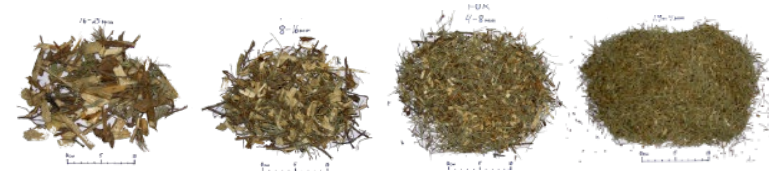


Biomass Technology Centre (BTC)

R&D support and services



Whole-chain pilot-scale facilities



Chipping



Drying



Fractioning



Densification



Milling



Thermal treatment

Well-defined materials

Feedstock procurement and management

- Can procure local feedstock types (mainly from forestry) and provide detailed information for publishing
- Accept and manage deliveries from clients
- Reliability – experience and order
- Short-time storage can be arranged
- Management of deliveries from BTC to clients



Representative sampling (standard methods) and sample preparation



Drying - from tons to kg



- Plane and cyclone drying
- Wide particle size range
- Can manage wet and sticky materials

Comminution – from tons to grams



Mills

Mill type	Model	Screen size	Capacity	Moisture content limit	Minimum sample amount	Info
Shredder/slow rotating cutting mill	Lindner Micromat MS 2000	30 and 15 mm	Several ton/h	< 30 %	50 kg	All materials except soft plastics, very robust
Hammer mill	Bühler DFZK 1	8; 6; 4; 2 mm	1-2 ton/h	< 15 %	20 kg	Mainly biobased materials, no gravel or metal contamination
Log mill	Klingmill	-	Some 100kg/h	-	1 m logs	From fresh log to fine powder without previous drying
Impact mill	Kamas BAC-50	7; 5; 2; 1.5; 1 mm	50 kg/h	< 10 %	a few kg	Mainly biobased materials, no gravel or metal contamination
Slow-rotating cutting mill	Retsch SM2000	20; 6; 1 mm	10-20 L/h	dry < 2 %	0,5 L	All materials except soft plastics, very robust
Fast-rotating cutting mill	Fritsch P19	1; 0.5; 0.25 mm	1-10 kg/h	dry < 2 %	0,3 L	Mainly biobased materials, no gravel or metal contamination
Speed rotor mill	Fritsch Pulverisette 14	0.5 – 0.2 mm	a few L/h	dry < 2 %	small amounts	Small sample losses
Chipper	Edsbyhuggen	12-5 mm	0.5-3 ton/h	<60 %	1 m logs	For tree stems
Compost shredder	Stihl GHE 355		100 kg/h	< 60 %	1 kg	
Straw chopper	-	100-50 mm	100kg/h	< 60 %	1 kg	Mainly for straw materials

Fractioning and screening – size and density (PSD)



Screening and fractioning

Type	Model	Screen sizes	Capacity	Moisture content limit	Sample amount	Info
Screen and fractioning equipment	Mogensen E0554	0.25-35 mm	500 kg/h	depends on screen size	a few kg and up	Many different material types, up to 5 fractions simultaneously
Density fractioner	Franssons Recycling Liftsep		200-1000 kg/h	50 %	few kg and up	Separates into two fractions
Oscillating sceen (rectangular screens)	Circular apertures	Ø: 63; 45; 31,5; 16; 15; 10; 8; 5; 4; 3; 2 mm		< 60 %	10-20 L/analysis	According to SCAN-CM 40:01
Oscillating screen (circular screens)	Circular apertures	Ø: 63; 45; 31,5; 16; 8; 3,15 mm		< 60 %	< 5 L/analysis	According to SS-EN 15149-1
Vibrating screen	Rectangular apertures	45; 31.5; 16; 8; 4; 3.15; 2.8; 2.0; 1.4; 1.0; 0.71; 0.5; 0.355; 0.25 mm		dry < 2 %	< 0,2 L/analysis	According to SS-EN ISO 17827-2:2016

Pelleting – many different materials from tons to grams



Poplar



Reed canary grass



Forest residues



Pine bark



Beech



Corn cobs



Recycled textile



Torrefied spruce



“Solid recovered fuels”

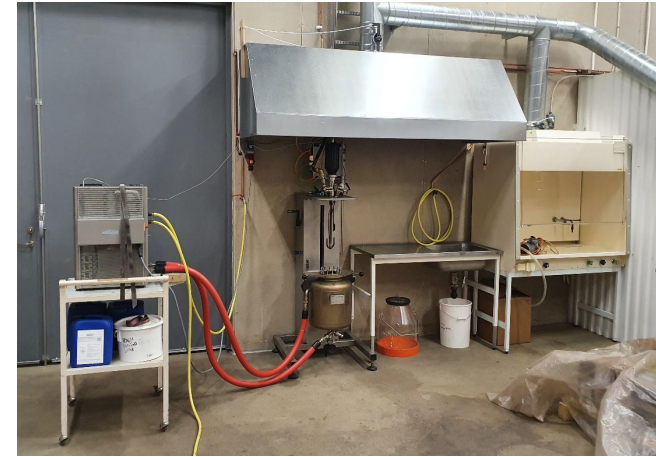
Custom-built systems and handy-man support



Cyclone dryer
For wet and sticky materials



High-temperature oven
Gas emissions and control



HTC reactor
20 L batch system



**Micro-algae
floatation tank**



Manufacturing of special assortments



Inner and outer birch bark



Aspen, birch, Scots pine, and Norway spruce stemwood chips



High concentration of Norway spruce needles



Sorted recycled materials

Web page

<https://www.slu.se/institutioner/skogens-biomaterial-teknologi/btc/pilotanlaggning/>