



Energy – A Users Perspective

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GM Pulp – Pan Pac Forest Products Ltd

Pan Pac Forest Products Ltd

- **Fully Integrated Forest Products Company**
- **3 operating Groups**
 - **Forest & Logistics**
 - **Lumber**
 - **Pulp & Utilities**

Pan Pac Energy Balance

• Steam Demand (<i>GJ/yr</i>)	2 million
• Electrical Demand (<i>MWhr/yr</i>)	545,000
• Steam Supply (<i>GJ/yr</i>)	1.5 million
• On Site Electricity (<i>MWhr/yr</i>)	10%
• Fuel Demand (<i>GT/yr</i>)	225,000
• Fuel Supply (<i>GT/yr</i>)	
– On site	200,000
– Off site	25,000
– Waste to Dump	25,000

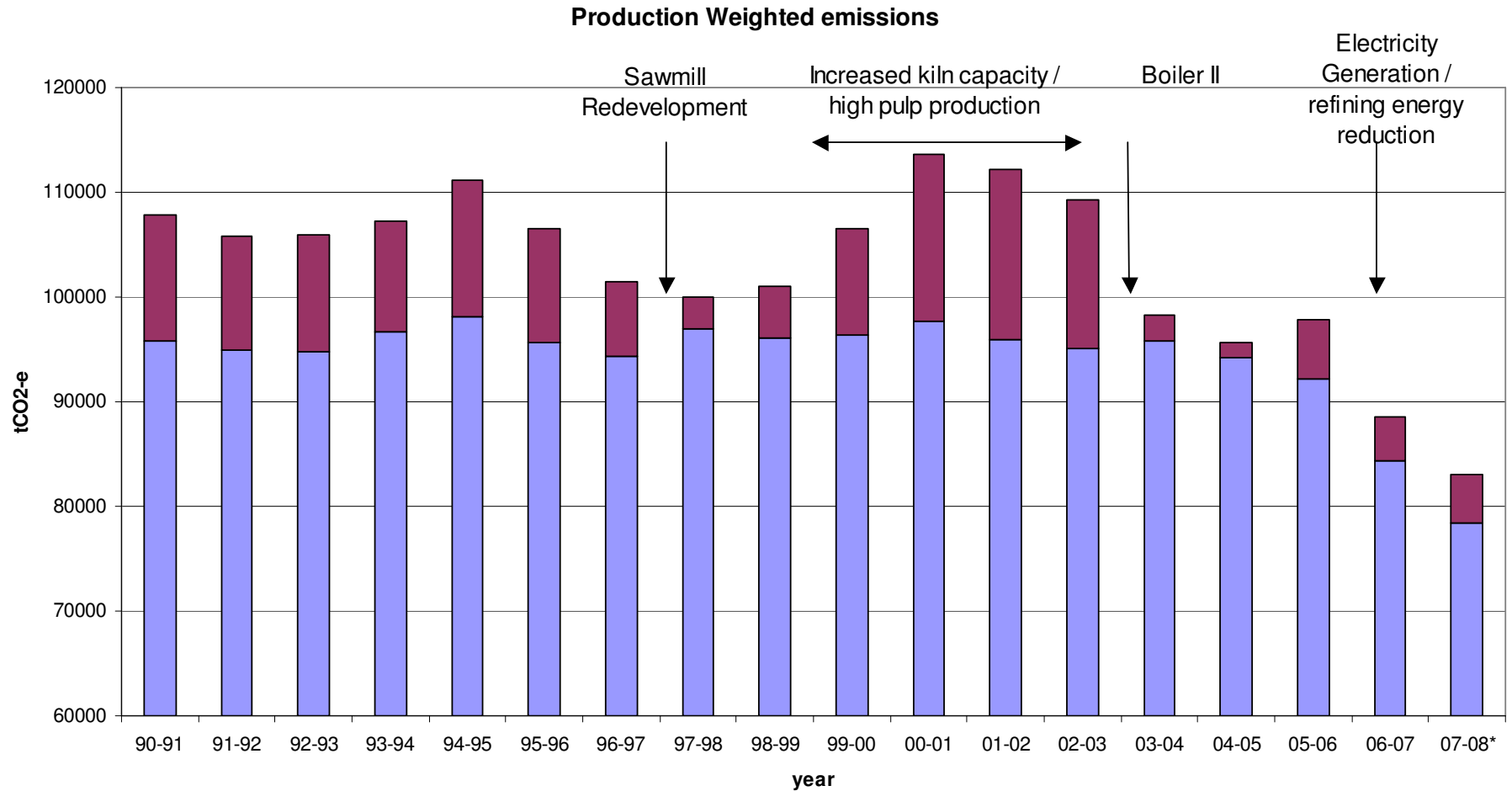
Energy is Extremely Important to Pan Pac

- Approximately 40% of current pulp production costs is electrical energy.
- 12 kilns requiring approximately 700,000 GJ/yr of steam
- Pulpmill requiring 320,000 GJ/yr of steam
- Energy reduction/efficiency has a strong focus

Major Energy Projects

- Boiler 1 – Residue utilisation & cost reduction
- Boiler 2 – Residue Utilisation & Increased Drying Steam Demand
- Steam Turbine – Residue & Steam Utilisation and Cost Reduction
- Waste Heat Recovery from Secondary Refiners
- Refining Energy Reduction

Production Weighted GHG Emissions



Electricity Gas



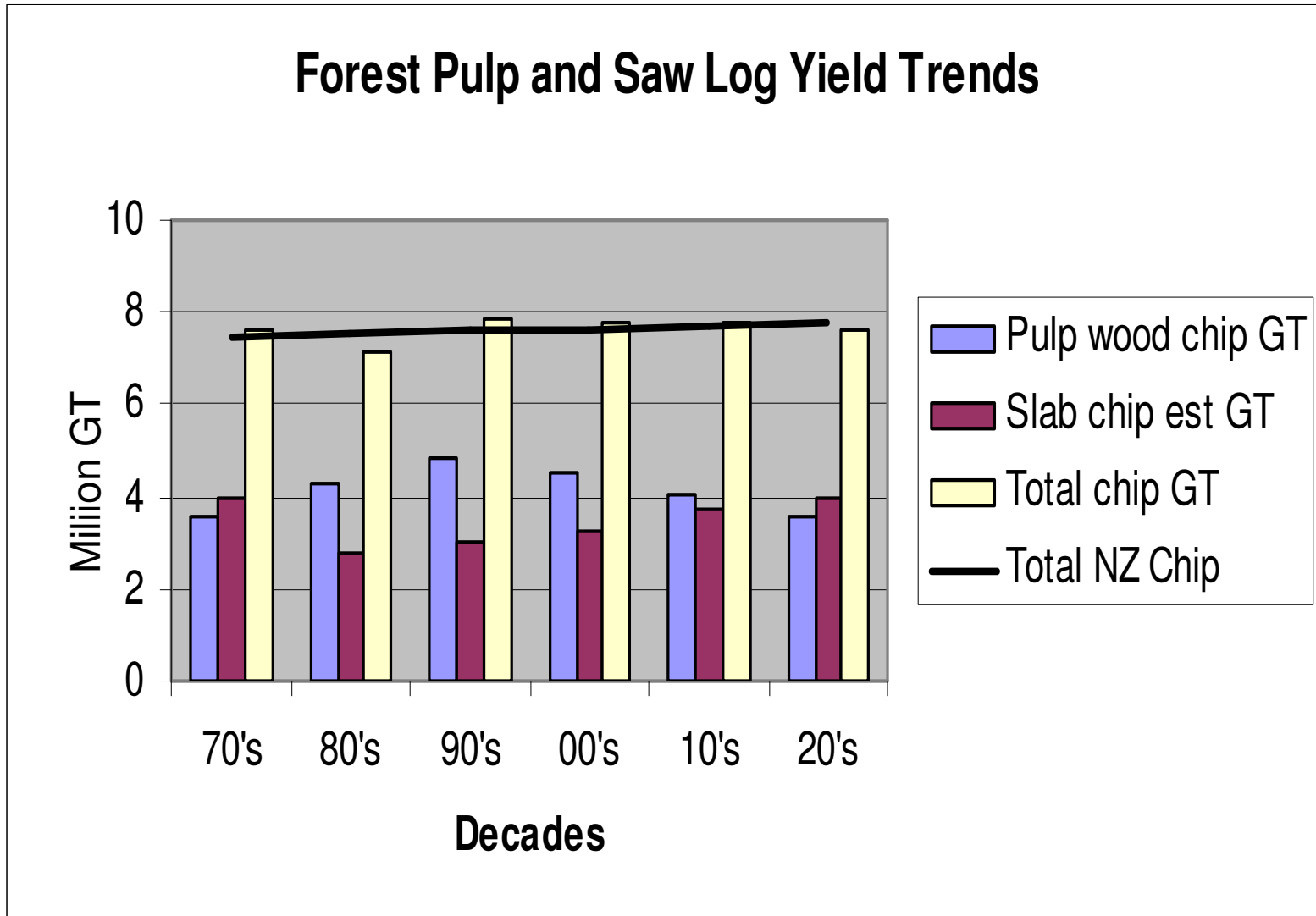
2008 compared to 1990

- Pulpmill production increased 12%
- Sawmill Greensawn production increased 230%
- 12 lumber drying kilns in service

But

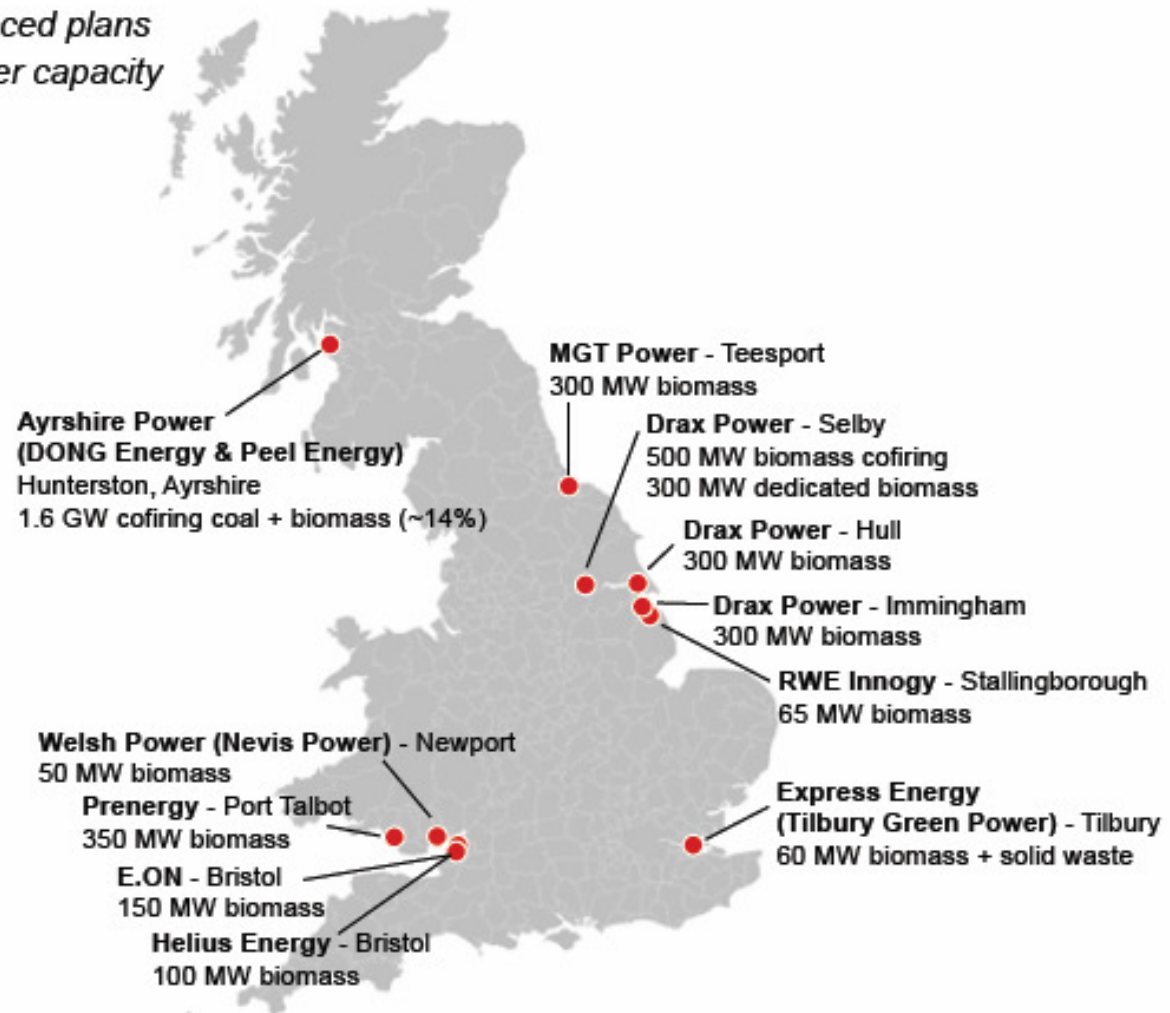
- Purchased electricity reduced by 8%
- Natural Gas usages reduced by 60%
- **Overall GHG emissions at 80% of 1990**

How much fuel is there really out there?



Great Britain – recently announced plans for investment in biomass power capacity

Great Britain: Recently announced plans for investment in biomass power capacity

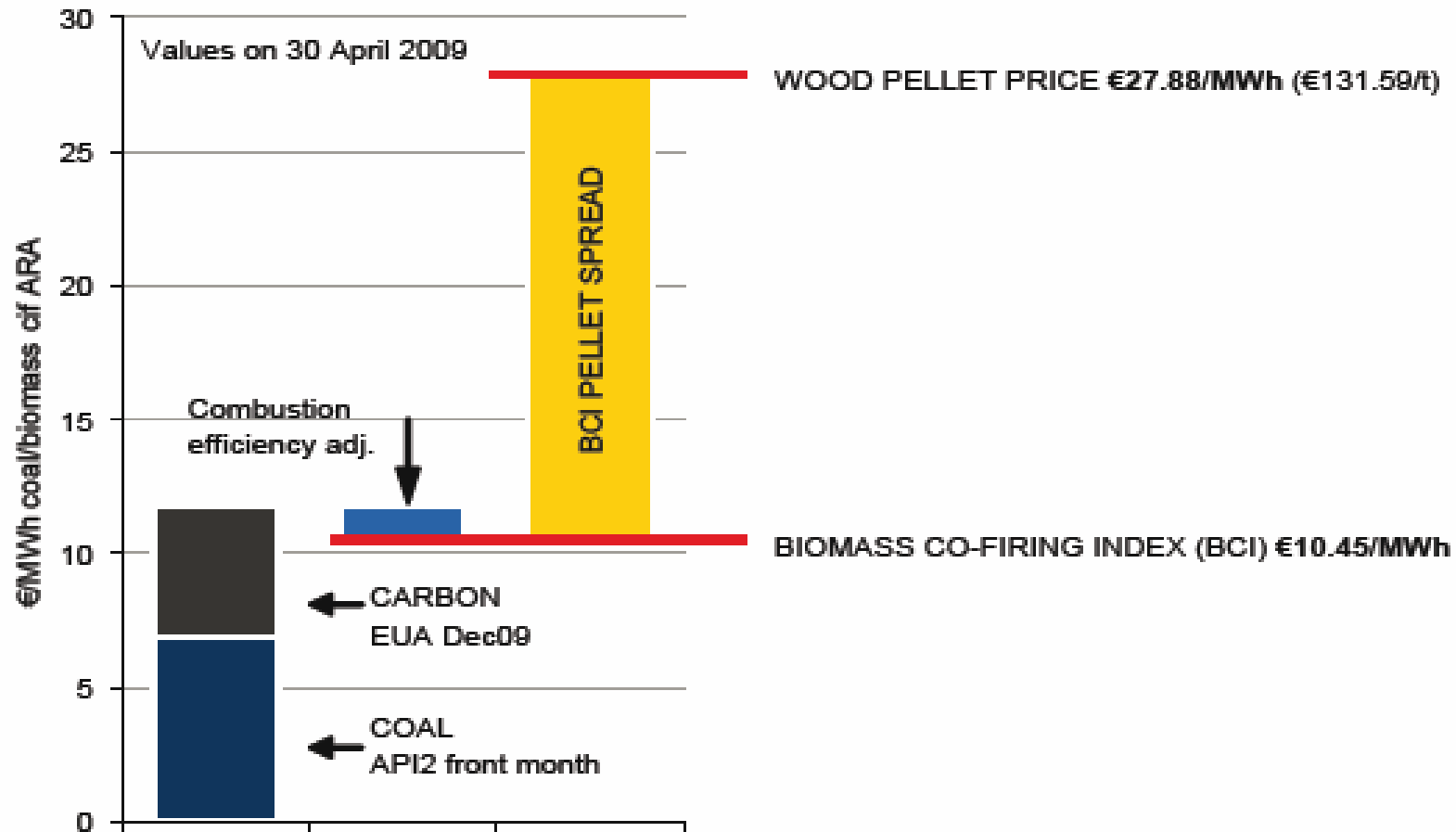


Source: Hawkins Wright research

Can Pellets Compete?

What is the Real Value of Pellets?

Calculation of the Biomass Co-firing Index (BCI) and the BCI Pellet Spread



Source: Hawkins Wright analysis

Discussion

- Everything we do is focused on making our products more competitive
 - Low cost, clean green energy
 - Low cost, clean green raw materials
- What is your motivation for sitting here?
- Remember there is Woody Fuel and Woody Fuel and cr....
 - Moisture, contaminants, comminution options

Discussion

- Can we afford to use commercial wood pellets in NZ or are they destined for export?
- What is driving the demand?
 - Economics?
 - Consumer Preference (nice thing to do?)
 - International Governmental Targets?