

Wood fuel

A key renewable energy feedstock

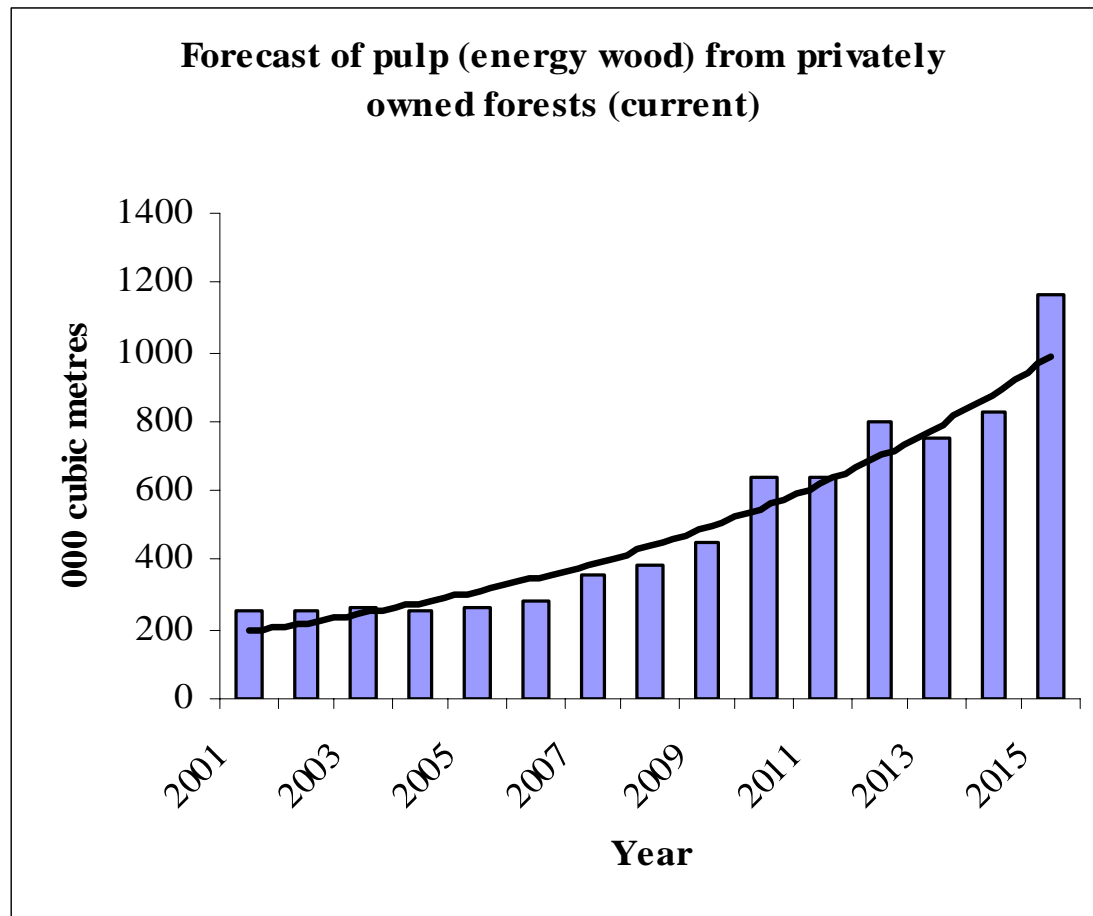
Renewable energy summit 2009

Dr Eugene Hendrick
COFORD

Forest wood fuel – why?

- **Renewable - from sustainably managed forests**
- **Greenhouse gas emissions savings high – especially in efficient heating**
- **No technology barriers – in practice at scale**
- **Significant level of ongoing technology development**
- **Excellent fit with management and age structure of Irish plantations – material is out there and growing**

Rapid growth in energy wood assortment in privately owned forests – (currently being updated)



The wood fuel resource – Ireland's forests

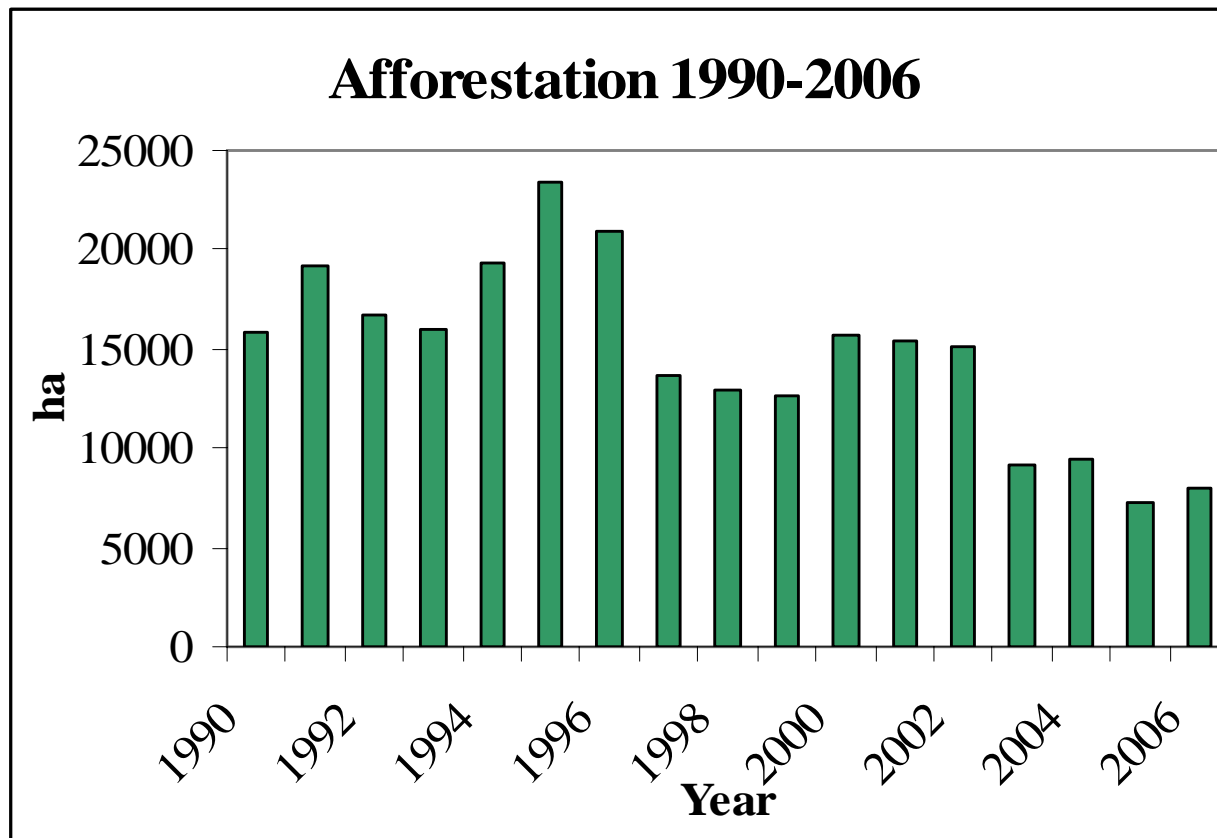
000 ha

Public (Coillte) 397 (57%)

Private 300 (43%)

Afforestation since 1990 250 (35%)

Afforestation from 1990 to present – cumulative ca 250,000 ha



Roundwood harvest (2007)

000 cubic metres

Public (Coillte)

2556

Private

390

Total

2946

Energy use of woodfuels (2007)

000 cubic metres

| | |
|---|------------|
| <i>Fuelwood (forests)</i> | <i>32</i> |
| <i>Short rotation coppice (SRC)</i> | <i>4</i> |
| <i>Energy gen in processing sector (residues)</i> | <i>286</i> |
| <i>Wood residues used for domestic energy</i> | <i>5</i> |
| <i>(Post consumer recovered wood (k t)</i> | <i>53)</i> |

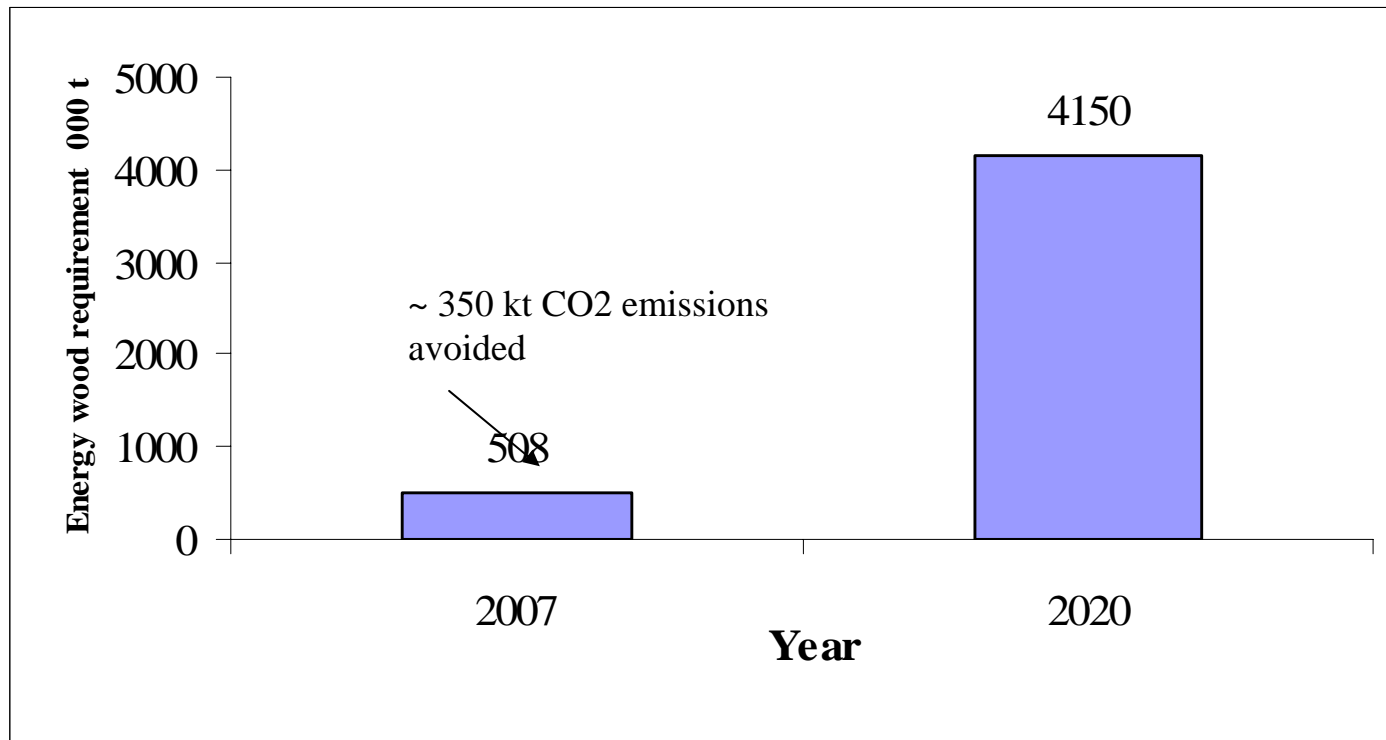
End use application woodfuels (2007)

| Sector/mode | Output TJ |
|------------------------------|-----------|
| Forest products process heat | 3,868 |
| Forest products electricity | 51 |
| Domestic heating | 784 |
| Commercial heating | 124 |
| Total | 4,776 |

Biomass-related renewable energy targets

- ***30% co-firing with biomass in peat fuelled power stations by 2015***
- ***33% electricity production from renewable sources by 2020***
- ***12% of national heat provision through renewable sources by 2020***
- ***10% of transport fuel to consist of biofuel by 2020***

***Energy wood use 2007, ca 500 k t
(includes pcrw) – supply chains in
place – but need development/further
research to address supply gap***



Estimated wood fuel requirements RE 2020 targets

| <i>Process</i> | <i>Target</i> | <i>tonnes/year</i> | <i>Potential CO₂ emission saving</i> |
|-------------------------|---------------------|--------------------|---|
| <i>Heat</i> | | | |
| 2020 | 12% | 2,500,000 | 1,700,000 |
| <i>Co-firing</i> | | | |
| 2020 | 30% | 800,000 | 800,000 |
| <i>CHP</i> | | | |
| 2020 | biomass fuelled CHP | 850,000 | 750,000 |
| Total | | 4,150,000 | 3,250,000 |

Getting to wood energy targets – how

Now

- ***Infrastructure: forest roads/need to continue Forest Service capital investment***
- ***Encourage large users into market – scale particularly CHP***
- ***Continue SEI/DCNR schemes ReHEAT, REFIT***
- ***Develop energy supply contracts with forest grower groups***
- ***Focused advocacy and demonstration on supply chains and costs by COFORD/Teagasc/Forest Service/SEI***

By end 2009/early 2010

***• Renewable Energy Development Group bioenergy
roadmap – DCENR/SEI***

***• Wood energy supply from forests to 2030 on a
subcounty basis - FORECAST project/COFORD
(first version now available)***

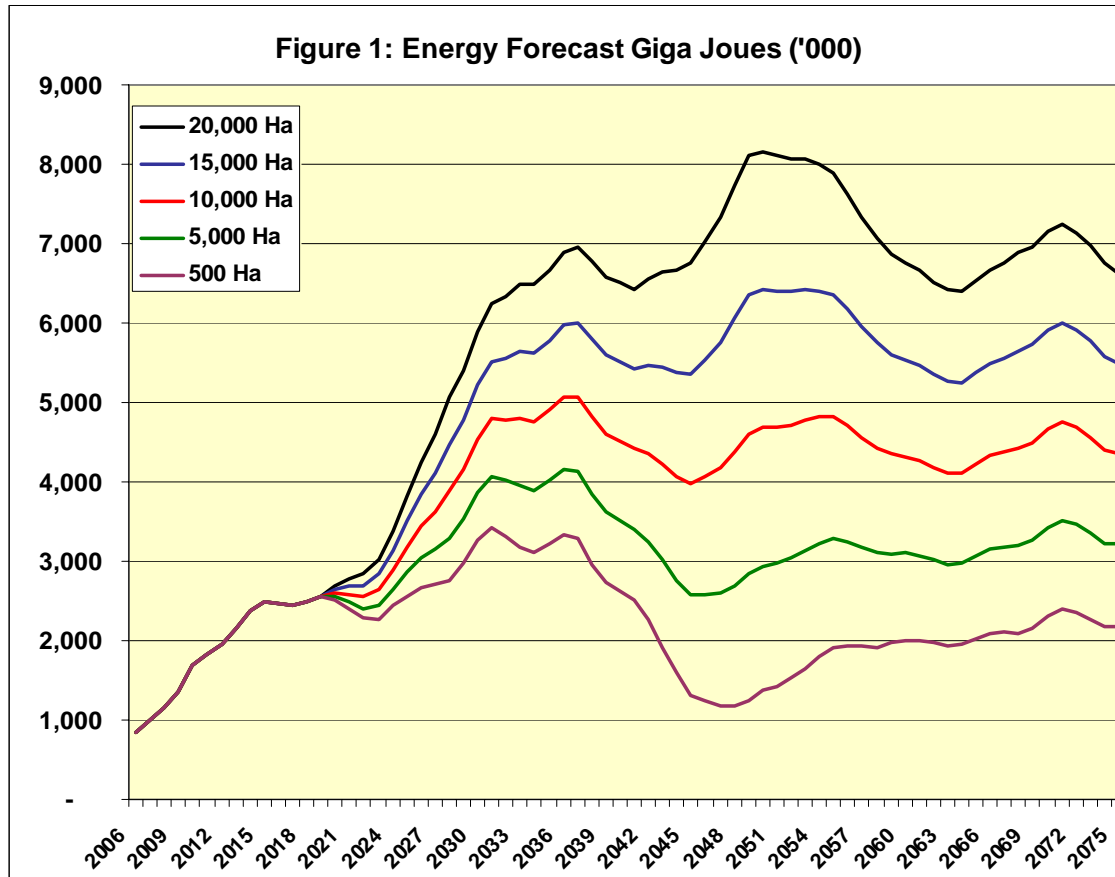
***• Wood fuel quality assurance scheme
SEI/COFORD/IrBEA***

• Carbon tax – heat market stimulus

Medium term

- ***Continued investment in afforestation (10-year lead-in time)***
- ***Role of Coillte - largest wood supplier and processor on island – product/energy mix***
- ***Cofiring v CHP v heat markets***
- ***Squeeze resource – residues – harvest more biomass –diversified market***
- ***Role of short rotation coppice – shorter lead-in time***
- ***Price – pass through of climate change benefits***

Need to sustain affor - get to 500,000 ha of forest established since 1990 –if not peak wood



RD and D/ Innovation

- *Wood energy assortment from thinning*
- *Development of drying and chipping models and systems*
- *Characterisation of resource quality*
- *Wood fibre from final forest harvest*
- *Integration of energy provision with processing sector of forest industry*
- *Enable higher reuse and recycling through heat treatment and acetylation of wood used outdoors – promote cascade use of wood products*
- *Capture more fibre from recycling – e.g. paper/board ...*

Good quality data needed to benchmark performance and policy analysis and development

SEI national data

***• Joint Wood Energy Enquiry/COFORD/SEI
<http://www.uncece.org/timber/mis/energy/JWEE.htm>***

Thank you for your attention

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Further information

www.woodenergy.ie