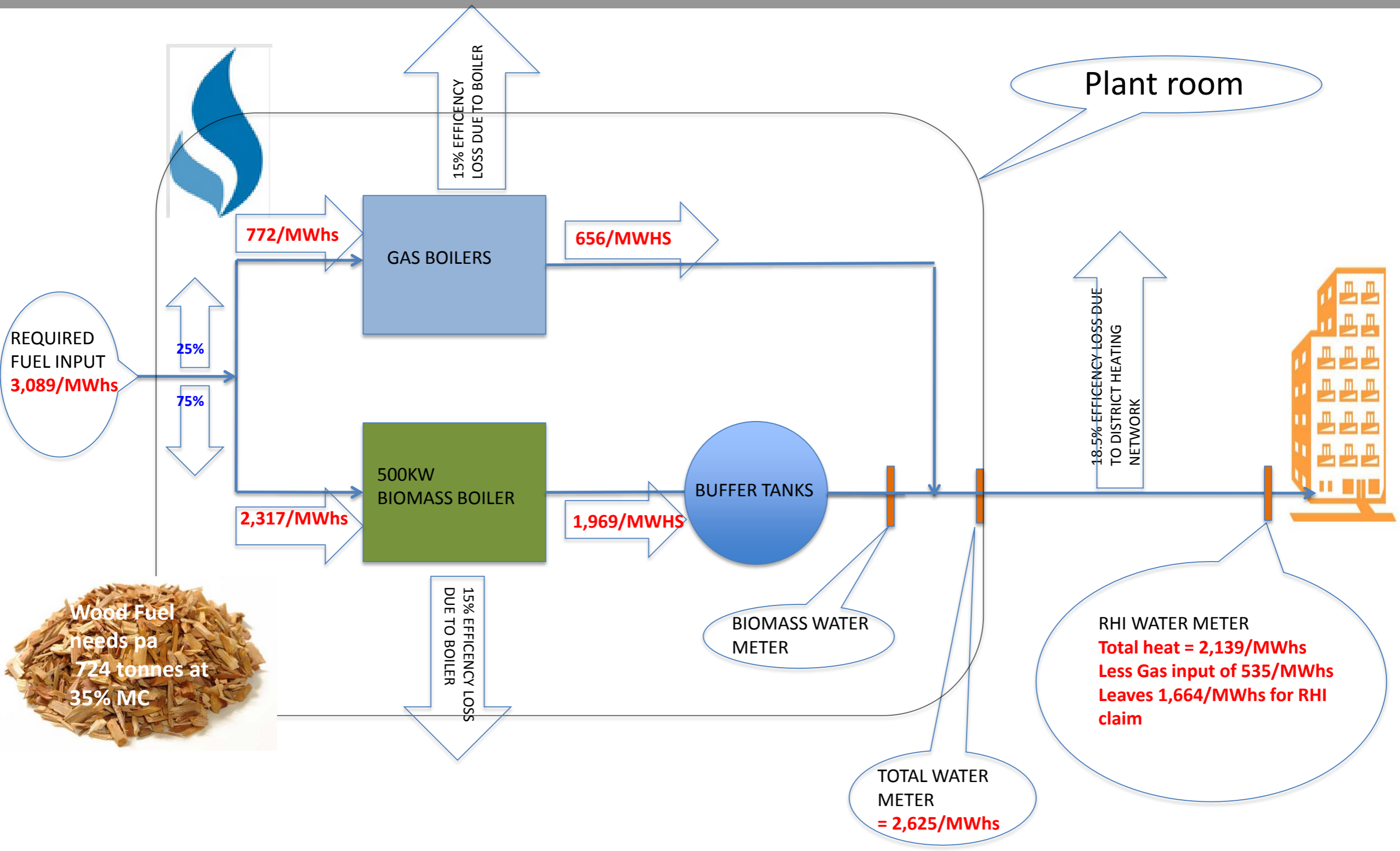
To resolve fuel supply disputes

To develop an in house fuel supply business – with Steve Cirell

Improved efficiency



Delivery Date	Amount Delivered	Moisture content	MWh/t	MWh	MWh	Unit Price	Total Cost of Delivery	Total Cost of Delivery
	tonnes	%	Net CV BEC	Calculated	Actual	Actual	Calculated	Actual
Tuesday, December 29, 2015	2.10	29.00%	3.55	7.46	7.431	33.27	£248.16	£247.23
Wednesday, December 30, 2015	1.80	34.00%	3.25	5.86	5.830	33.27	£194.87	£193.96
Thursday, December 31, 2015	2.30	35.00%	3.19	7.35	7.311	33.27	£244.43	£243.24
Monday, January 04, 2016	6.00	35.00%	3.19	19.17	19.072	33.27	£637.66	£634.53
Tuesday, January 05, 2016	2.34	35.00%	3.19	7.47	7.438	33.27	£248.69	£247.46
Wednesday, January 06, 2016	1.84	35.00%	3.19	5.88	5.849	33.27	£195.55	£194.60
Thursday, January 07, 2016	2.78	35.00%	3.19	8.88	8.837	33.27	£295.45	£294.01
Friday, January 08, 2016	2.02	26.00%	3.73	7.54	7.511	33.27	£250.72	£249.89
Monday, January 11, 2016	4.34	27.00%	3.67	15.93	15.878	33.27	£530.07	£528.26
Tuesday, January 12, 2016	1.88	27.00%	3.67	6.90	6.878	33.27	£229.62	£228.83
Friday, January 15, 2016	3.52	35.00%	3.19	11.24	11.189	33.27	£374.09	£372.26
Monday, January 18, 2016	4.38	33.00%	3.31	14.51	14.448	33.27	£482.86	£480.68
Tuesday, January 19, 2016	2.52	32.00%	3.37	8.50	8.464	33.27	£282.80	£281.60
Wednesday, January 20, 2016	2.38	33.00%	3.31	7.89	7.851	33.27	£262.37	£261.20
Thursday, January 21, 2016	2.52	33.00%	3.31	8.35	8.313	33.27	£277.81	£276.57
Friday, January 22, 2016	2.14	32.00%	3.37	7.22	7.187	33.27	£240.16	£239.11
Monday, January 25, 2016	4.08	33.00%	3.31	13.52	13.459	33.27	£449.78	£447.78
Tuesday, January 26, 2016	2.42	29.50%	3.52	8.52	8.563	33.27	£283.58	£284.89
Wednesday, January 27, 2016	1.38	29.00%	3.55	4.90	4.883	33.27	£163.08	£162.46
Thursday, January 28, 2016	1.88	29.00%	3.55	6.68	6.653	33.27	£222.16	£221.35
Friday, January 29, 2016	2.10	30.00%	3.49	7.33	7.305	33.27	£244.00	£243.04
Wednesday, February 03, 2016	5.16	29.00%	3.55	18.33	18.259	33.27	£609.76	£607.48
Thursday, February 04, 2016	3.14	33.00%	3.31	10.40	10.358	33.27	£346.16	£344.61
Friday, February 05, 2016	1.82	33.00%	3.31	6.03	6.004	33.27	£200.64	£199.75
Monday, February 08, 2016	4.18	33.00%	3.31	13.85	13.788	33.27	£460.81	£458.73
Tuesday, February 09, 2016	2.42	33.00%	3.31	8.02	7.983	33.27	£266.78	£265.59
Wednesday, February 10, 2016	3.30	27.00%	3.67	12.11	12.073	33.27	£403.05	£401.67
Thursday, February 11, 2016	2.42	31.00%	3.43	8.31	8.273	33.27	£276.38	£275.24
Monday, February 15, 2016	6.28	35.00%	3.19	20.06	19.962	33.27	£667.41	£664.14
Wednesday, February 17, 2016	3.78	33.00%	3.31	12.53	12.469	33.27	£416.71	£414.84
Thursday, February 18, 2016	2.72	35.00%	3.19	8.69	8.646	33.27	£289.07	£287.65



Wood Fuel Supply Plans in House



Why develop a supply in house?



Price:

The depot will be closer to the biomass boilers than an external suppliers can be, so reducing haulage costs

The depot will have no need to make a commercial profit.

The depot can secure lower cost feedstock if it can obtain wood from Councils own woodlands (and other such low cost sources)

Other:

Underpin local woodland management

Provide a use for vacant land (new fast rotation forestry)

It can stabilize/control the long term costs of energy compared to gas

It creates local jobs

But:

It shouldn't crowd out local suppliers

It needs an internal demand of c2,000 t +

Depot operation principals

Sources round wood feedstock



1. Woodlands/energy crops
2. Arbor
3. Commercial roundwood
4. Recycled and sawmills



Store logs at depot till dry

Store and maybe dry chips



Deliver chips



Chip logs

Costs add to price of heat
£ per MWh

Auditing the available resource



Woodlands
Parks, green waste
Other public woods
New sources – fast rotation trees, amenity woods
etc

Biomass Sustainability
Regulations, CPET and
RHI compliance

Urban Woodlands Woodlands Satellite Mapping data

Council	LA area (HA)	Woodlands area (HA)	Sustainable theoretical annual tonnes at 35%
Bolton	13,980	1,286	3,215t
Bury	9,948	591	1,477t
Manchester	11,565	725	1,813t
Oldham	14,278	321	802t
Rochdale	15,808	595	1,488t
Salford	9,719	872	2,180t
Stockport	12,606	1,180	2,950t
Tameside	10,313	1,211	3,027t
Trafford	10,604	522	1,305t
Wigan	18,819	1,304	3,260t
Totals	127,640	8,607	21,517t

Data sourced from Redrose Forest and via 2009 and 2011 aerial photography – Greater Manchester Tree Audit (GMTA Consortium/Bluesky)

Tonnes at 35% calculated as if 100% of the woodlands are managed and 100% of the yield is used for wood fuel feedstock

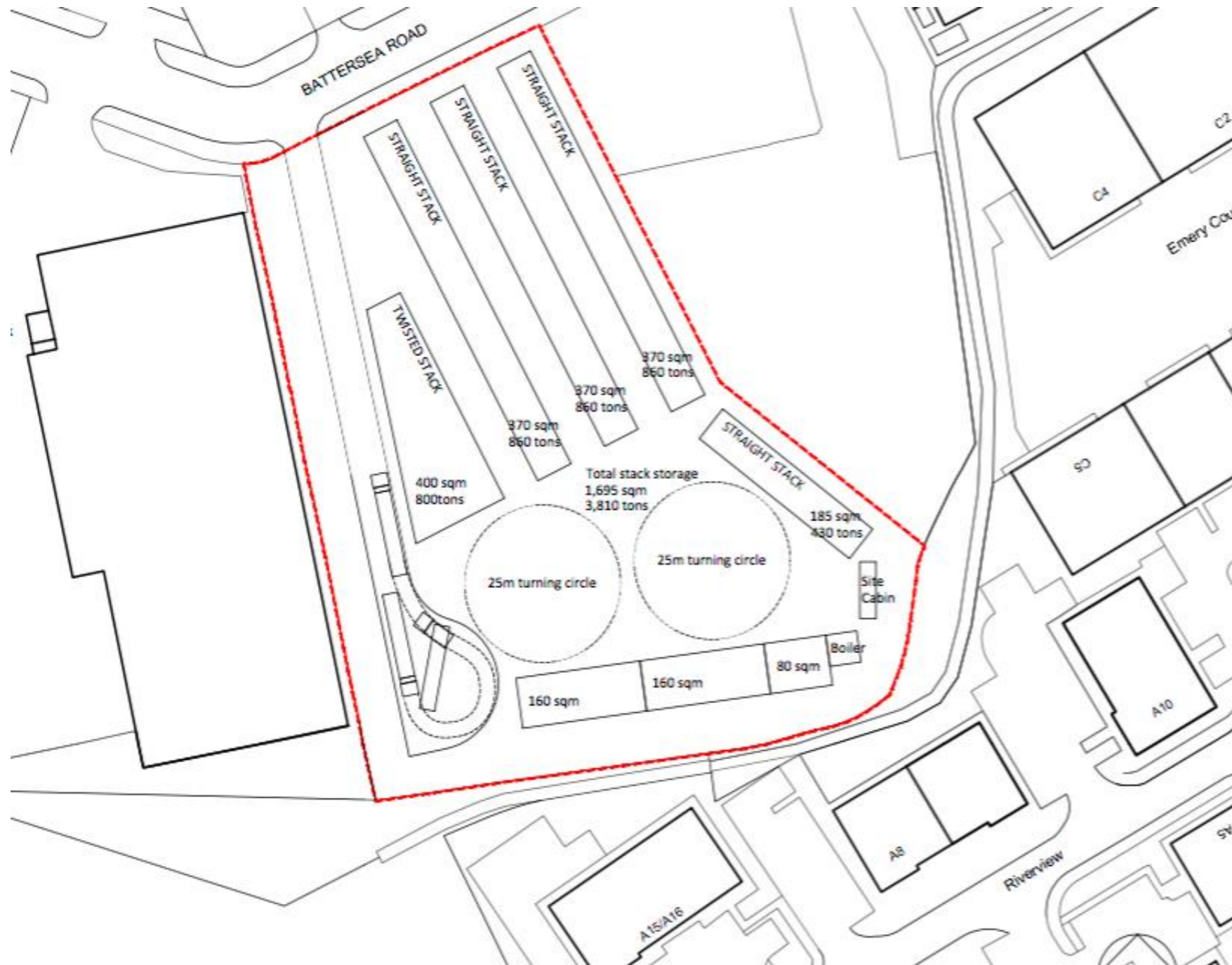
Excludes Warrington, Cheshire East and Cheshire West and Cheshire Councils (adds 6,453 tonnes?)

Stockport Wood Resources



Source (all figures in tonnes pa at 35% MC)	Theoretical availability of wood fuel	Likely actual availability for a depot
Urban Woodlands	28,000 t	7,000 t
Arboricultural arisings	3,500 t	700 t
Recycled wood	200,000 t	10,000 t
Commercial Forestry	160,000 t	80,000 t
Energy Crops	2,323 t	370 t
Sawmills co-products	37,800 t	3,780 t
Totals	431,623 t	101,850 t

Possible site



CLIENT	Stockport Homes
PROJECT	Wood Fuel Processing Site Battersea Road (Adjacent to Timbermat Ltd) Heaton Mersey, Stockport, SK4 3EA
DRAWING TITLE	Proposed Site Plan
STATUS	<input checked="" type="checkbox"/> PRELIMINARY <input type="checkbox"/> CONSTRUCTION WALL <input type="checkbox"/> TENDER ISSUE <input type="checkbox"/> AS BUILT / RECORD DRAWING



Conclusion:

1. Stockport Homes use biomass to heat 2000+ flats
2. After initial set up issues it has proved attractive and profitable
3. Internal wood fuel supply is possible

Thank you for listening

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