

# Biomass 2010

## Fuelling the Future

coillte

FORESTRY ■ PANEL PRODUCTS ■ LAND MANAGEMENT ■ ENERGY



**Bill Stanley**  
**Director, Biomass Energy**

- 
1. Supply Overview
    - Conventional sources
    - Non Conventional sources
  2. Supply Demand Scenarios
  3. Supply Insights
  4. Implications of the Supply Forecast
  5. Coillte's Biomass Activities
-

# 1. Supply Overview



- Conventional supply sources
  - Coillte pulpwood
  - Private sector pulpwood
  - Sawmill Co-products
- Non Conventional Supply sources
  - Forest residues
  - Short rotation forestry
  - Short rotation energy crops
  - Post consumer wood
  - Imported biomass fuels



# 1. Supply Overview

## Conventional Supply Sources

coillte



### Key characteristics:

- Account for almost 100% of biomass fibre currently utilised => have a significant role to play in the development of a commercial biomass energy sector
- 3 sources are largely substitutable and therefore must be considered as a single resource pool
- Sawmill co-products are ultimately derived from the roundwood resource
- Coillte currently accounts for c. 75% of pulpwood produced and >80% of total roundwood
- AKA virgin wood fibre

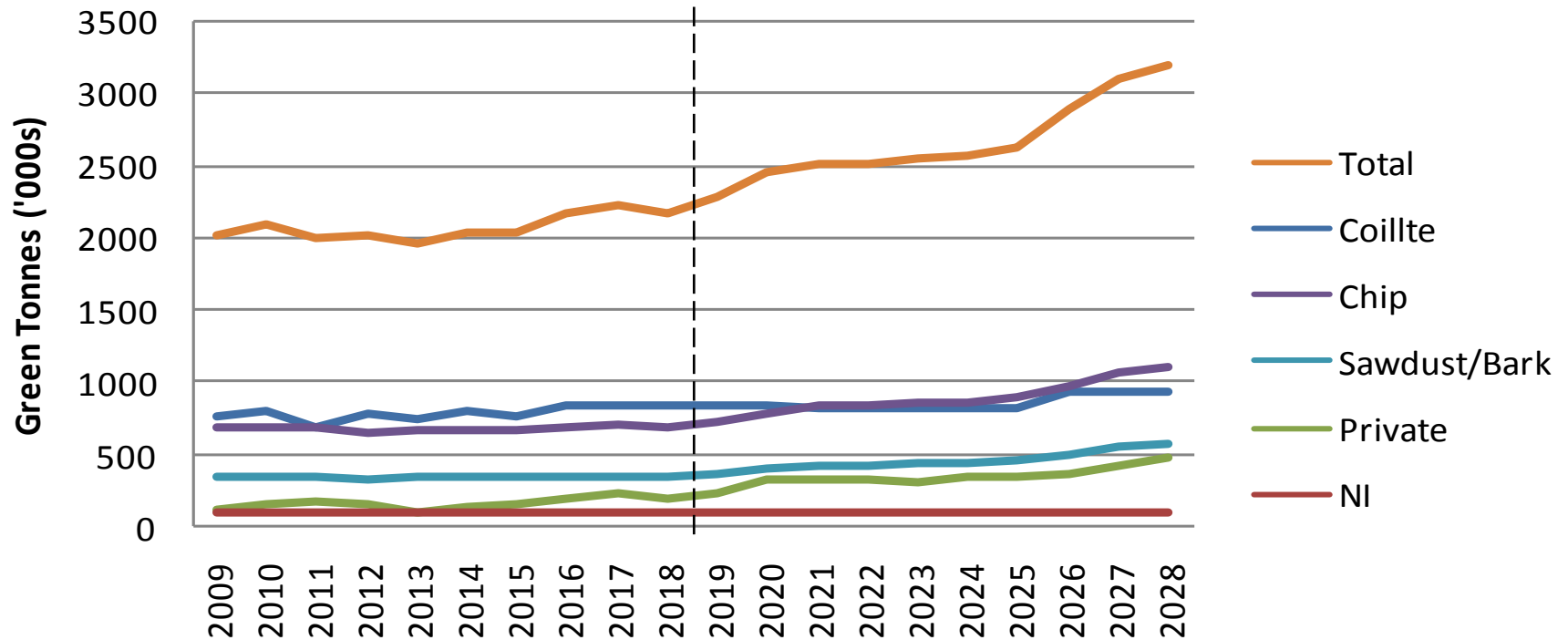
ENTERPRISE

# 1. Supply Overview

## Conventional Supply Sources

### High Level Forecast

### Conventional Biomass Supply Forecast



# 1. Supply Overview

## Conventional Supply Sources



- Coillte pulpwood
  - Annual pulpwood supply is forecast to remain steady at 0.8 – 0.9M green tonnes to 2025
- Private sector pulpwood
  - Private sector pulpwood **at 65% mobilisation** is forecast to rise from 0.15M to 0.25M green tonnes between 2010 and 2019, then to rise from 0.33M to 0.48M green tonnes from 2020 to 2028
  - NIFS pulpwood supply is forecast flat at 0.1M t
- Sawmill Co-Products
  - Total co-products are forecast to remain steady at c. 1.0M green tonnes to 2019, then rise from 1.15M to 1.68M green tonnes from 2020 to 2028 based on an increase of roundwood from the private sector

# 1. Supply Overview

## Conventional Supply Sources



- Private sector pulpwood
  - Mobilisation of this resource is a function of physical accessibility, economies of scale, price of sawnwood, and non commercial interests
  - According to UNECE/FAO: mobilisation rates for privately owned forests range from 44% in the UK to 70% in Finland
  - Trends have shown that private pulpwood will only come to the market in significant volumes when sawnwood prices are high

**The critical determinant of growth in biomass supply is the mobilisation rate of the private sector fibre resource**

# 1. Supply Overview

## Non Conventional Supply Sources

coillte



- Forest Residues:
  - Coillte trials estimate up to 80 green tonnes/ha is recoverable on approximately 35% of harvest sites giving a potential 150 - 200k green tonnes
  - There remains a number of economic and infrastructure barriers
- Short Rotation Forestry / Short Rotation Energy Crops
  - SRF has 8 – 20 yr harvest rotation
  - SRF is not currently an approved silvicultural system for forestry grant purposes
  - SRC has a 1 – 3 year rotation
  - Approximately 3,000ha SRC established
  - SRC is the only woody biomass that can be significantly increased in a short period of time, with the right incentives

ENTERPRISE

# 1. Supply Overview

## Non Conventional Supply Sources

coillte



- Post Consumer Recovered Wood:
  - According to EPA >95% is already recovered therefore potential incremental volume for biomass energy is very limited.
- Imported Biomass Fibre:
  - It is not clear if imports represent a commercially viable supply source
  - There are concerns over the security of supply, environmental certification, additional carbon emissions associated with long distance transport
  - Potential impact of phytosanitary restrictions

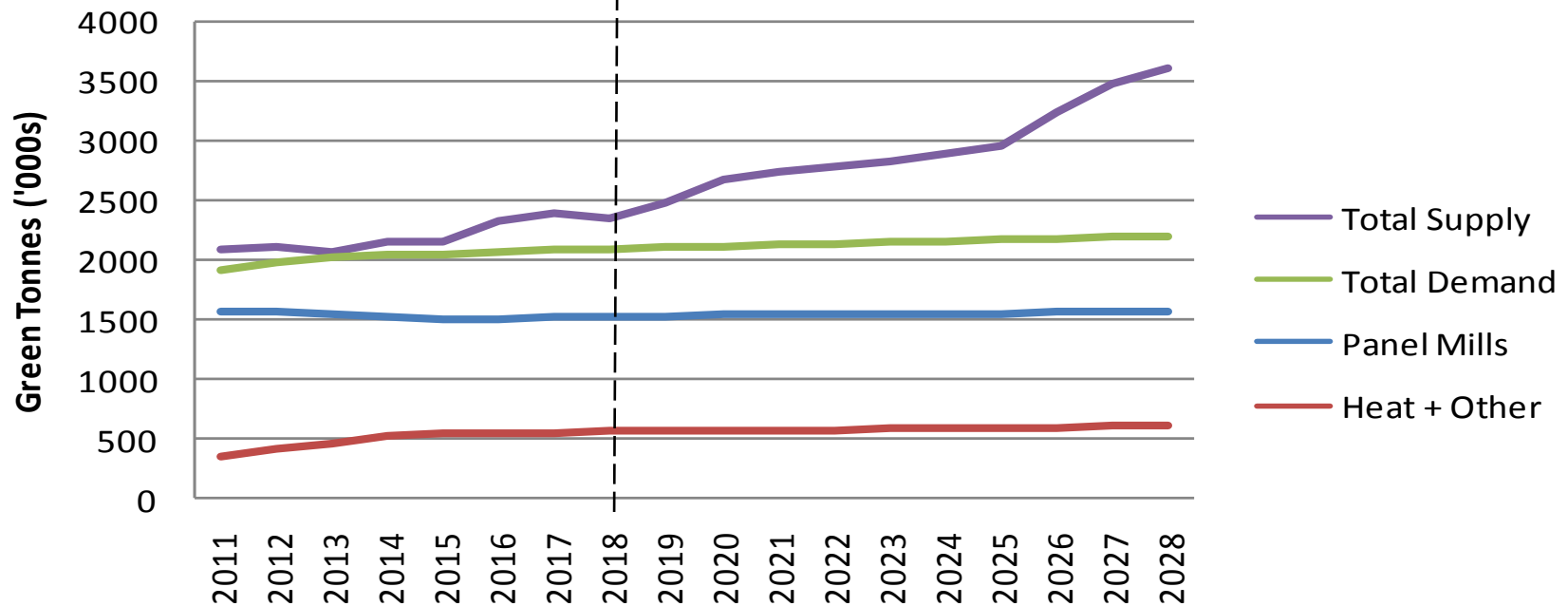


**There are significant economic, technology, or infrastructural barriers to the supply of non conventional biomass sources**

ENTERPRISE

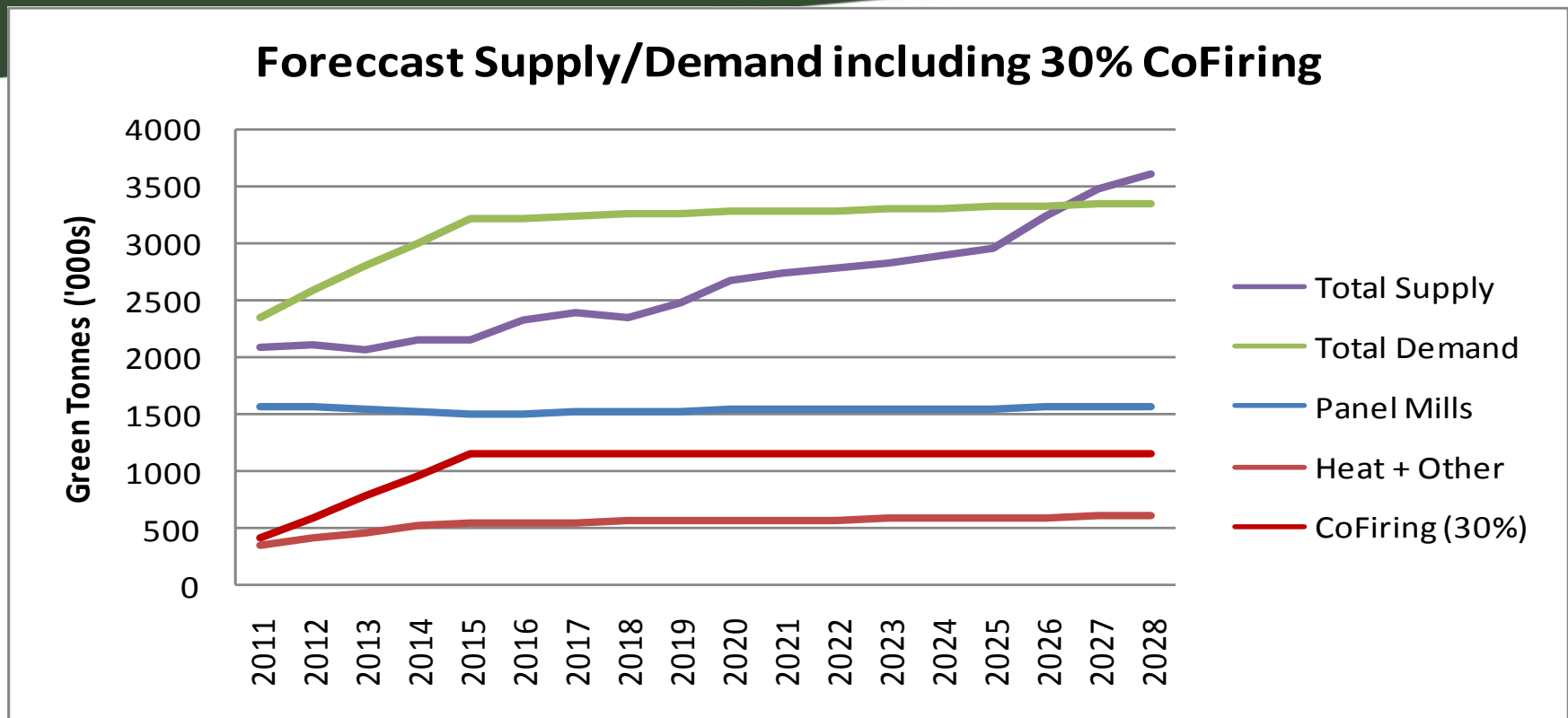
## 2. Supply Demand Scenarios Minimal Demand Growth

Forecast Supply Surplus



- Supply includes only 65% on private supply plus estimates for forest residues and energy crops
- Some modest demand growth but no new significant sources

## 2. Supply Demand Scenarios Impact of 30% CoFiring



- Supply includes only 65% on private supply but includes estimates for forest residues and energy crops
- Demand includes 30% co-firing of all peat power stations by 2015

# 3. Supply Insights

1. Conventional biomass supply is at best a limited resource and at worst a scarce resource
2. There are non conventional biomass sources that have supply potential, but they all require some “unlocking”
3. Growth in biomass supply is very limited until 2018/19
4. Growth in conventional biomass supply is almost totally dependent on the mobilisation of the private sector material
5. There are a number potential developments on the demand side, particularly co-firing and biomass exports, which would render all surplus forecasts irrelevant

# 4. Supply Forecast Implications

1. Supply side developments must focus on maximising
  - The mobilisation of the private sector resource and;
  - Unlocking the non conventional supply sources.
2. It is critical that this scarce resource is utilised in a way that:
  - maximises the value added
  - or maximises energy efficiency
3. As the global biomass market develops and to prevent the flight of biomass overseas, incentive mechanisms must be competitive with neighbouring countries

# 5. Coillte's Biomass Activities



- Coillte has a critical role to play in the development of commercial and industrial biomass initiatives by providing:
  - Supply chain infrastructure
  - Security of supply
- Coillte is both a producer and consumer of biomass fibre
- Following extensive research to determine the scale and nature of the biomass business opportunity Coillte identified that security of supply and access to turnkey solutions are key requirements of industrial scale energy users
- We went to the market to find the best companies to compliment our experience of managing the timber supply chain in Ireland.

# 5. Coillte's Biomass Activities



- Coillte has recently concluded an agreement with Sisk and CES Energy to deliver flexible renewable energy solutions to Irish industry
- Sisk and CES bring the engineering and technological abilities to design and deliver the generating infrastructure to compliment Coillte's management and innovation of the fuel supply chain
- Solutions will include design, construction, procurement, operation and maintenance, and fuel supply management and logistics
- The partnership will offer ownership and funding options through the use of special purpose Energy Supply Companies (ESCos).