

The Shape of Things to Come

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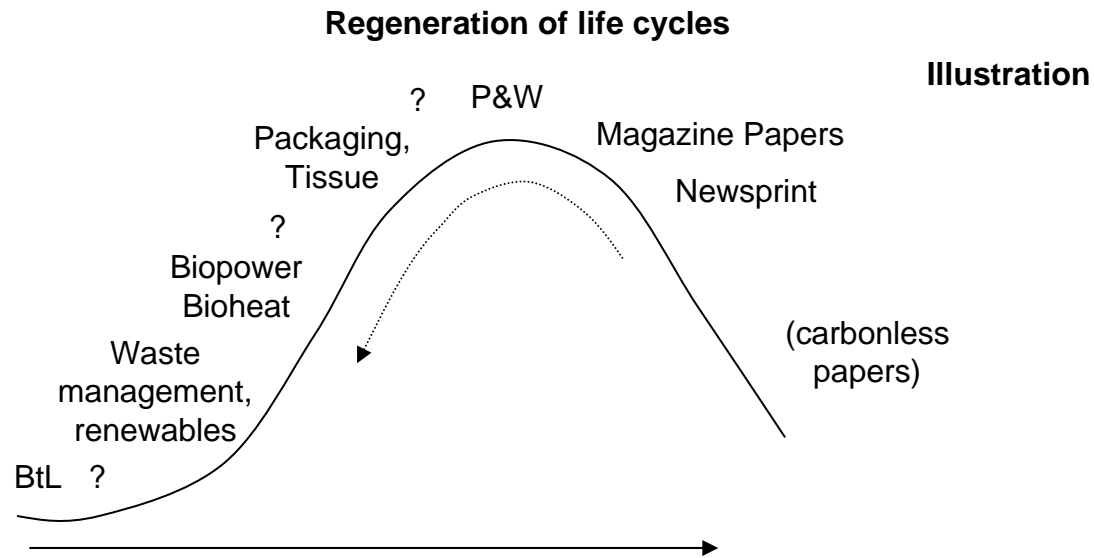
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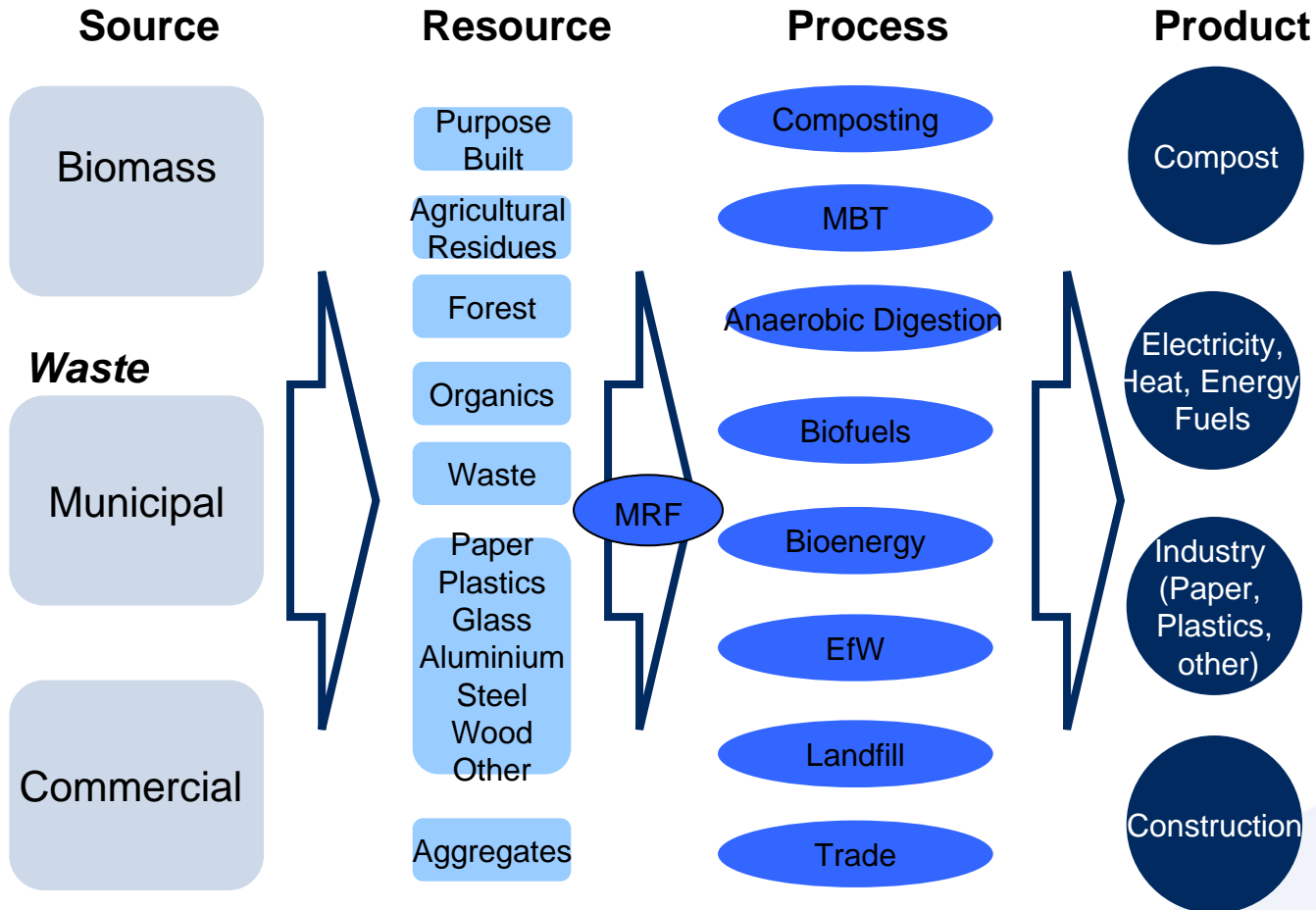
New Business Models (Sustainability)

The drive to bioenergy ('low carbon', energy security) and waste management ('zero to landfill') are key pathways to change the nature and prospects of the forest, paper, packaging and tissue sectors - to change site-by-site the very definition of the industry, and to regenerate the business life cycle.

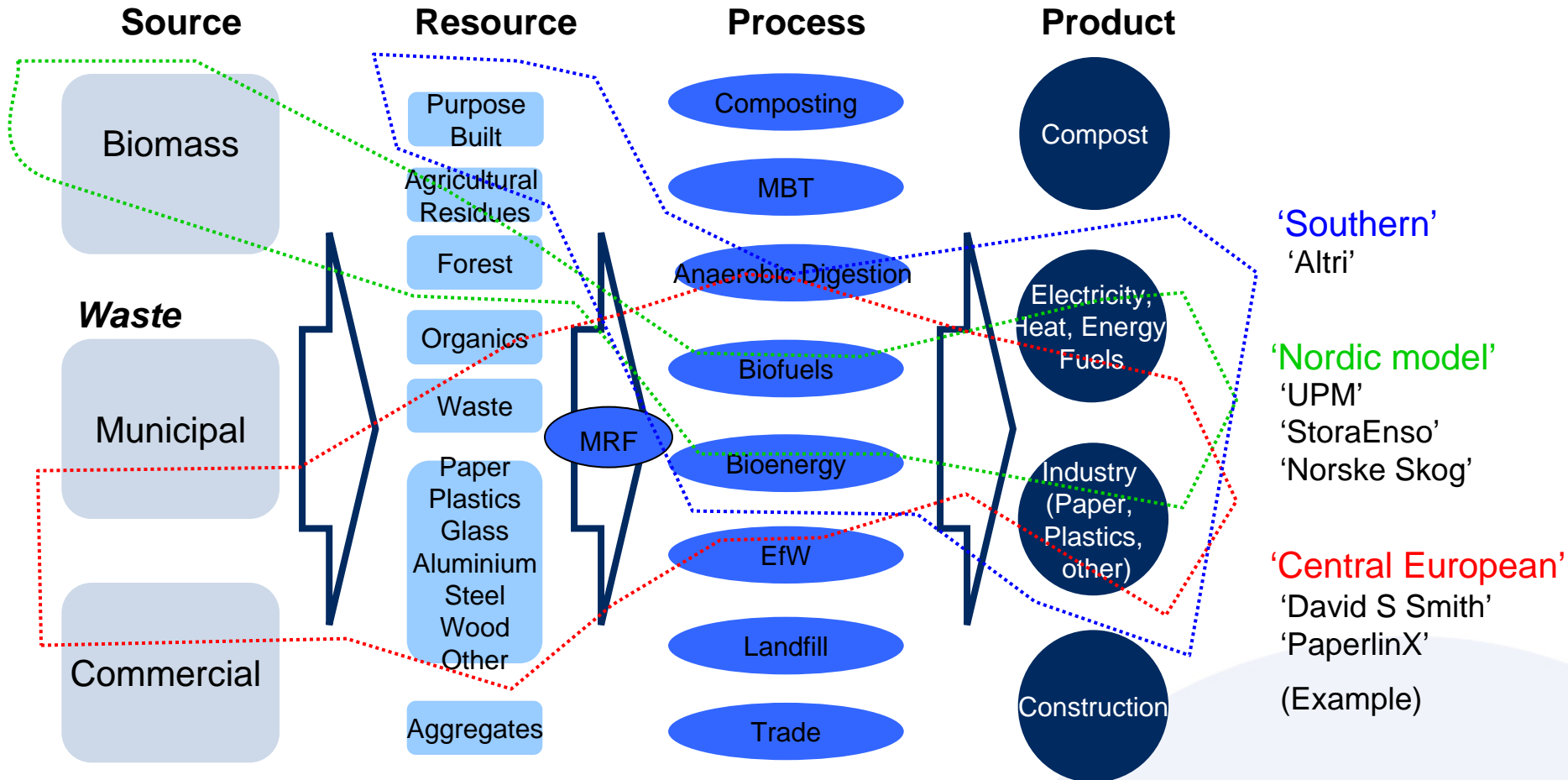


The Industry is at the heart of change. The industry is based on the two key raw materials streams where change is taking place - biomass (bioenergy) and recovered paper/wood (waste management). Not choosing to participate, opens the industry to risk, and loss of a growth opportunity.

'Paper Sector' - New Business Models



'Paper Sector' - New Business Models ?



Who Owns the New Business Models ?

'Paper Sector' - New Business Models

Selected examples

BioPower & Heat				
BioFuels				
Biomass sales, alternative renewables				

Caletonian Targa Project, Sulfur Fired Power Plant, Scotland

- Client: UPM-Kymmene (UK) Ltd
- The plant will consist of a 900 MW power plant (90 MW_e), a reduction in emissions, waste-to-energy plant (20 MW_e), fuel handling equipment and auxiliary systems.
- Low steam output at higher outlet (60 bar and 120°C)
- Low steam flow to heat (34 Aggs)
- Process steam to fuel is delivered at 20 bar and 120°C

Scope of services:

- Project management
- Complete RCF engineering
- Flue gas
- Material
- Planting
- RCF construction
- WRCB
- Cost savings

Waste-to-Energy – Case Study: WRG, Allington

WRG recently constructed an integrated waste management plant in the UK. Pöyry was commissioned to undertake the full owner's engineering services.

- WRF: 15 t/h
- RCF preparation: 2 x 45 t/h
- Incineration: 3 x 21 t/h, 3 x 54 MW_e
- Steam output: 3 x 60 t/h
- Steam conditions: 60 bar / 420°C
- Electrical output: 43 MWe
- Flue gas flow: 120,000 m³/h
- Materials recovery facility for separately collected materials (Shredder)
- Mechanical treatment (shredding and metal separation) to produce refuse derived fuel (RDF)
- RCF incineration using the RÖHTECH fluidized bed process
- Flue gas treatment using the Circosorb dry absorption process
- Energy recovery by power generation and air-cooled condenser
- Recovery of bottom ash



Integrated Waste Treatment Centre – Hannover



200,000 tpa MBT with Anaerobic digestion

40,000 tpa invessel-composting

Services:
 All engineering services from
 - technical and financial feasibility study,
 - procurement,
 - site supervision to
 - commissioning

