

Bioproducts from Woody Biomass

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Introduction

- FPInnovations
- Forest Sector Transformation
- Bio-Opportunities for Wood Biomass

FPInnovations is...

A merger of Canada's forest sector research institutes



Feric – Forest Engineering Research Institute of Canada



Forintek – Canada's National Wood Products Research Institute



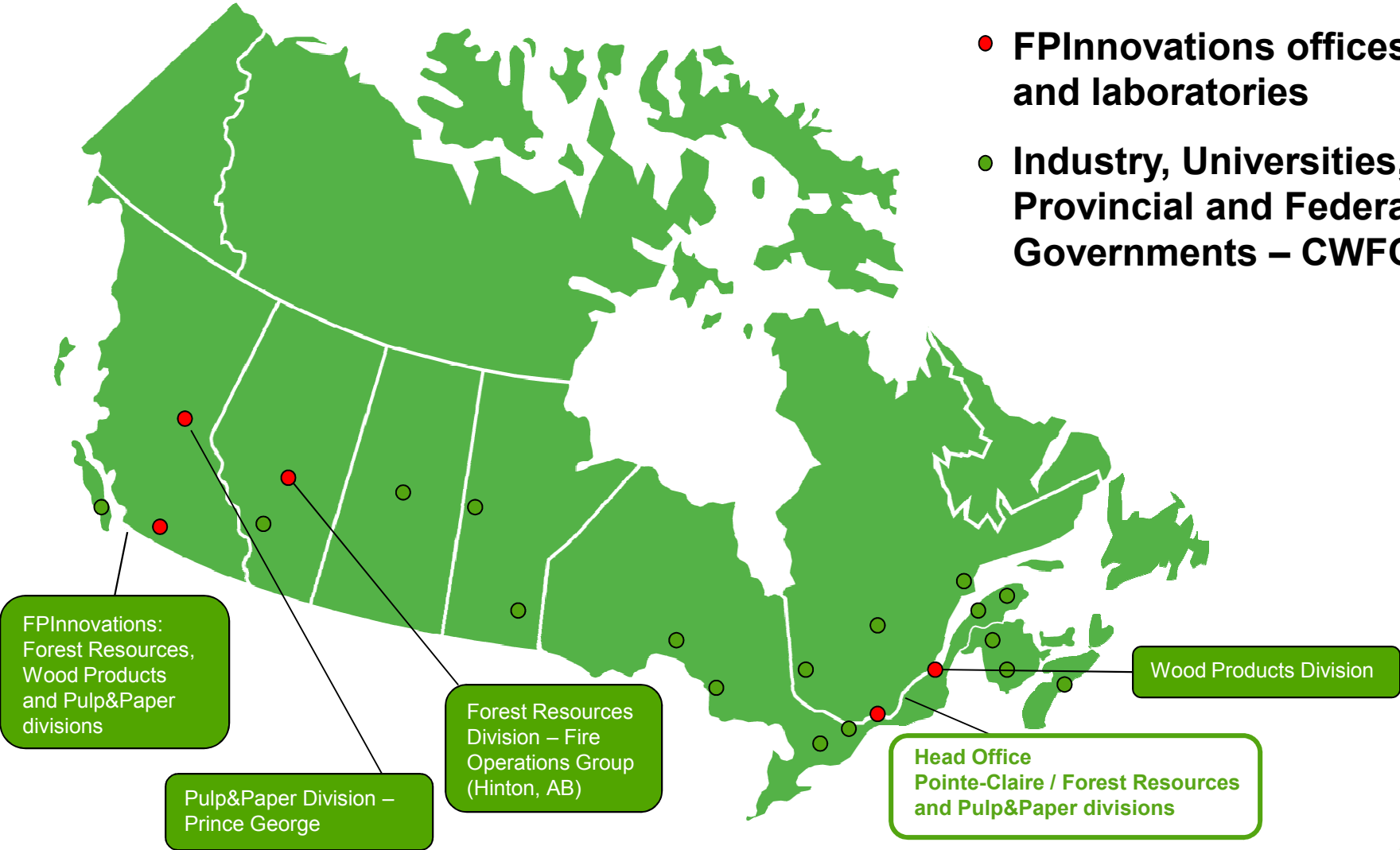
Paprican – Pulp and Paper Research Institute of Canada

Canadian Wood
Fibre Centre

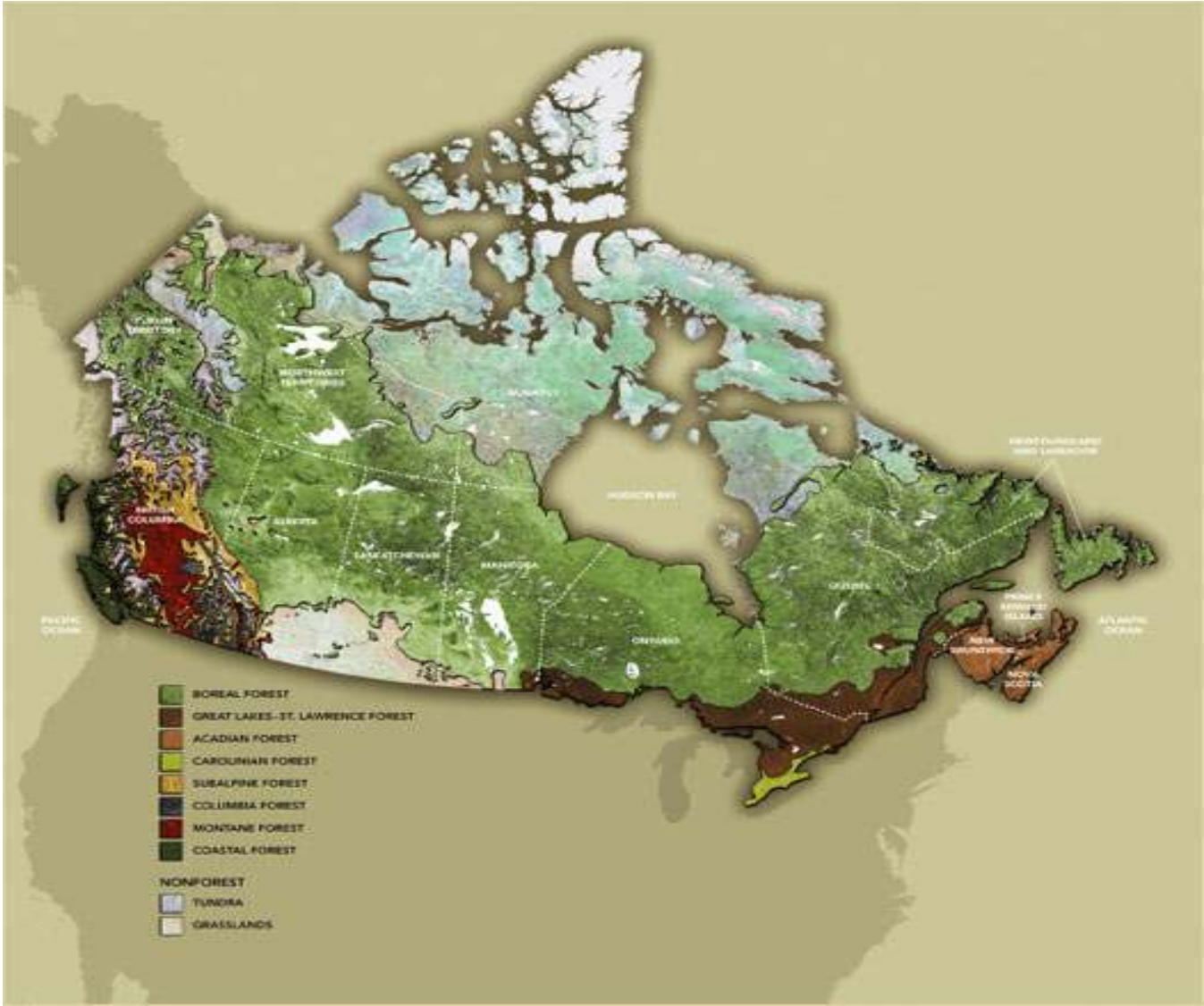
CWFC – Canadian Wood Fibre Centre of the Canadian Forest Service (CFS) of Natural Resources Canada

Our offices and laboratories

- **FPInnovations offices and laboratories**
- **Industry, Universities, Provincial and Federal Governments – CWFC**



Canada's Forests



A Sustainable Foundation

More protected forest and more forest regeneration than any other country.

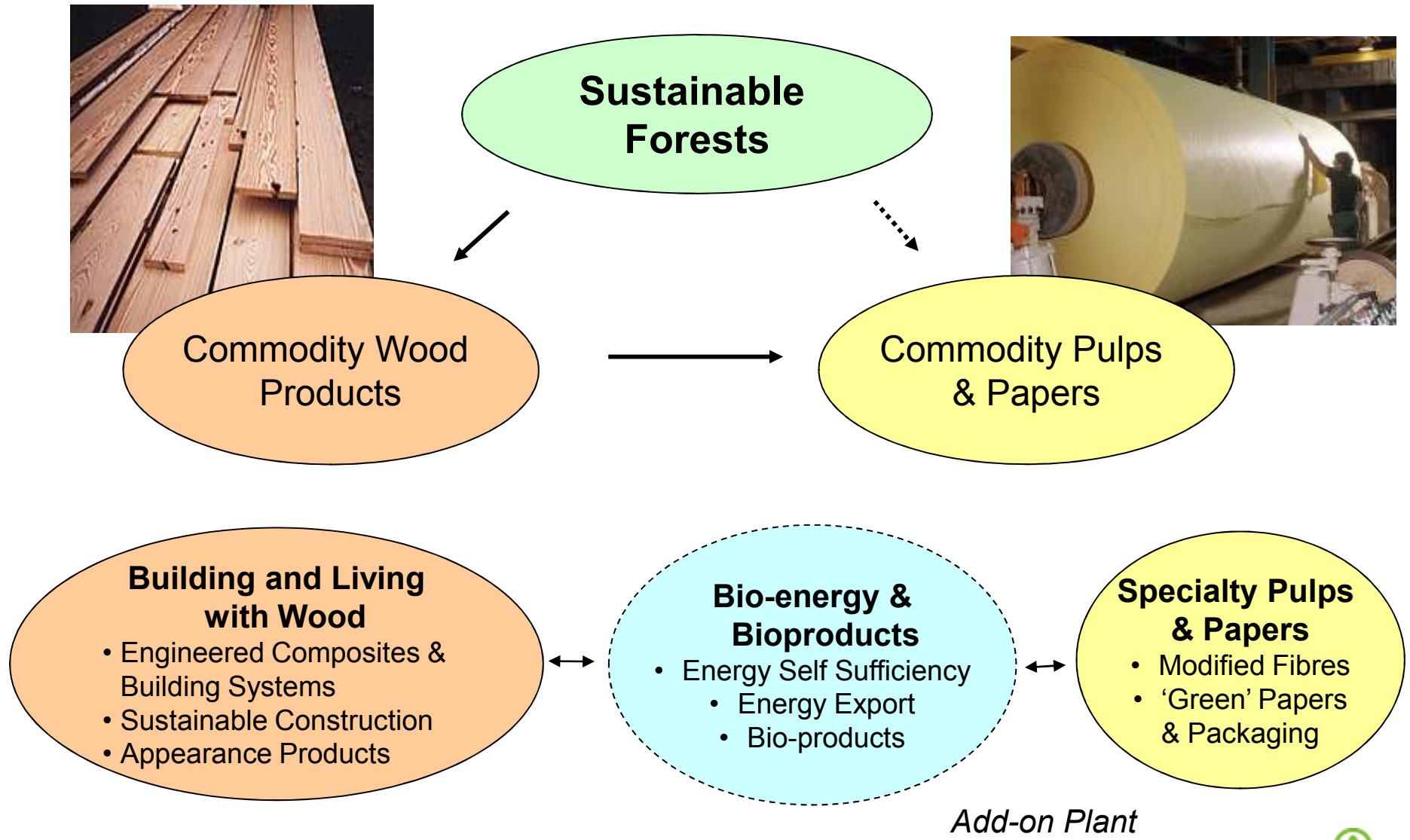
More certified forest than all other countries put together.



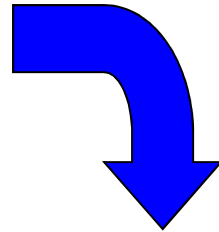
With some convincing to be done



The Forest Products Transformation



Building Materials Evolution



Better use of small and low grade logs (all species)

Veneer Strip Lumber



Oriented Strand Lumber



Green Building & Sustainable Construction



29 tonnes of CO₂ are captured in a typical house. Offsets five years of driving the family car.

Increased use of Wood



'Bio' Definitions

Bioproducts:

Bioenergy

Biochemicals (including Biofuels)

Biomaterials

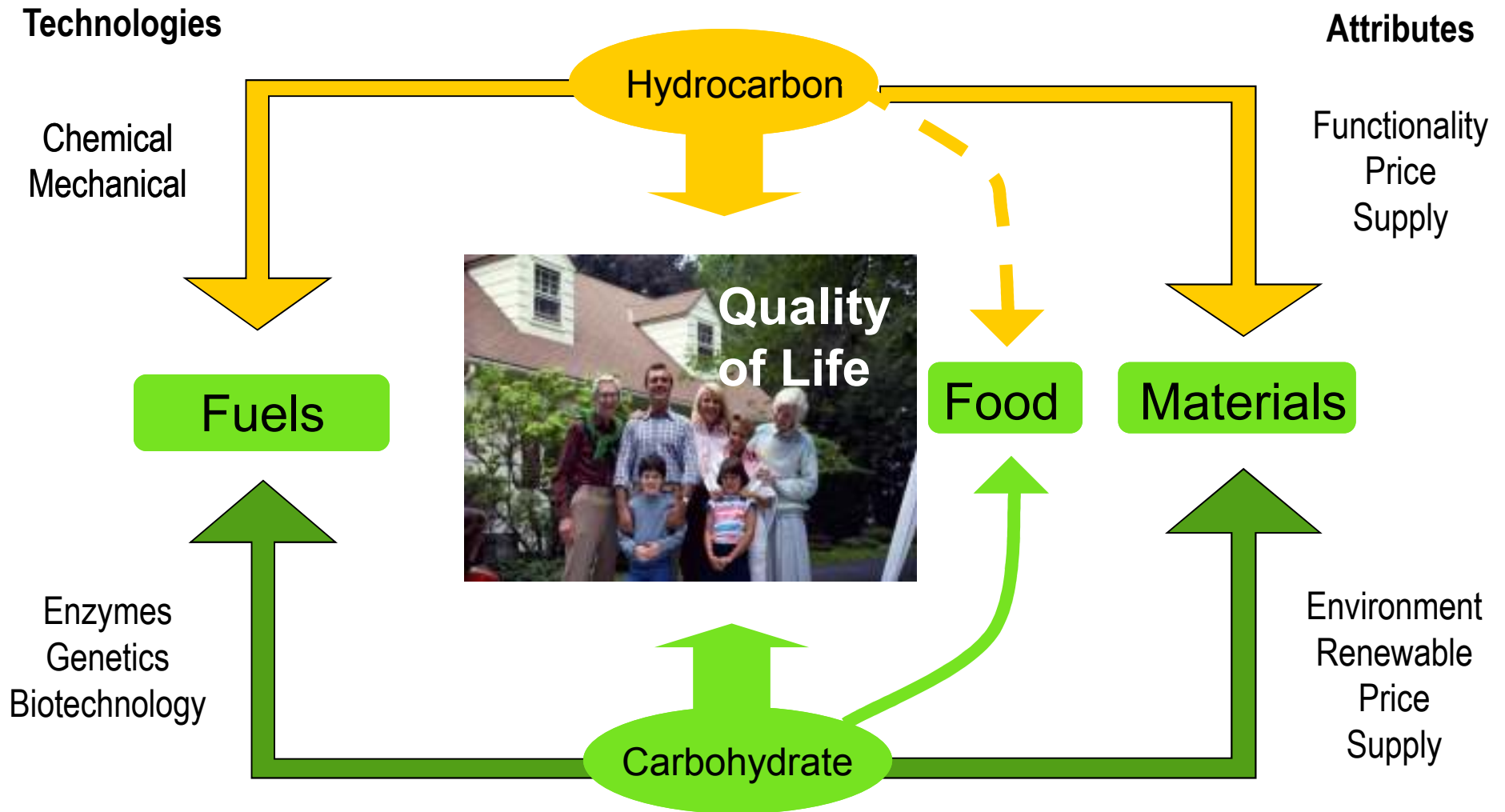
Energy Self Sufficiency

Triple Wins

- ✓ Economic
- ✓ Social
- ✓ Environmental



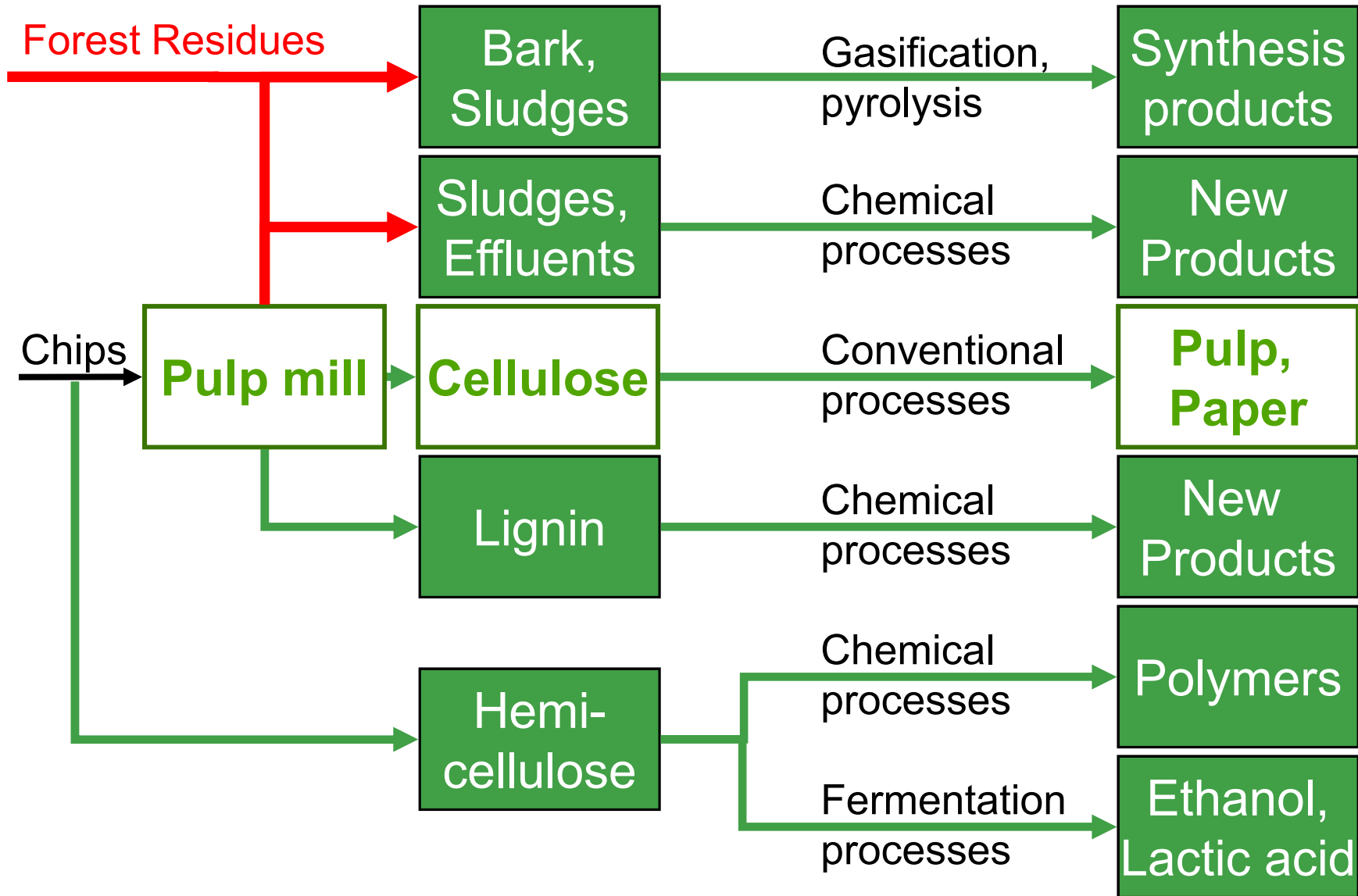
The Bioeconomy Window



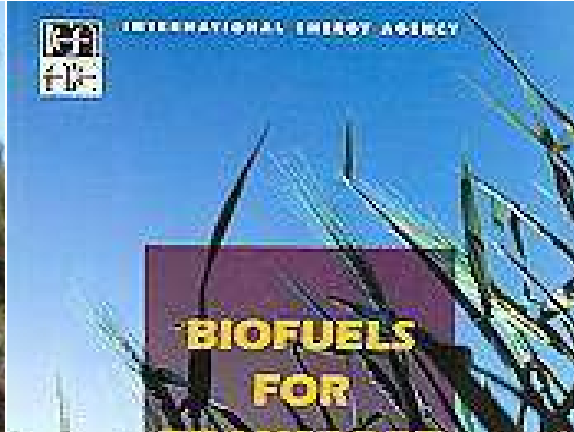
Forest Biorefinery



Potential Pathways



Biochemical Intermediates



Primary Objective:

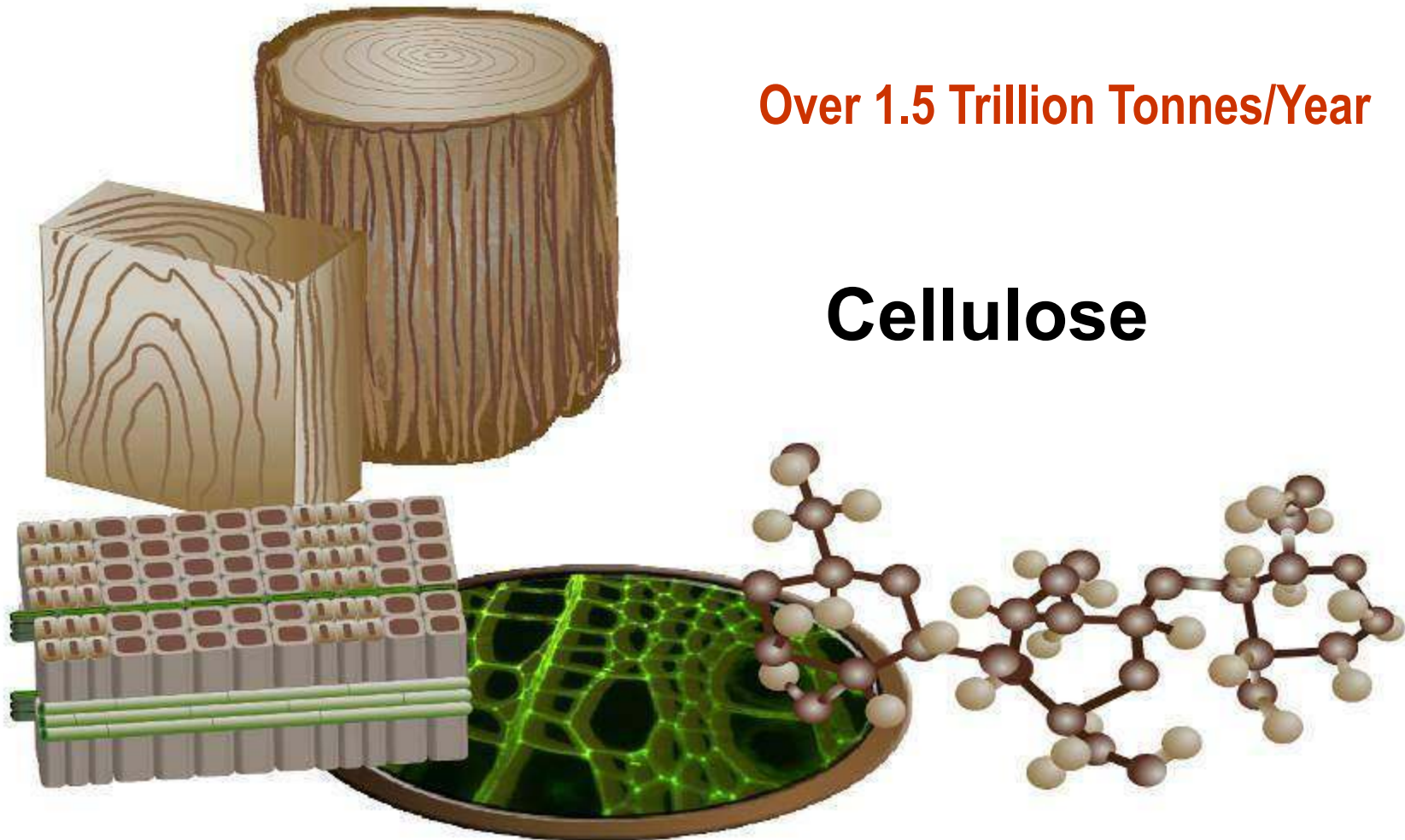
To create new long term value streams from forest origin residuals



Cellulose

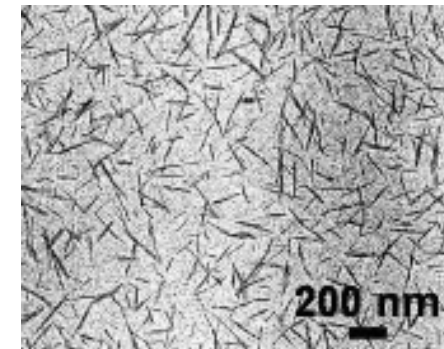
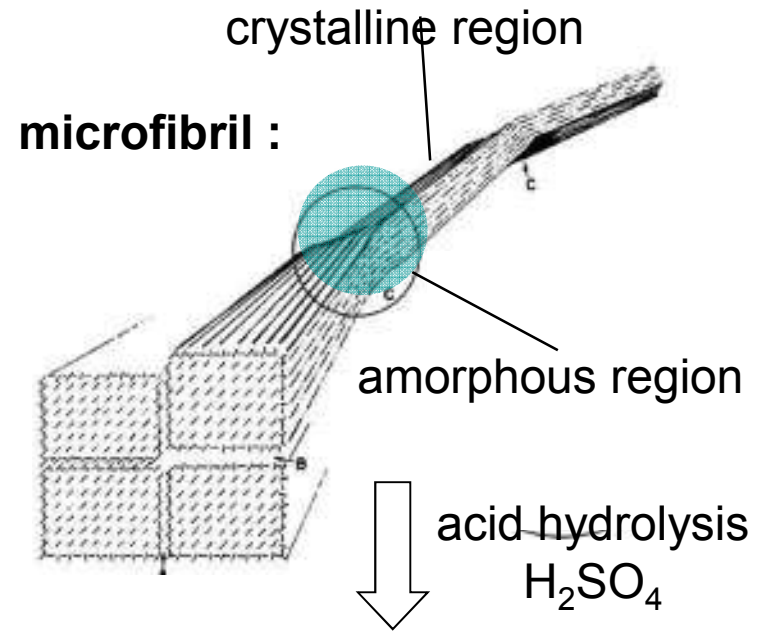
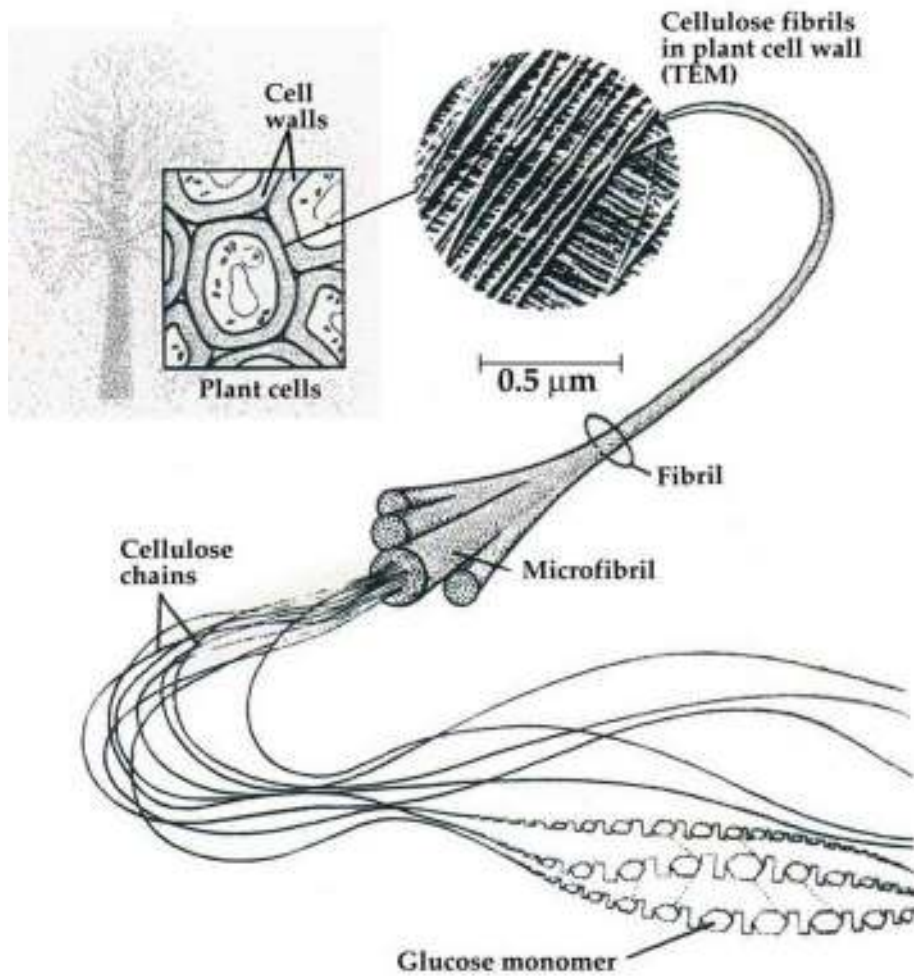
Over 1.5 Trillion Tonnes/Year

Cellulose



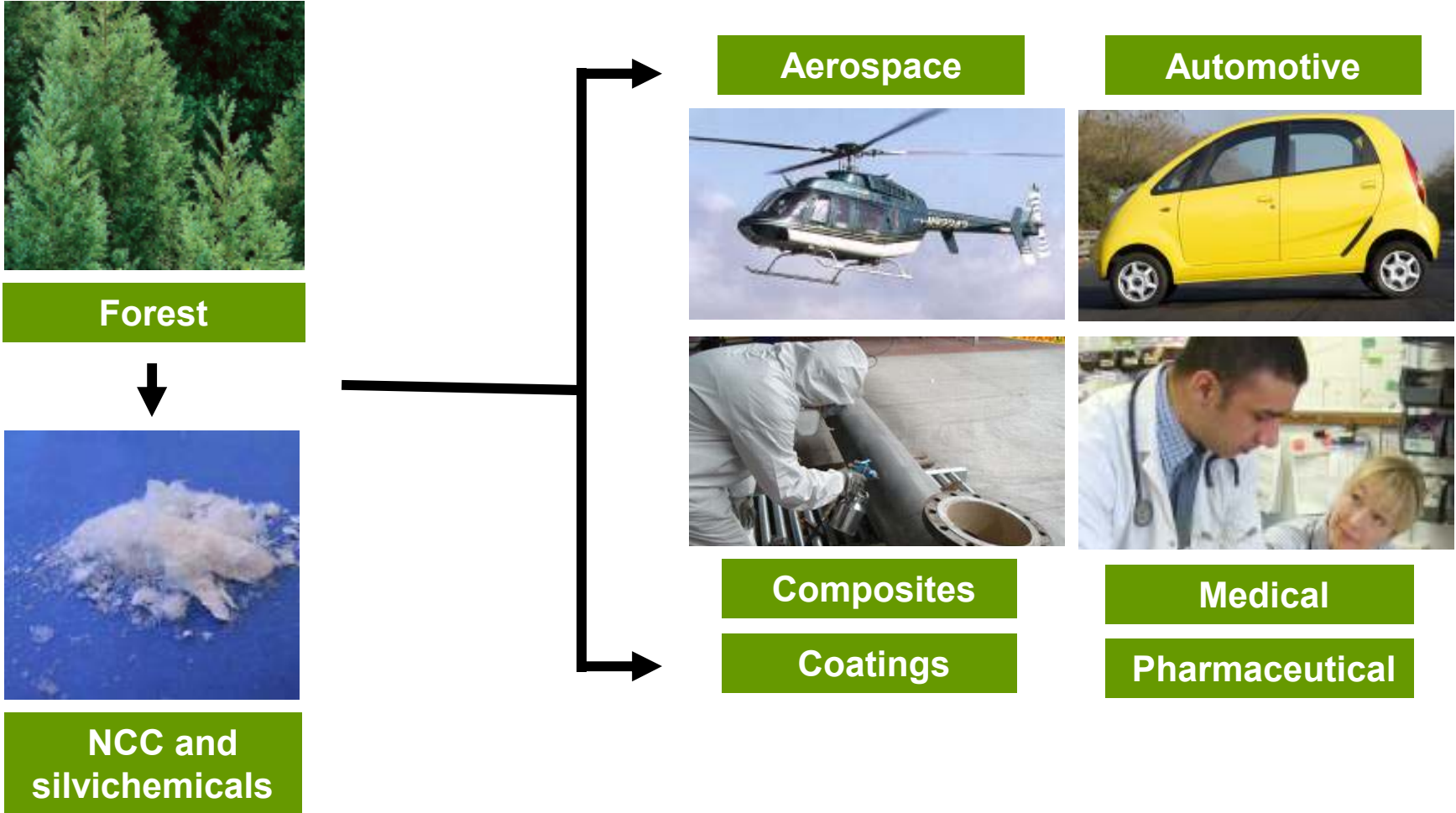
Focus is on new applications for cellulose

There a nanoproducs in that wood



TEM image of cotton nanocrystals

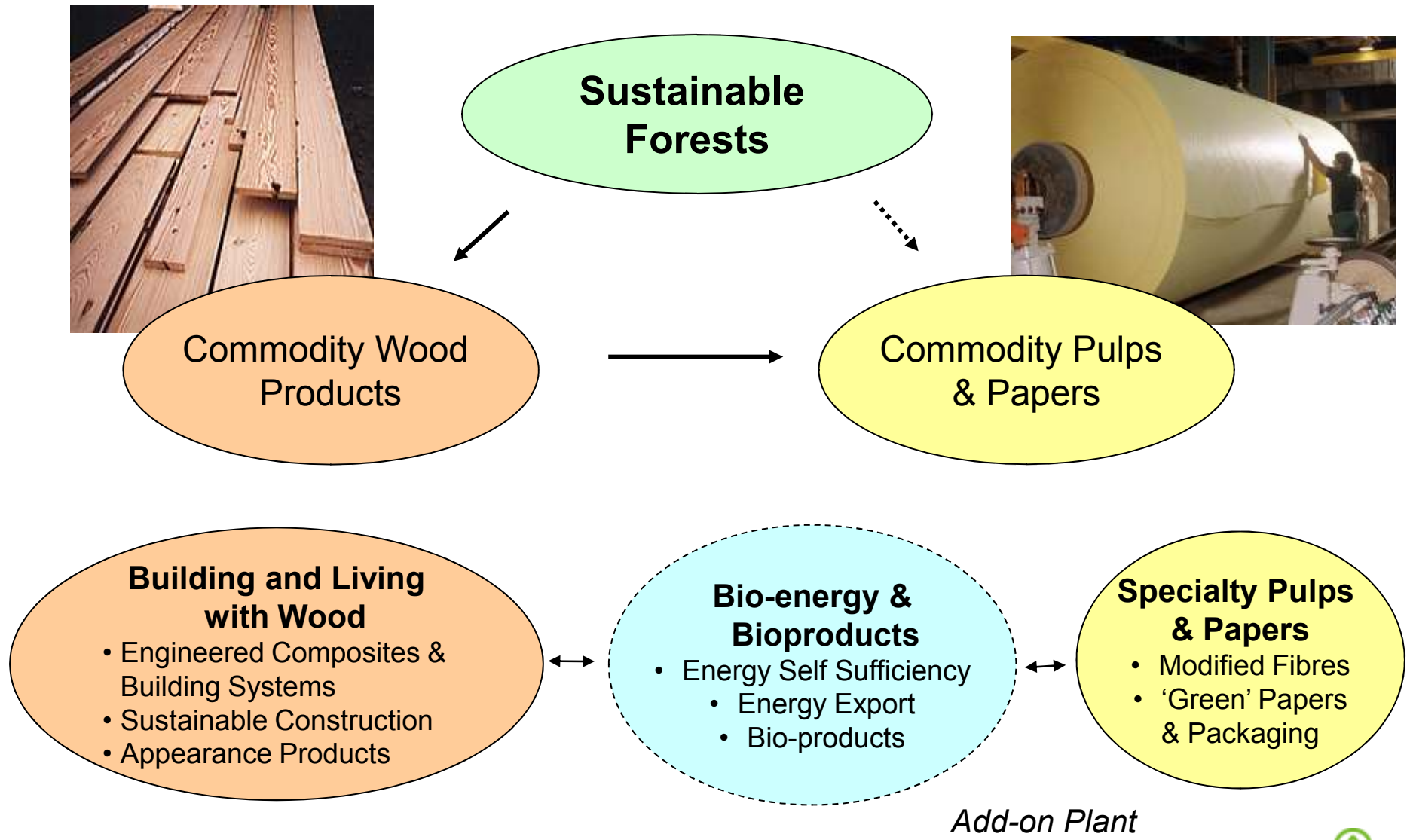
Forest Nanoproducts



Potential NCC applications



The Forest Products Transformation



Summary

- Sustainable Building and Living with Wood
- Energy self-sufficiency
- Biochemicals, Biofuels
- Biomaterials from Cellulose

Wood is moving the future

