



Paprican

Energy Benchmarking in Pulp and Paper Mills

IEA Benchmarking Project
Report to IEA by Thomas Browne
October 9, 2006

**“If you can not measure it,
you can not improve it”**

Attributed to Lord Kelvin
(William Thomson, 1st Baron Kelvin)
1824-1907

“Benchmarking” vs. “Monitoring”

- The ongoing IEA activity is best described as follows:

“MONITORING AND REPORTING GUIDELINES
FOR ENERGY USE AND CO₂ GENERATION
IN PULP AND PAPER OPERATIONS”

Overall goal

- Several energy reporting methods exist:
 - IEA method (1999)
 - Paprican modification of IEA method (2002)
 - American Process PIB (commercial product)
 - Internal methods (i.e. UPM, Abitibi-Consolidated)
- Goal: consistent reporting across jurisdictions
 - Recommended, non-mandatory tool
 - Use of tool is up to users
 - Allows benchmarking of specific mills with BAT or some other standard on a scientific footing

Overall goal (2)

- Compare methodologies for collecting and reporting data
- Where differences exist, identify a common methodology
 - Address differences
 - Ensure all needs addressed
- Propose a common, recommended method

Detailed goals

- Define what to measure
 - Energy usage for process areas, product grades
- Define data requirements
 - Energy type and units
 - Fibre type and units
 - Reporting period
 - Data reconciliation
- Define process areas
 - Product, Technology, Boundaries
- Define product grades

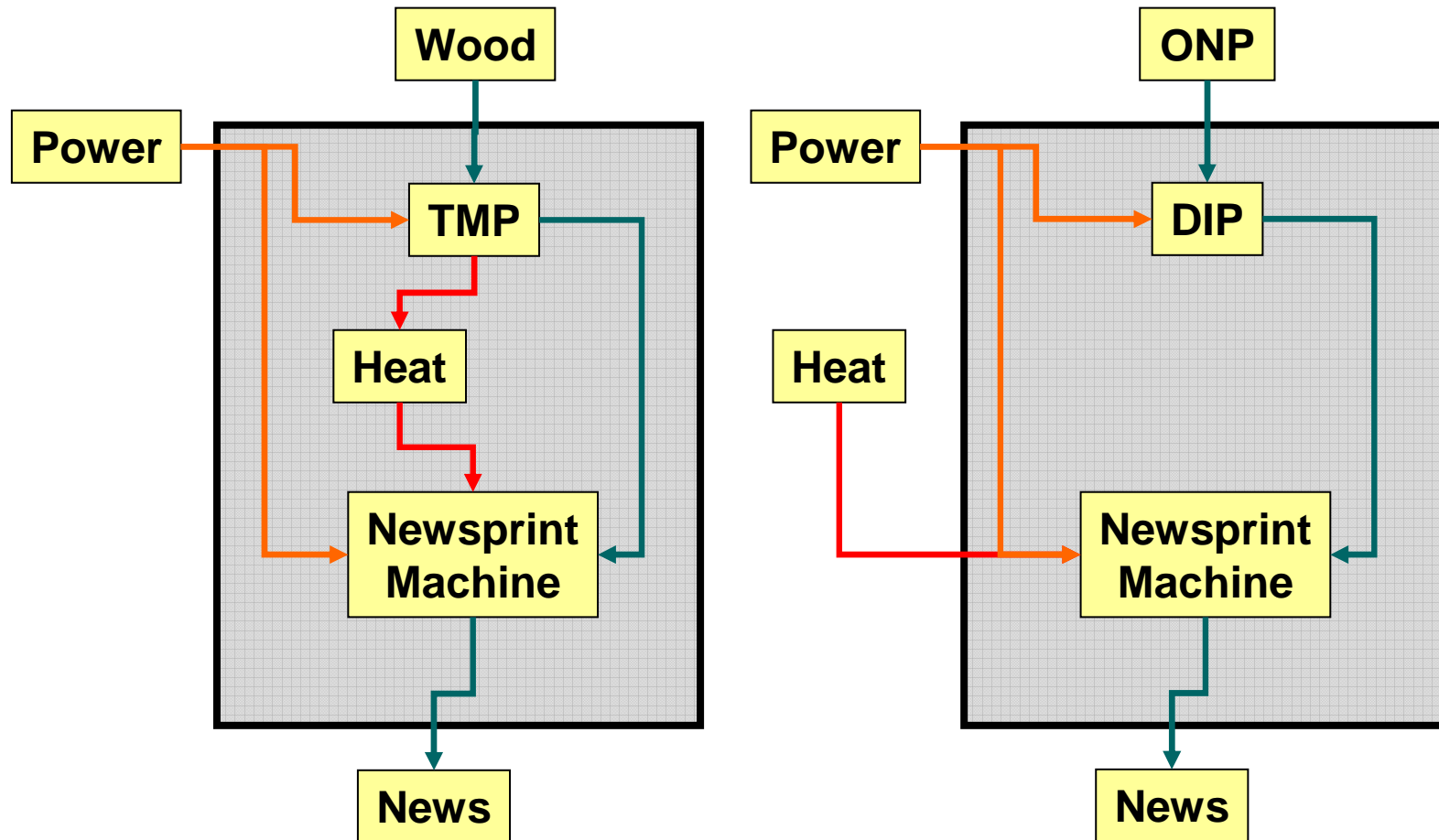
Detailed goals (2)

- Discussion on implementation issues
 - Data collection
 - Data analysis
 - Presentation of results
- Viewpoints of different country representatives are essential

Monitoring concept

- Record comparisons by area, not by mill
- Divide mill into energy conversion and manufacturing areas; areas defined by product and technology
- Allocate energy to areas; reconcile energy inputs and outputs
- Specific energy is energy divided by area production

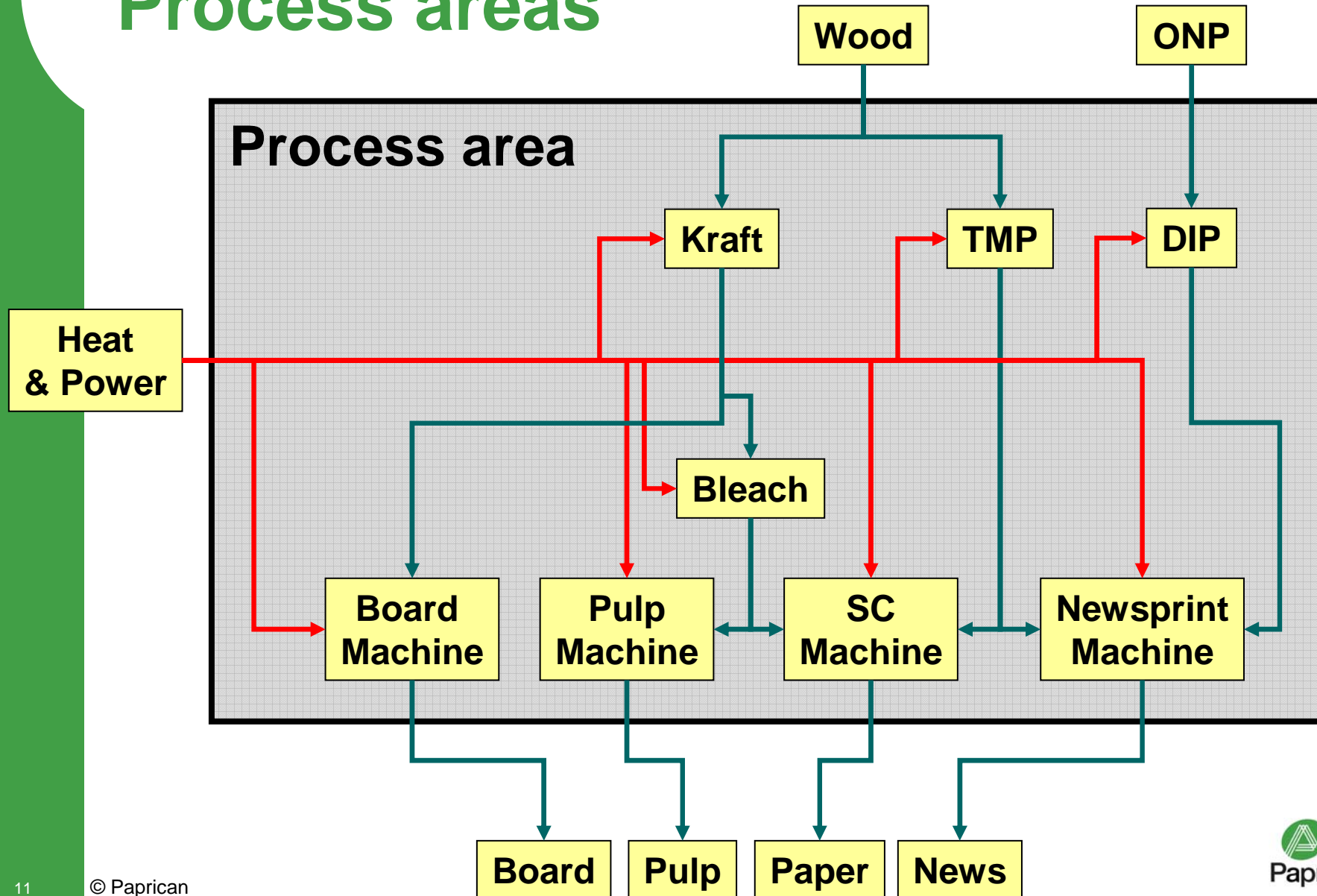
Two different newsprint processes



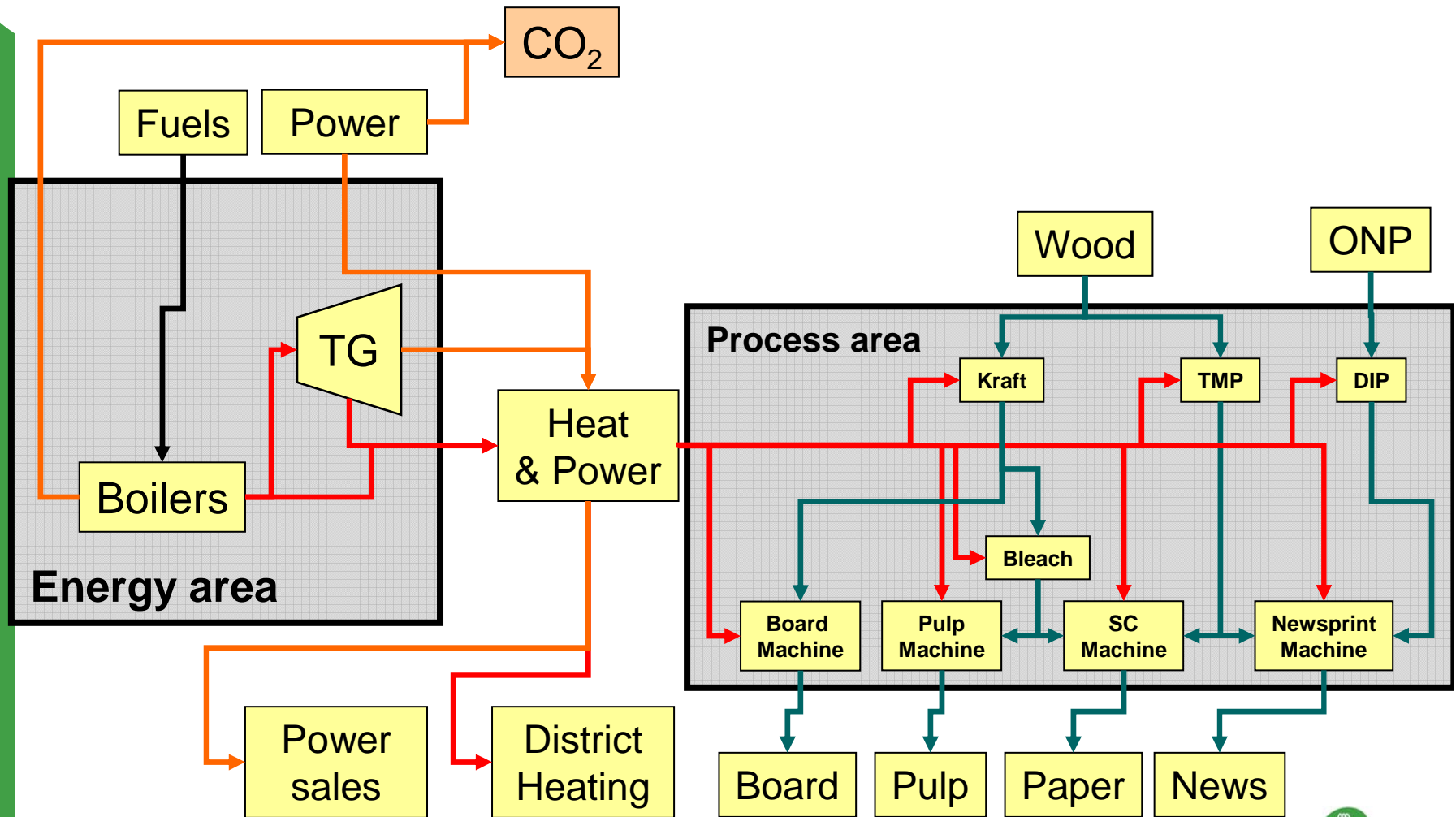
What to measure and report

- Process areas
 - Collect data on energy produced and consumed and fibre produced
 - Allocate energy to areas
- Process areas and product grades
 - Collect data on energy produced and consumed and fibre produced and consumed
 - Allocate energy to areas
 - Allocate energy to products by following fibre

Process areas



Energy and process areas



Project status

- Draft methodology has been circulated to experts and country representatives
 - Finland
 - Sweden
 - Norway
 - Canada
 - USA
- Final meeting to approve: November 9-10, Atlanta
- Final report due December 31, 2006

Setting benchmarks in a policy context

- IETS project aims to provide a consistent measurement and reporting method for existing mills, not set a standard for mills to meet
 - Goal: all mills evaluated on a consistent basis
- “Benchmarking” implies comparison to some standard
 - Identify standard in discussion with appropriate industry representatives
 - Standard must be fair to industry while meeting policy goals (energy efficiency, GHG emissions, etc)