

drax

# The Drax experience

30 June 2021

# Drax Power Station - the largest single site renewable generator in the UK

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## 1. Source biomass sustainably

We source from sustainably managed forests that absorb atmospheric CO<sub>2</sub>. Low-grade wood that would otherwise go to waste becomes biomass



## 2. Generate Renewable Electricity

Biomass emits 80% less CO<sub>2</sub> than coal over its lifecycle and produces 12% of the UK's renewable electricity

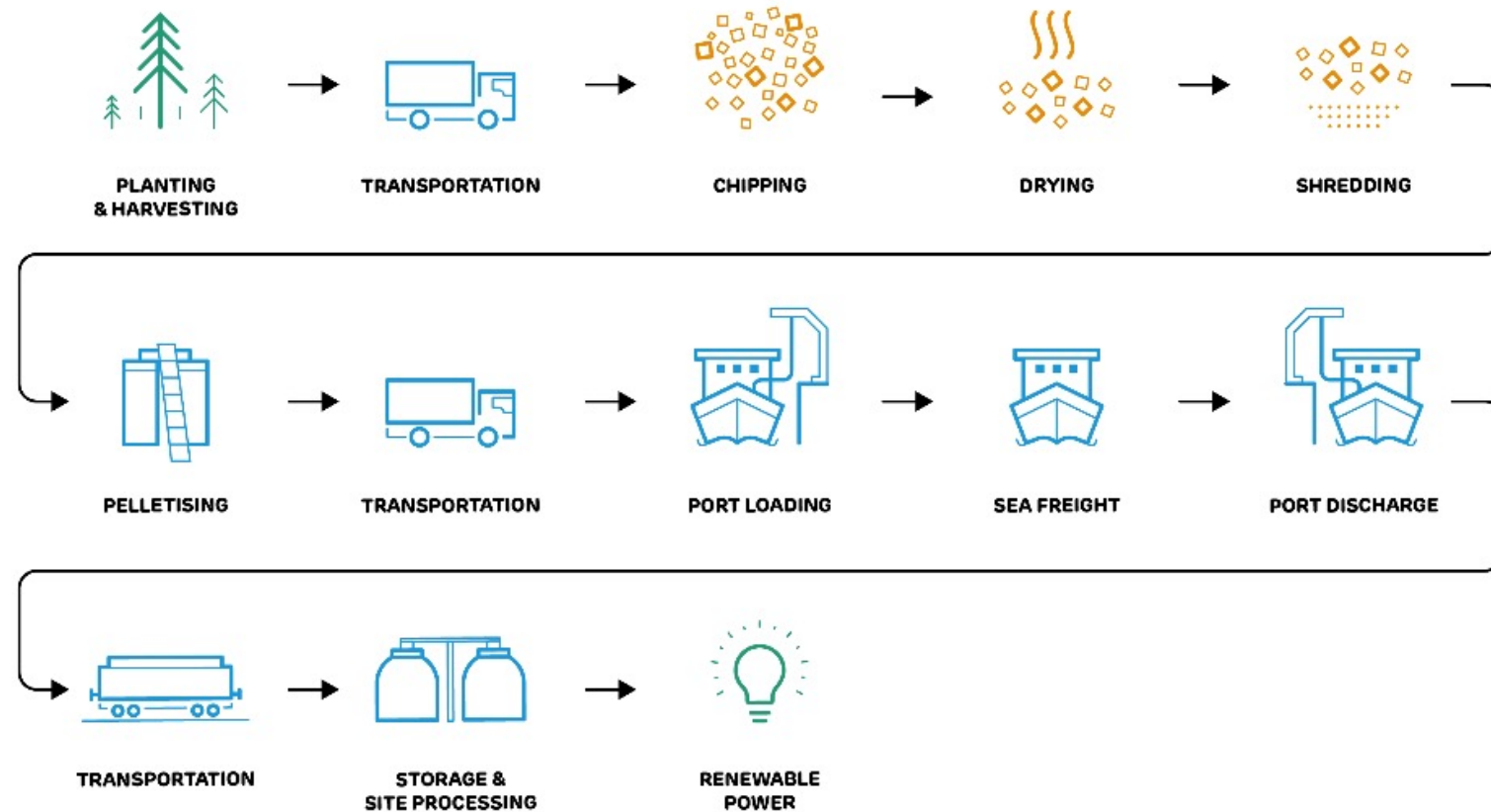


## 3. Lock away CO<sub>2</sub>

We will capture and lock away CO<sub>2</sub> produced, removing it from the carbon cycle

## Know the supply chain

Life cycle analysis





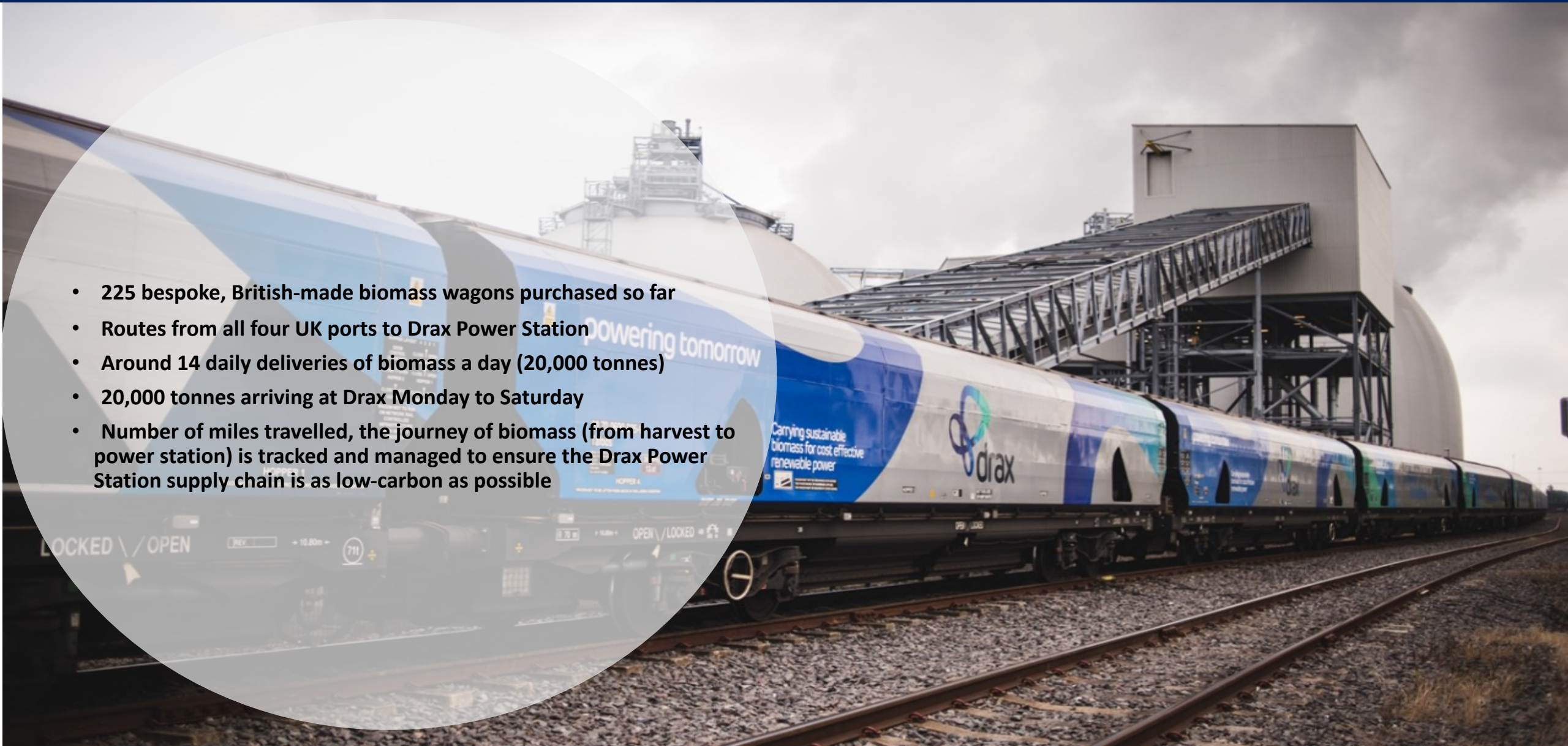
- Hull:
  - ❖ £20m investment
  - ❖ 1m tonnes of pellets p.a.
  - ❖ 40 permanent jobs created
- Immingham:
  - ❖ £150m investment
  - ❖ 6m tonnes of pellets p.a.
  - ❖ 100k tonnes storage
  - ❖ 75 permanent jobs created
- Liverpool:
  - ❖ £100m investment
  - ❖ 3m tonnes of pellets p.a.
  - ❖ 100k tonnes storage
  - ❖ 47 permanent jobs created
- Tyne:
  - ❖ £20m investment
  - ❖ 1.4m tonnes of pellets p.a.
  - ❖ 300 permanent jobs created



# Rail optimisation

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- 225 bespoke, British-made biomass wagons purchased so far
- Routes from all four UK ports to Drax Power Station
- Around 14 daily deliveries of biomass a day (20,000 tonnes)
- 20,000 tonnes arriving at Drax Monday to Saturday
- Number of miles travelled, the journey of biomass (from harvest to power station) is tracked and managed to ensure the Drax Power Station supply chain is as low-carbon as possible





>35% of the landmass and  
25% of global industrial wood  
production

Pellet industry  
less than 3% of  
annual harvest

Forest growing  
annually since  
1950s

Protected by statutes,  
regulation and  
certification

Best practices in  
forest management  
and sustainability

## US Southeast – key fibre basket

Vast resources of sustainable forestry

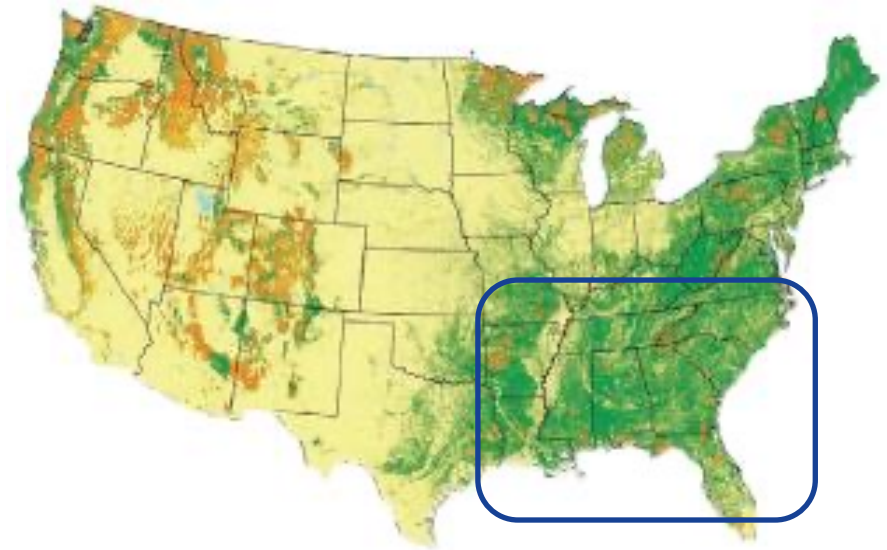
Inventories increased >90% since 1950

Well established commercial forestry industry and infrastructure

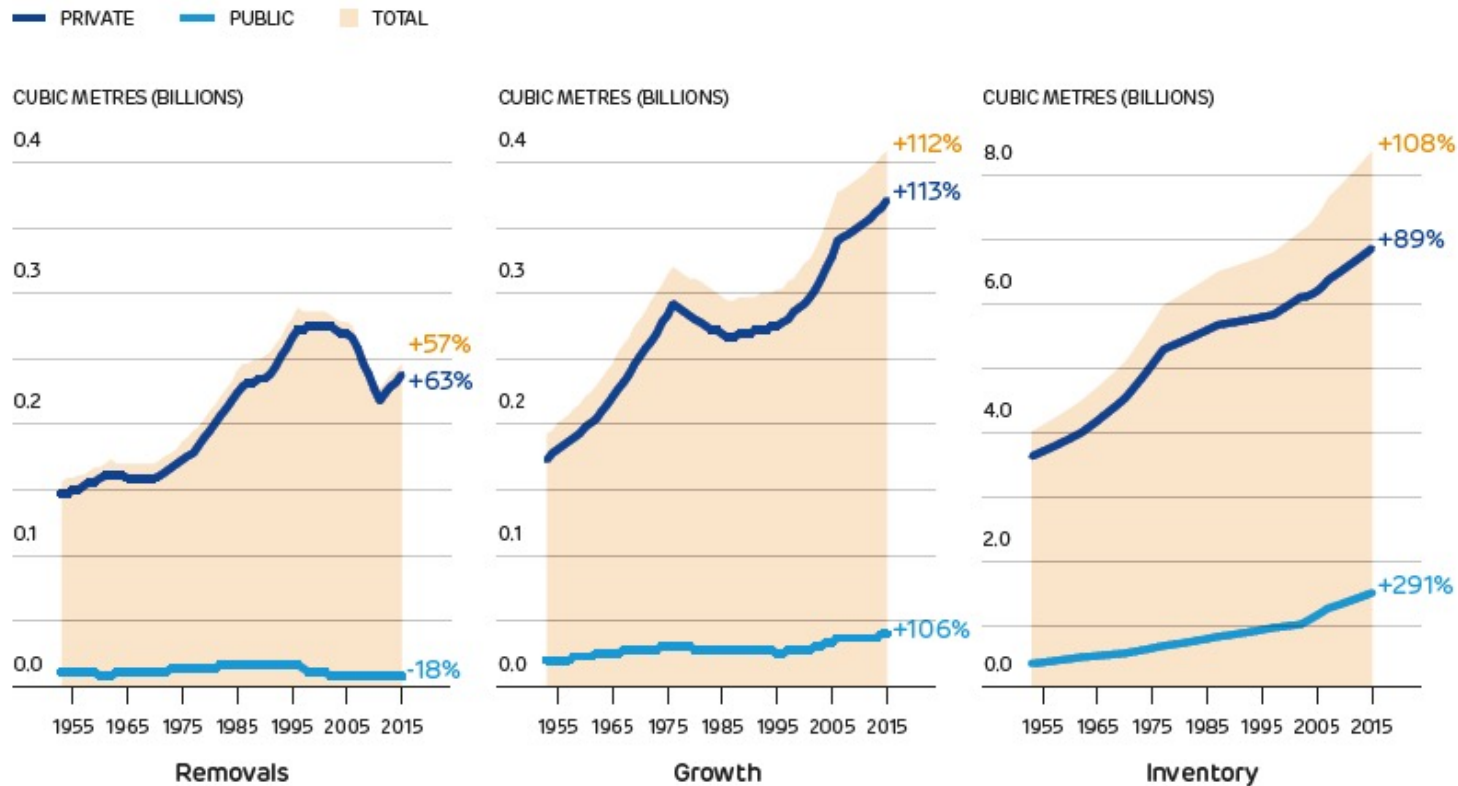
Structural decline in incumbent users of low value fibre

- Opportunity for pellet producers

## Stable commercial and regulatory environment

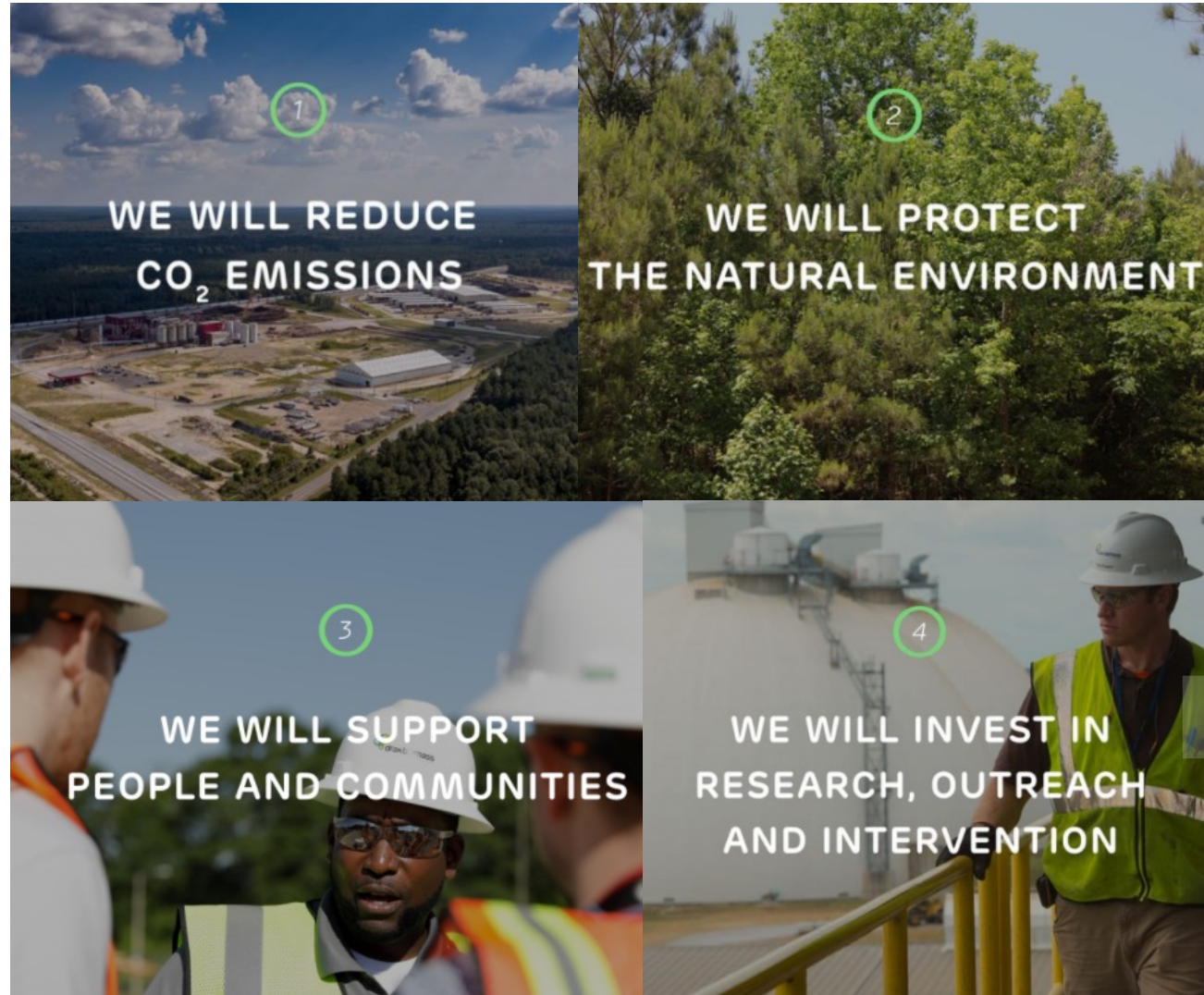


# forest supply base response to demand over time



For privately owned forests, such as the US South East, increased harvesting is associated with increased growth and increased inventory

# Drax responsible sourcing policy





## Drax is enabling a zero carbon, lower cost energy future

- Drax has already tested **cutting-edge carbon removal technology** that takes carbon dioxide from the atmosphere.
- We can modify Drax Power Station to create negative emissions and renewable energy using BECCS, as a first step towards the development of a **global negative emissions** industry.
- From 2027, with the first phase of BECCS, Drax will permanently remove up to **8 million tonnes of carbon dioxide** from the atmosphere each year.
- This would make Drax Power Station the **world's largest carbon capture project** and world's first carbon negative power station, supporting GB climate leadership.



# Lessons learned



- ✓ Decarbonisation is a partnership between government and industry
- ✓ Building a global supply chain has been the largest challenge faced
- ✓ A commitment to renewables and a stable investment framework are crucial to enable large scale projects to emerge
- ✓ Sustainability is key – track, trace, verify
- ✓ Biomass can complement wind and solar – it becomes more important over time
- ✓ The debate is changing – from displacing coal, to generating the negative emissions needed to keep 1.5 alive