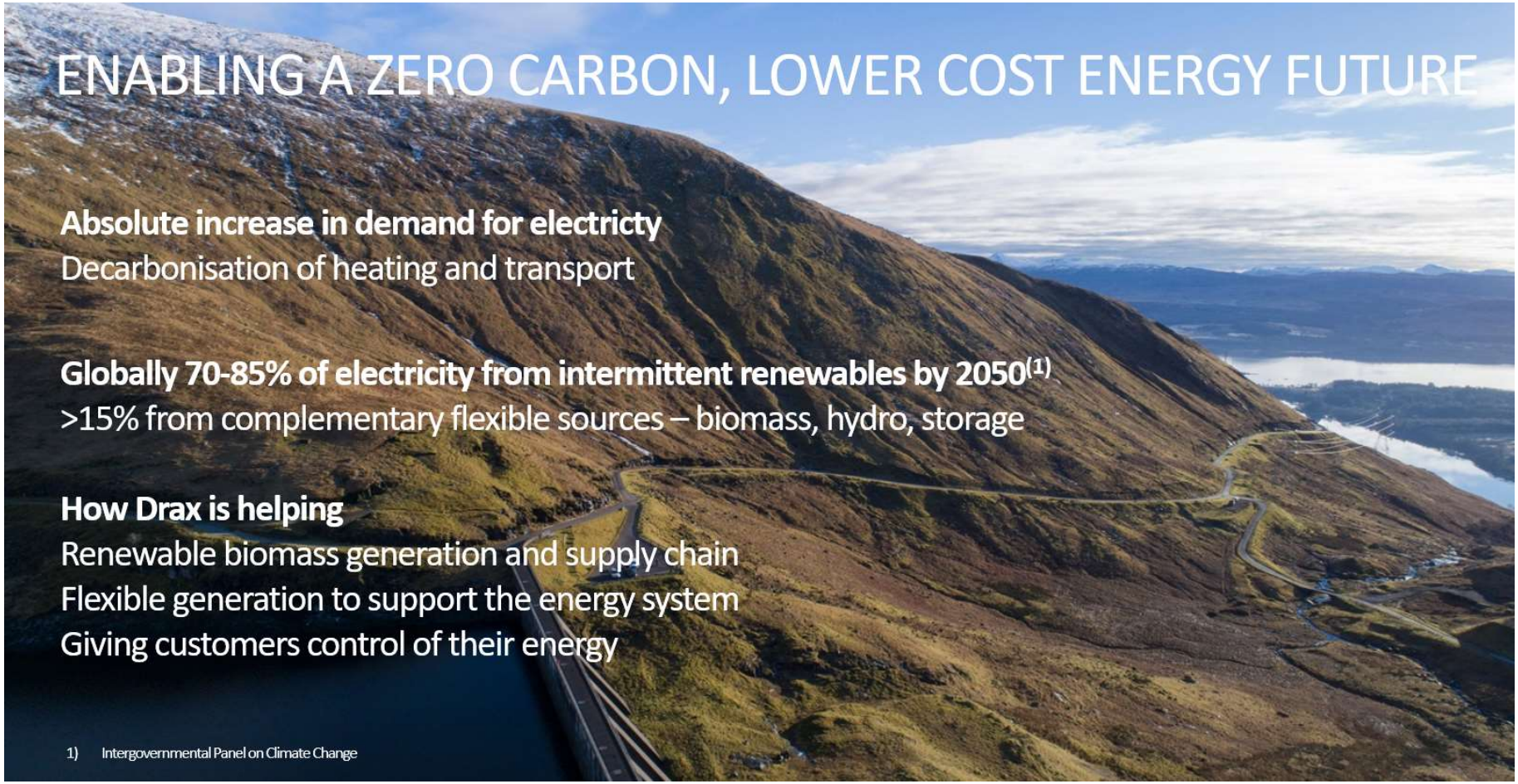
Drax Group
& Drax Biomass overview

Richard Peberdy VP Sustainability DBI

1st May 2019

Our Purpose:


ENABLING A ZERO CARBON, LOWER COST ENERGY FUTURE
Absolute increase in demand for electricty
Decarbonisation of heating and transport
Globally 70-85% of electricity from intermittent renewables by 2050(1)
>15% from complementary flexible sources – biomass, hydro, storage
How Drax is helping
Renewable biomass generation and supply chain
Flexible generation to support the energy system
Giving customers control of their energy
1) Intergovernmental Panel on Climate Change

Group overview

DRAX GROUP 2019
ENABLING A ZERO CARBON LOWER COST ENERGY FUTURE

UK's largest source of renewable generation
12% of UK's renewable power in 2018

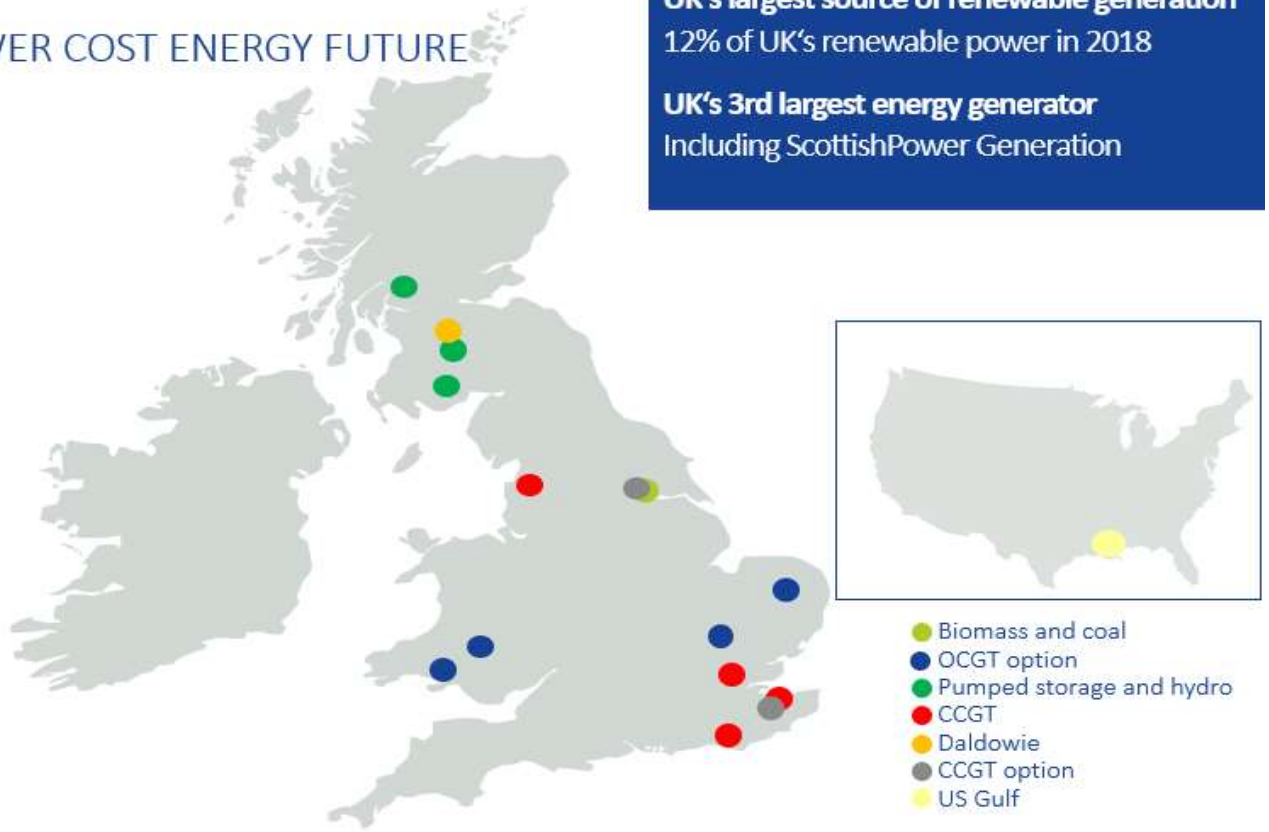
UK's 3rd largest energy generator
Including ScottishPower Generation

Multi-site, multi-technology portfolio
6.5GW capacity
- 2.6GW biomass
- 1.3GW coal
- 0.4GW pumped storage
- 0.1GW hydro
- 2.1GW CCGT

Development options
2 x 1.8GW coal to CCGT (Drax Power Station)
1.8GW CCGT (Damhead Creek)
4 x 0.3GW OCGT
Up to 0.4GW hydro expansion (Cruachan)

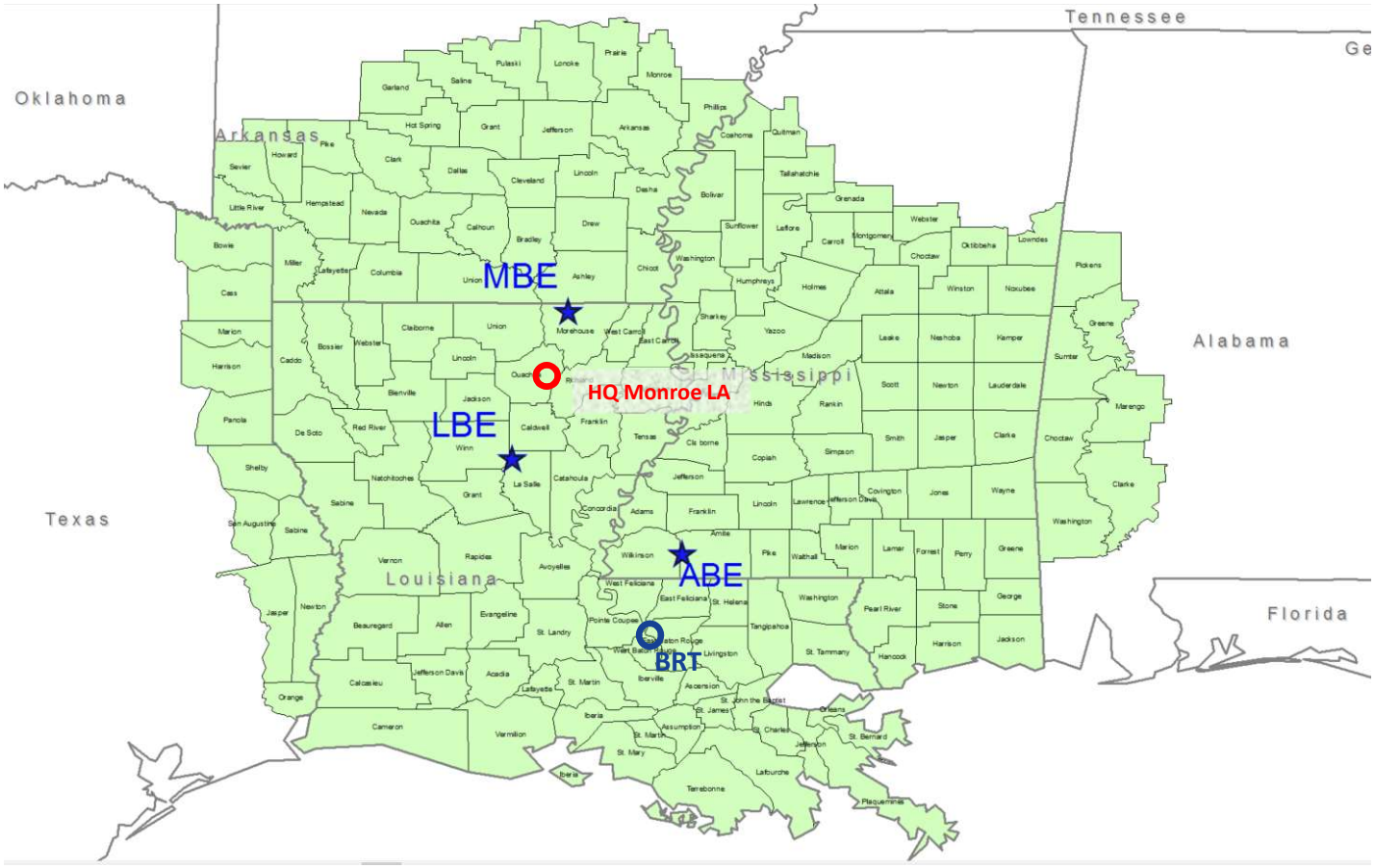
B2B Energy Supply
Leading challenger brands
- Haven Power / Opus Energy

US Gulf operations
1.5Mt pellet capacity
2.1Mt export facility



Drax Biomass Locations

Morehouse BioEnergy, LaSalle BioEnergy, Amite BioEnergy, Baton Rouge Transit.



From this year's Group annual report

PELLET PRODUCTION

TARGET GOOD QUALITY PELLETS AT LOWEST COST

Strong growth in output and earnings

64% increase in pellet output

10% reduction in pellet cost

LaSalle Bioenergy fully commissioned and performing well

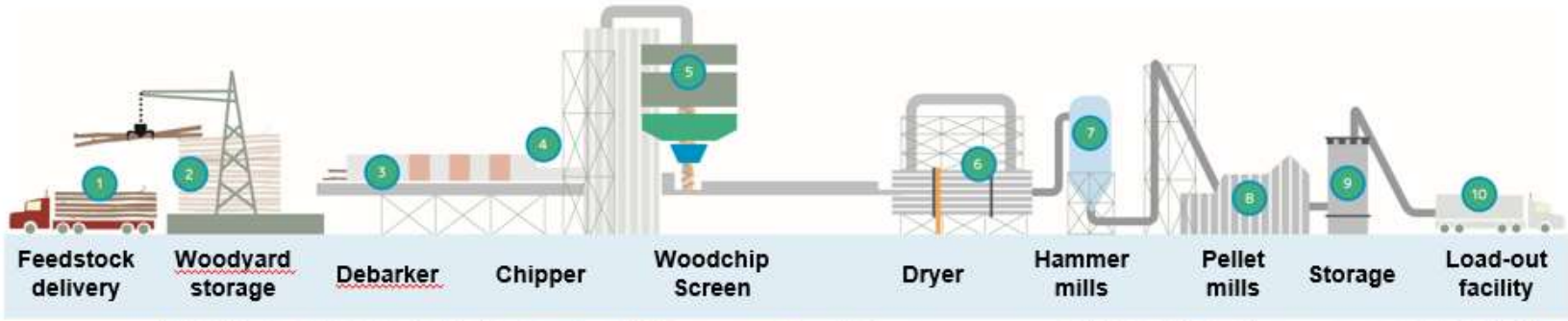
Relocation of administration from Atlanta to Monroe

Adjusted EBITDA
£21m
(2017: £6m)

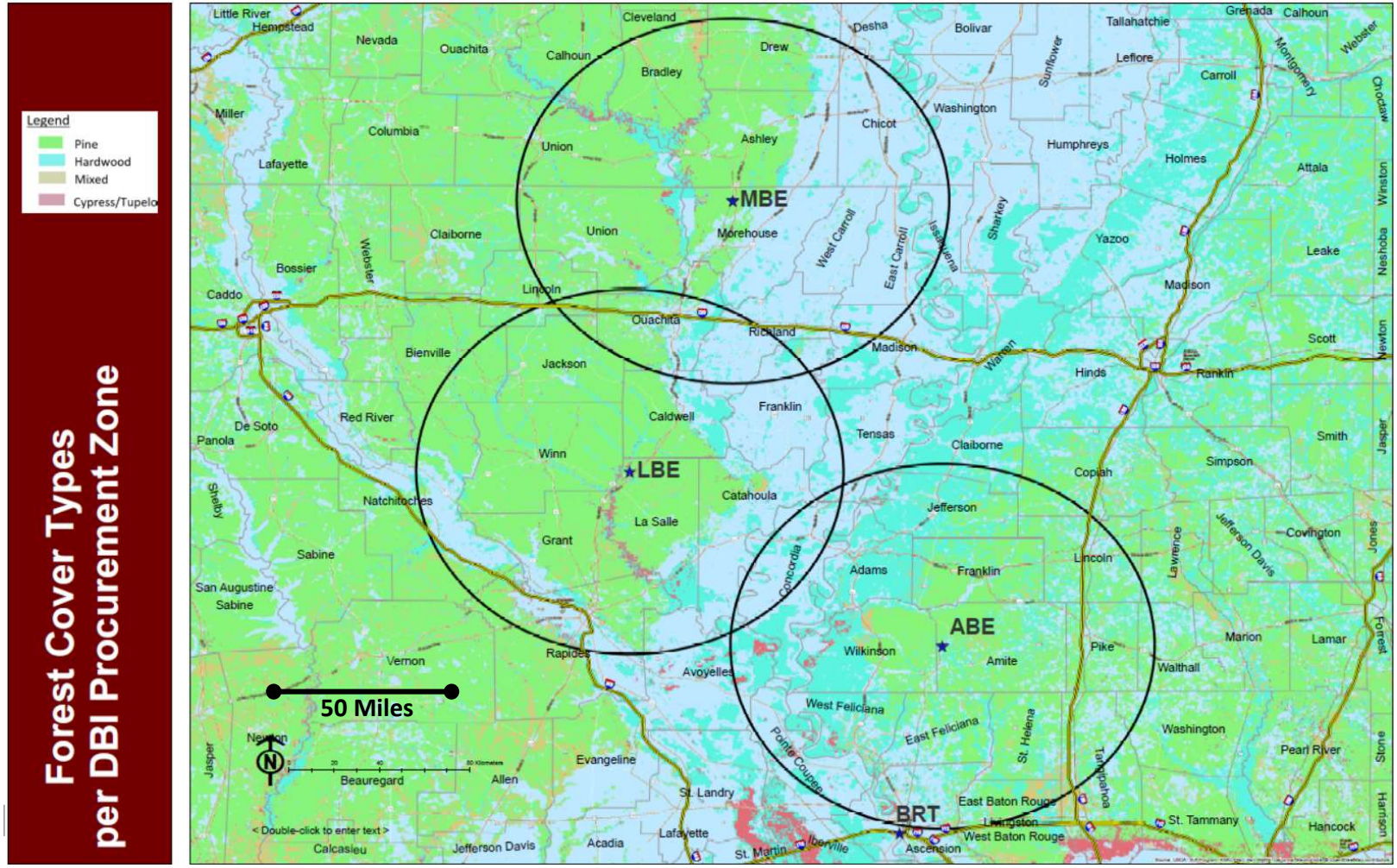
Pellet Production
1.3Mt
(2017: 0.8Mt)

Pellet Capacity
1.5Mt
(2017: 1.1Mt)

Morehouse BioEnergy pellet plant



Surrounding forests – primary sourcing areas



Managing sensitivities

Prior to taking fiber

- **Know who we are buying from**
- **Know at tract level the location of pulpwood and in-woods chips**
- **Know the sourcing area of sawmills supplying residuals**
- **Make our expectations clear as part of contractual requirements**
- **Crosscheck tract locations against information from NatureServe and other sources**

During and after receipt of fiber

- **Regular monitoring for compliance with requirements inc BMPs**
- **Monthly review of performance**
- **Third party audit of activity**

For further discussion..

- What the data says

- "Positive carbon leakage" – how forests in the US South respond to demand

Graphic from Forest2Market 2017 "Historical perspective on the relationship between Demand and Forest Productivity in the US South"

Pearson Correlations (p-values)								
Softwood Removals			Hardwood Removals			Total Removals		
Softwood Acres	0.93056	(p<.0001)	Hardwood Acres	0.81413	(p<.0001)	Total Acres	0.88763	(p<.0001)
Softwood Inventory	0.95007	(p<.0001)	Hardwood Inventory	0.80486	(p<.0001)	Total Inventory	0.79217	(p<.0001)
Softwood Growth	0.91452	(p<.0001)	Hardwood Growth	0.84462	(p<.0001)	Total Growth	0.90229	(p<.0001)

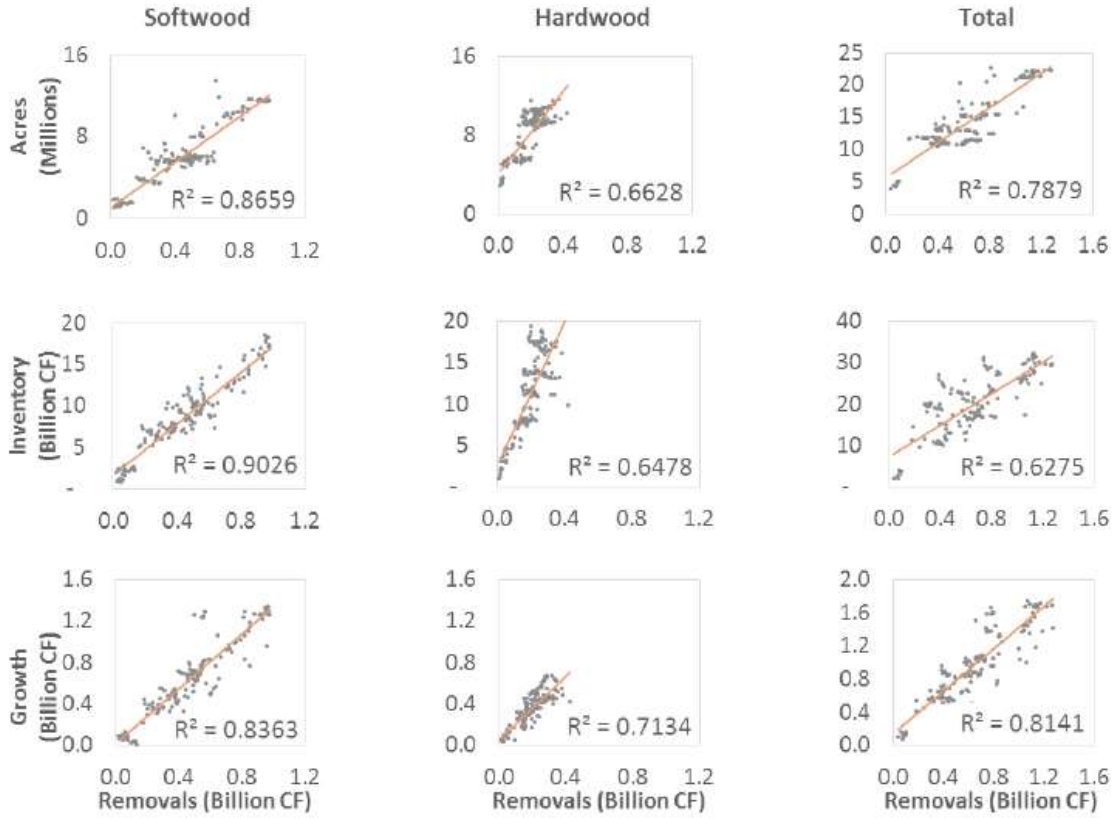
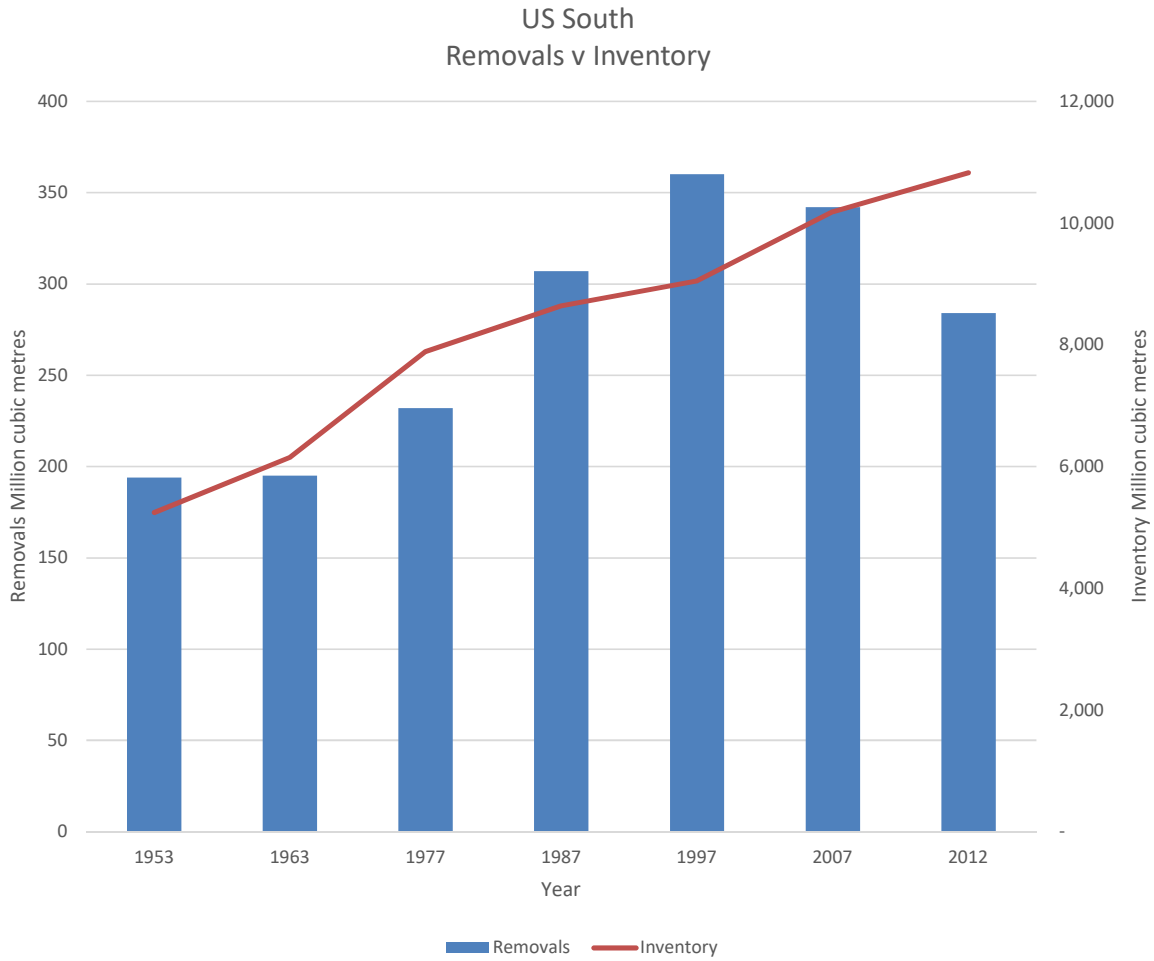


Figure 1-12 Private Removals vs. Acres, Inventory and Growth by Species, 1968-2015
(Sources: US Forest Service Forest Inventory and Analysis database, Forest2Market calculations.)


US South
Removals v Inventory
400
350
300
250
200
150
100
50
0
Removals Million cubic metres
12,000
10,000
8,000
6,000
4,000
2,000
-
Inventory Million cubic metres
1953
1963
1977
1987
1997
2007
2012
Year
Removals
Inventory

How does this happen – what does it mean?

(Spoiler alert – it does not mean every acre has to turn to plantation..)

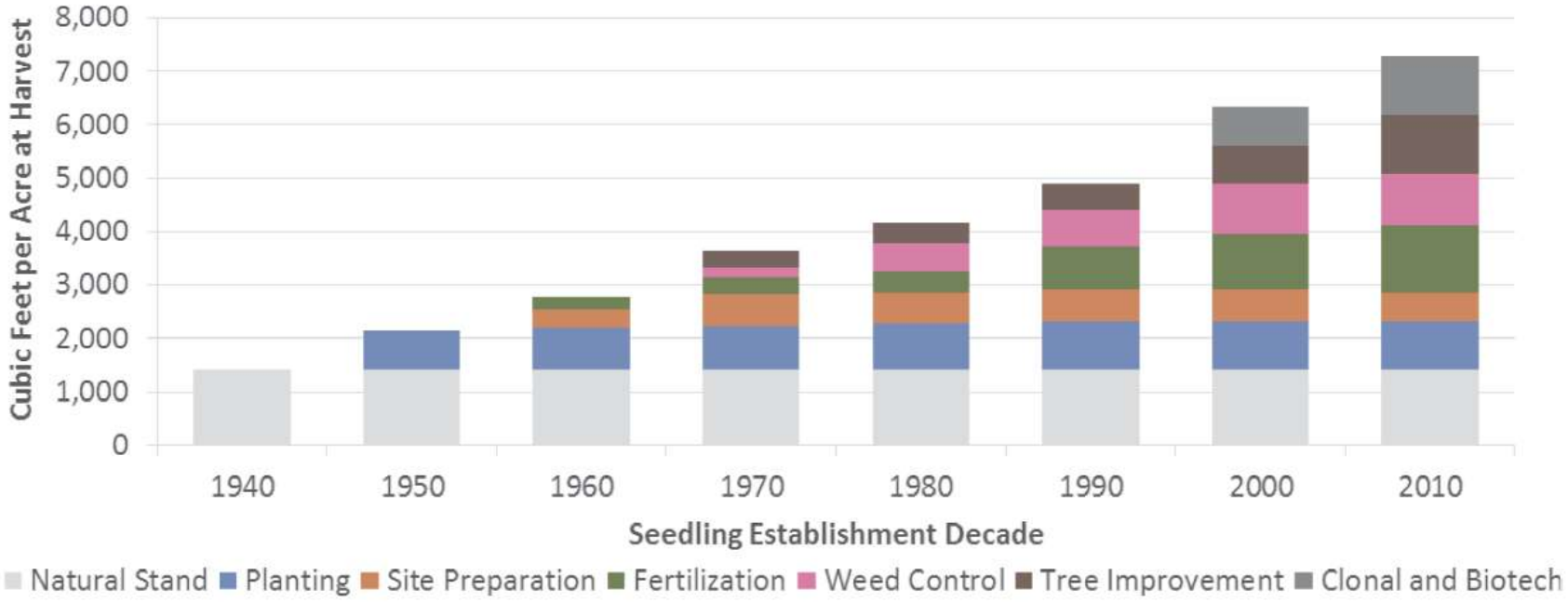
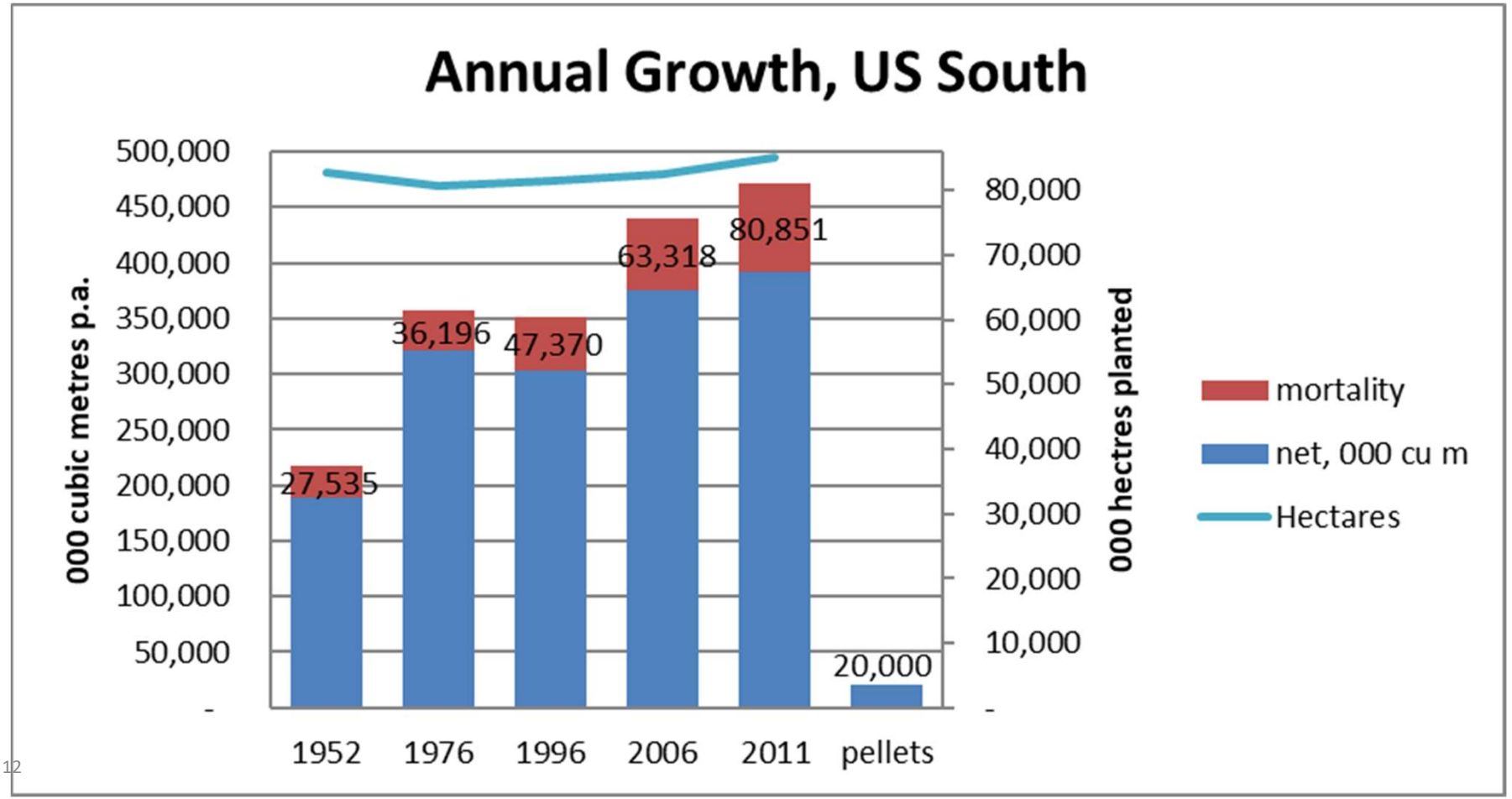


Figure 1-9 Estimated Contributions of Intensive Management Practices to Productivity in Pine Plantations in the US South, 1940-2010

(Source: Fox, Jokela and Allen 2004.[10])

What about scale?



BECCS

Thank you

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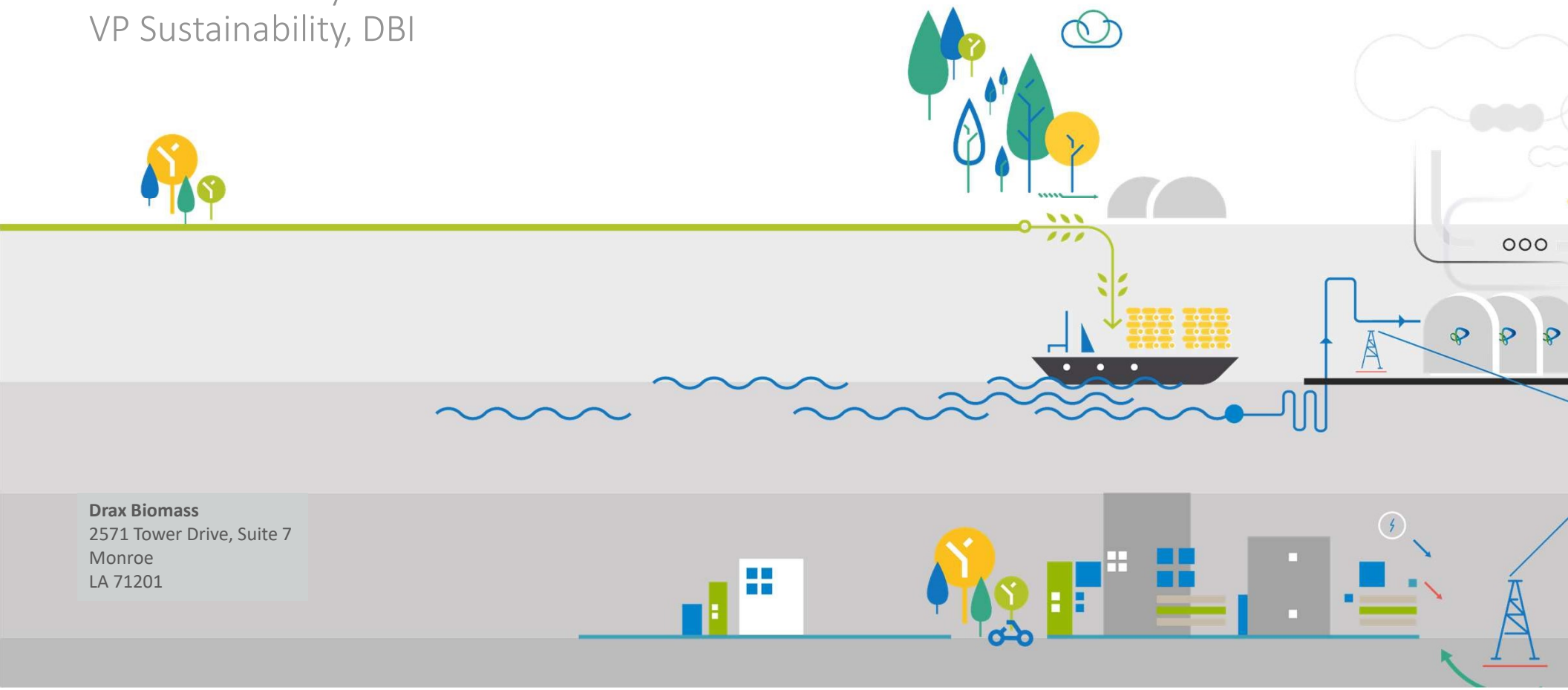

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