



Coordinating Regional Bioenergy Supply

By Lloyd McGinty



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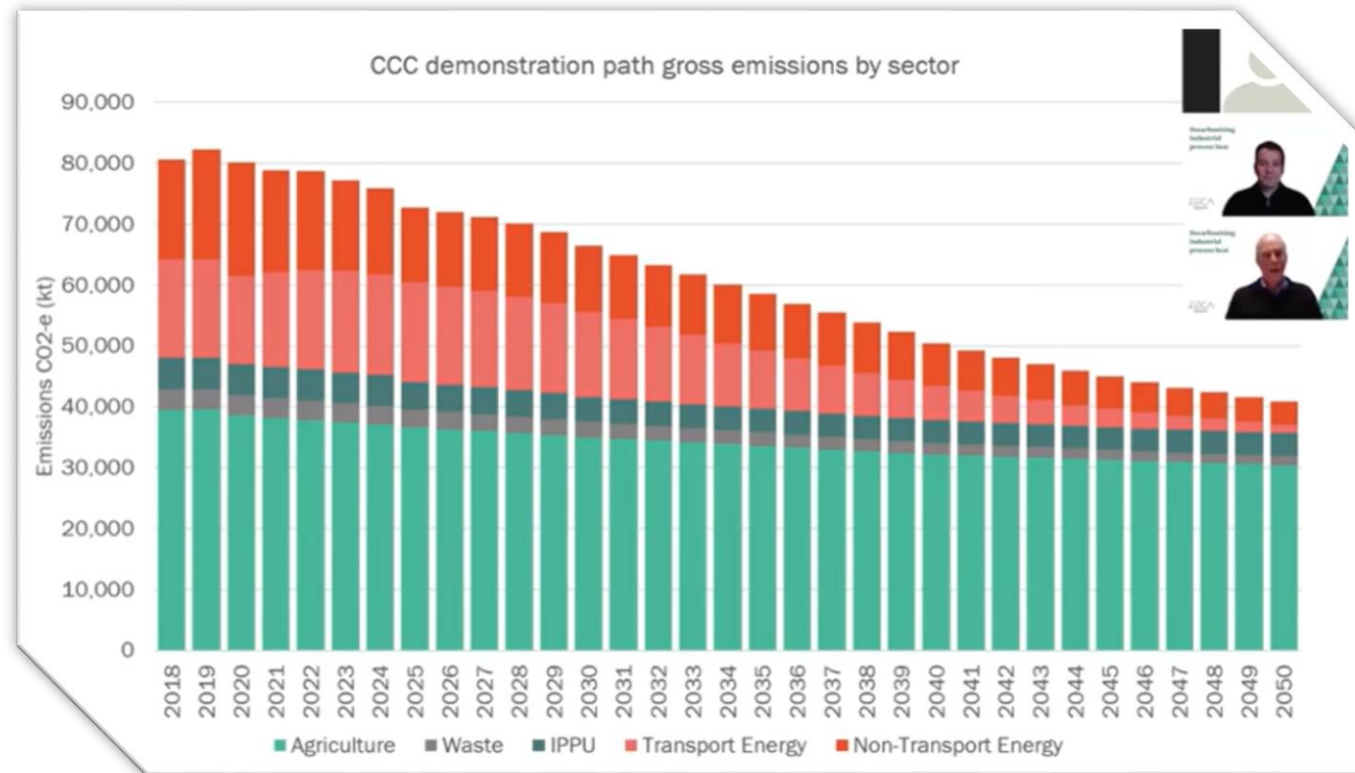


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The biomass big picture

CCC's emissions reduction pathway

- Process heat – 8MtCO₂/annum
- Electricity and bioenergy have a key role to play
- EECA GIDI Fund (\$69M)
 - 80MW new demand
- GIDI 2.0 (\$650M)
- Renewable fuel supply infrastructure



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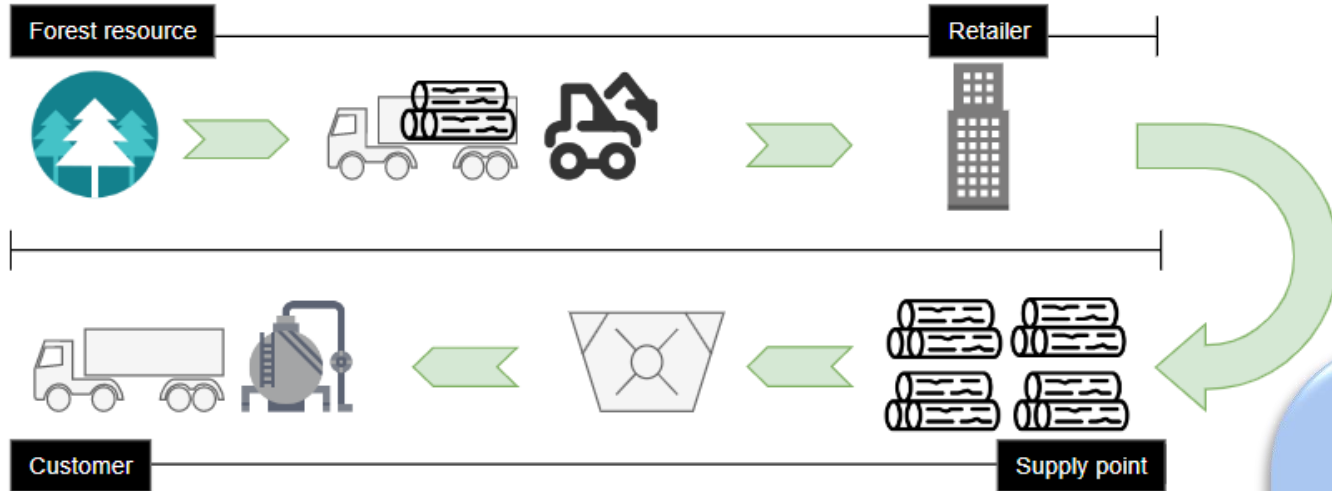


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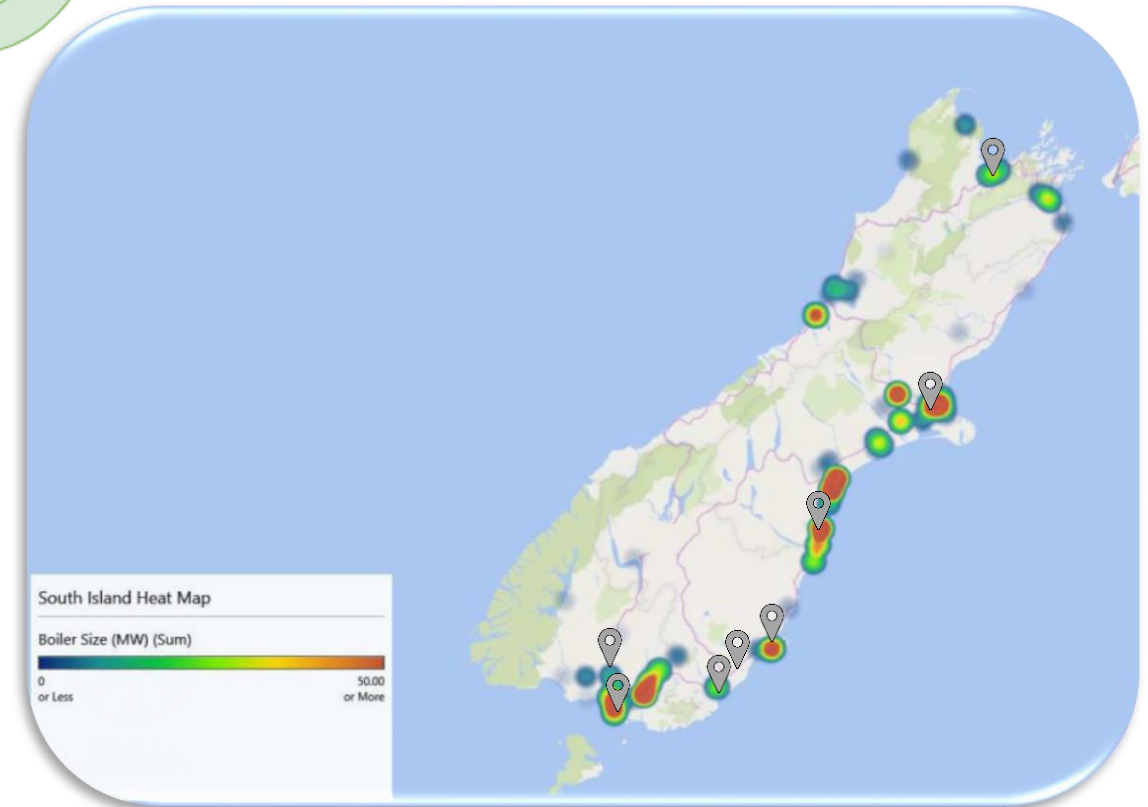


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A bioenergy supply chain



Source: DETA



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A coordinated supply chain

How can it work with multiple parties coordinating supply?

- Main producers of bioenergy are:
 - Forestry- residues, chip logs, billet and export logs
 - Sawmills- sawdust, bark, chip, peelings
 - Landfill – green waste, construction materials

What needs to be considered?

Why is this worth considering ?

What are the benefits and issues?



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Coordinated supply considerations?

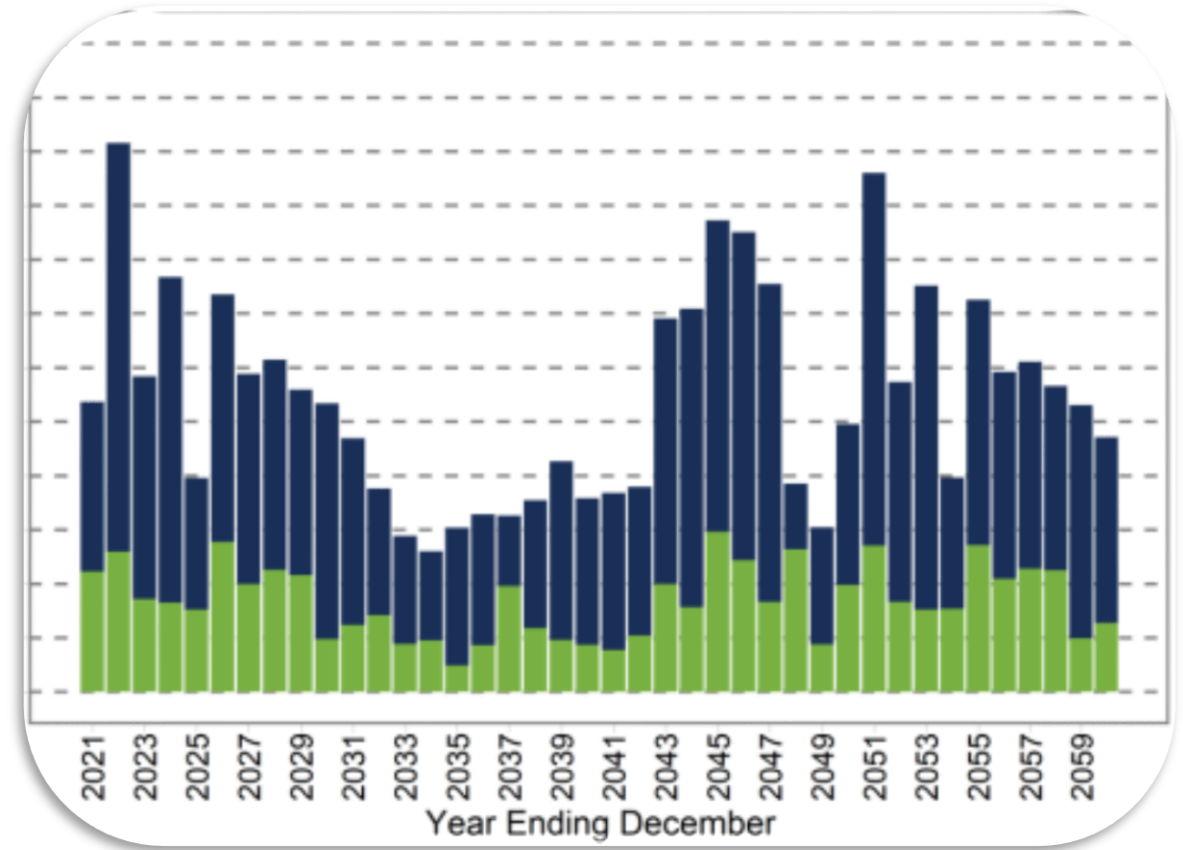
Understanding the resource

- Availability
- Properties targeted

Security of supply

What does the demand profile look like and when does it exceed availability?

- What are the options to increase supply?
- Where is the location of the demand?



Wood Availability Forecast data



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Coordinated supply considerations?

What type of equipment is required?

- Who is the intended end user?
- What type of product are you trying to produce?

Develop the supply chain

- From forest to furnace
- Understand the item costs (\$/t, \$/GJ)
- Develop a product cost (\$/GJ)

What is the value of the product

- What is the value of the product now and in the future?
- What impact does ETS pricing have on bioenergy pricing?



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Why coordinate supply?



The hooks

- Committed to supply
- Time and the unknown “GJ”

Further development

- Legal considerations
- Best structure
- Profit share

The benefits

- Confidence to supply larger energy users
- Value add to lower grade residues
- Diversification
- Increased volume from managed forests

“The science shows that when you increase the demand for bioenergy , you also contribute to better managed forests”

Canadian biomass magazine 2022



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Botnia Atlantica



- Similar in size and population- South Island
- More than 120 hubs scattered across the regions (>1ha in size)
- Three types of hubs
 - Satellite hub (10ha)
 - Close to forest and large
 - Roundwood storage
 - Feed-in hub
 - Size varies but close to end user
 - Bioenergy processing and storage
 - Buffer hub
 - Small and used to even out seasonal variation
 - Roundwood storage
- Distance from forest to hub
 - Finland- 20-50 km
 - Sweden- 100 km



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Botnia Atlantica



- Hubs are owned by forest companies and the hub is closed
- Some councils also operate hubs that are open to a number of users including
 - Forest owners
 - End users who own their own biomass
 - Contractors providing complementary services
- What can we learn from Sweden and Finland?



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Biohub.se

Long term supply chain options

- The importance of rail to creating long distant efficient supply for areas with excess supply
- Inter-island supply port to port is already happening for pellets so can it be utilised for biomass
 - Areas like the East Cape, Gisborne and Northland could create new bioenergy supply



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Thank you



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