Sustainable Biomass

Alan Knight:

Tokyo
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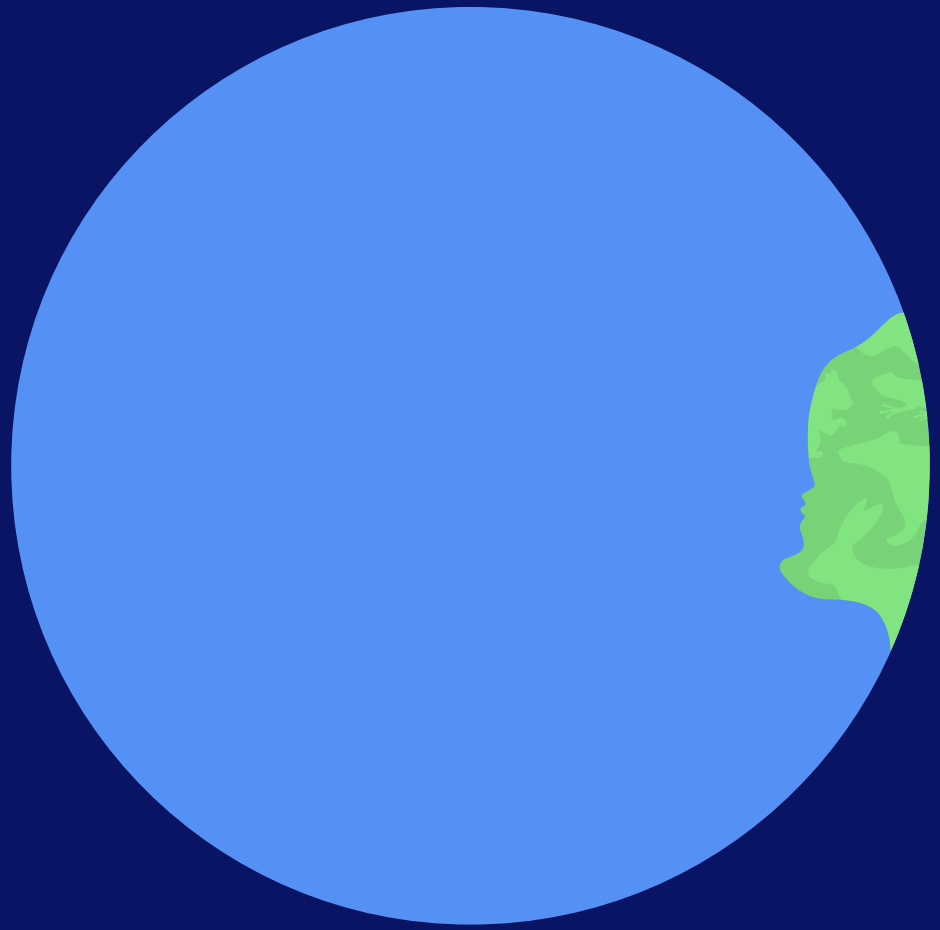


Drax: Enabling a zero carbon, lower cost energy future

Who we are

Global, vertically integrated renewable power & carbon removals company

Operator of Europe's largest decarbonisation project; we've converted 2.5GW from coal to sustainably sourced biomass

The **largest renewable power generator** in the UK (11%), providing power to over 5 million homes and businesses

A **leading producer of wood pellets** from sustainably managed working forests; with operations across the US South and Western Canada

35,600 jobs supported across UK, US and Canada markets and Drax Asia established in 2022

Carbon Dioxide Removal (CDR) pioneer

Attractive Opportunities to Invest For Long-term Growth

Strategic investments aligned with climate solutions, net zero and energy security
Attractive opportunities for long-term growth and positive climate, nature and people outcomes

Carbon removals	**Ambition for >20Mt of carbon removals via BECCS – 14Mt pa by 2030** • 2 sites selected and moving to option in US South – targeting c.6Mt by 2030 • Evaluating 9 additional sites in US for greenfield and brownfield BECCS • Development of option for CCS on a pellet plant – targeting FID in 2024/25, commissioning in 2026 • MoUs agreed for sale of >2Mt • 8Mt of carbon removals at Drax Power Station by 2030
Biomass pellet supply	**Targeting 8Mt of production capacity by 2030** • c.5Mt of current production capacity • 18 fully operational pellet plants plus developments across three major fibre baskets and five ports • c.2.5Mt of new capacity, plus 0.6Mt in development • Continue to target 4Mt of sales to third parties by 2030
Dispatchable, renewable generation	**Increased value from pumped storage and option for 600MW expansion of Cruachan by 2030** • Multiple earnings sources aligned with system needs • Underpinned by long-term earnings stability via a cap and floor mechanism **Construction of 3 new 299MW Open Cycle Gas Turbine plants at sites in England and Wales**

Coupling Growth With Sustainability

Financial, climate, nature and people positive outcomes

Countries, businesses and individuals are increasingly conscious of sustainability

- But savings are being offset by growth and new consumption

Drax model couples long-term financial performance with environmental and social growth

- Supporting more renewable energy
- Helping to restore the climate by removing CO_2
- Supporting the quality and growth of nature systems like forests
- Creating green jobs and supporting communities

Led by the Science

Our business is based on what the scientific consensus is telling us

Independent Advisory Board continues scrutinise our use of science

Creation of a central science function

- Enhance use of existing science
- New research
- Share thinking with stakeholders

Development of BECCS Evidence Book

The Case for BECCS: An Evidence Book

The need and ability to scale up BECCS at an accelerated pace, true to sustainability

2023

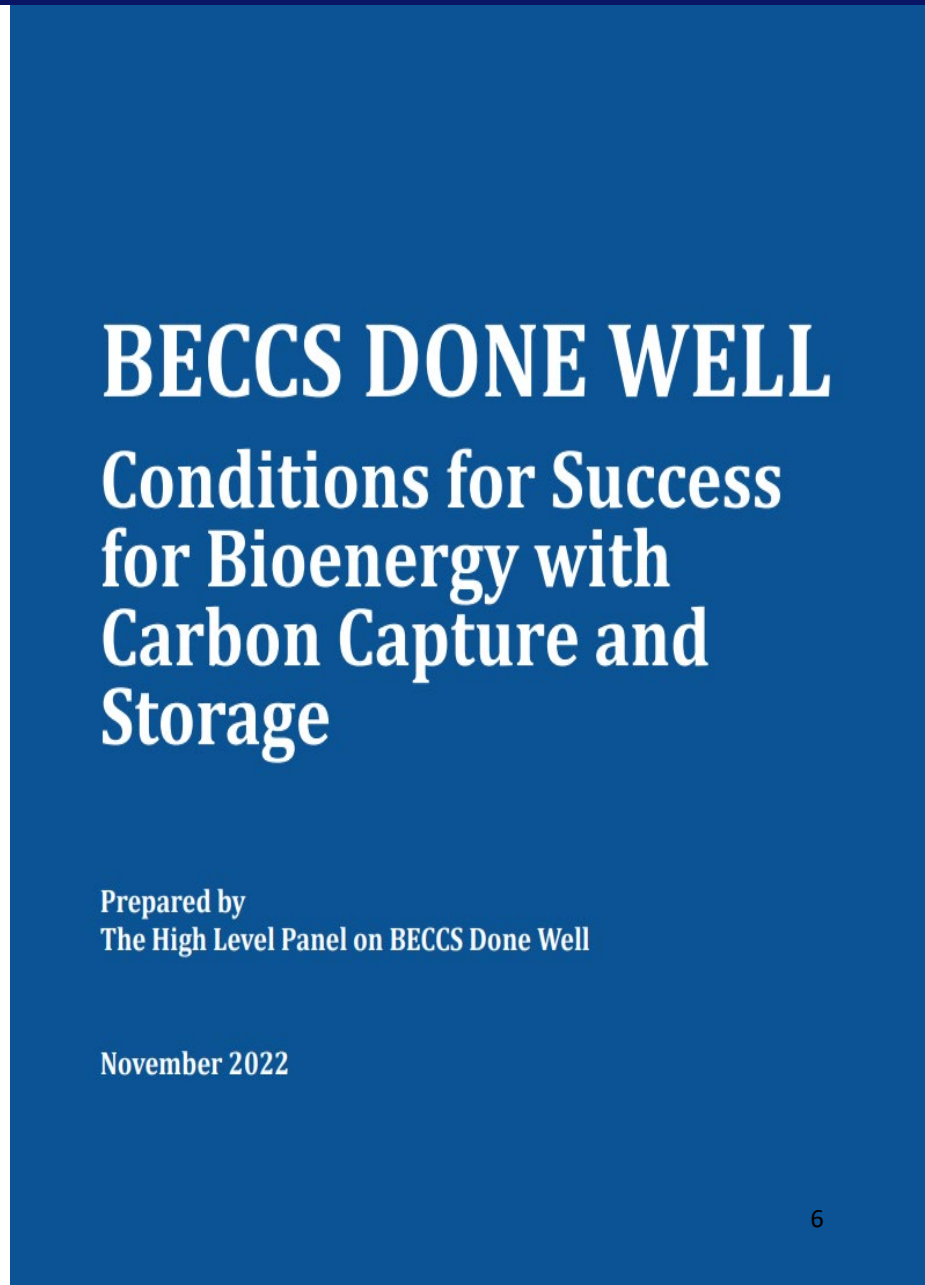
Responsive to Stakeholders

‘BECCS Done Well’ report – *Forum for the Future* (November 2022)

- Independent report commissioned by Drax
- Panel of four experts – Jonathon Porritt chair
- Seventy-plus expert stakeholders interviewed
- Supportive of BECCS
- Thirty conditions to ensure BECCS is done well

Since publication

- Extensive internal debate chaired by Will Gardiner
- Preliminary response due to be published shortly
- Full commitments and policies to follow
- Continue to work with Jonathon Porritt



Biomass sustainability and standards

Our Biomass Story Starts With Timber

The world needs more timber for construction, furniture and more

- Timber creates sawdust / shavings
- Harvesting forests creates thinnings, branches, unusable logs
- Good forest management includes removal of material
  - Reduce the risk / intensity of forest fires
  - Restoration from disease
- Drax fibre sources are embedded in the timber industry (2022 ARA)
  - c.98% from sawmill and other wood industry residues, branches and tops, thinnings, low-grade roundwood
  - c.2% agricultural residues

Biomass Sourcing

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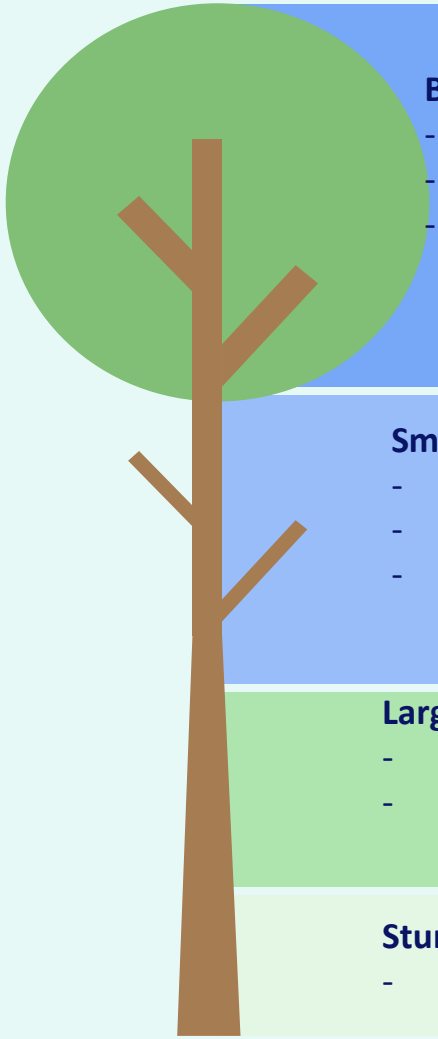
Biomass generation uses low-grades residuals

- Sawdust and chips from wood processing plants
- Forest sourced thinnings, branches, tops and low-grade round wood

	Forest Products	Sawmill Residues	
Sawlogs			Wood chips
Low grade roundwood and thinnings			Sawdust
Branches, tops and bark			Slab-wood

Sawlogs are the primary economic driver for commercial forestry

Premium product for use in construction and manufacturing



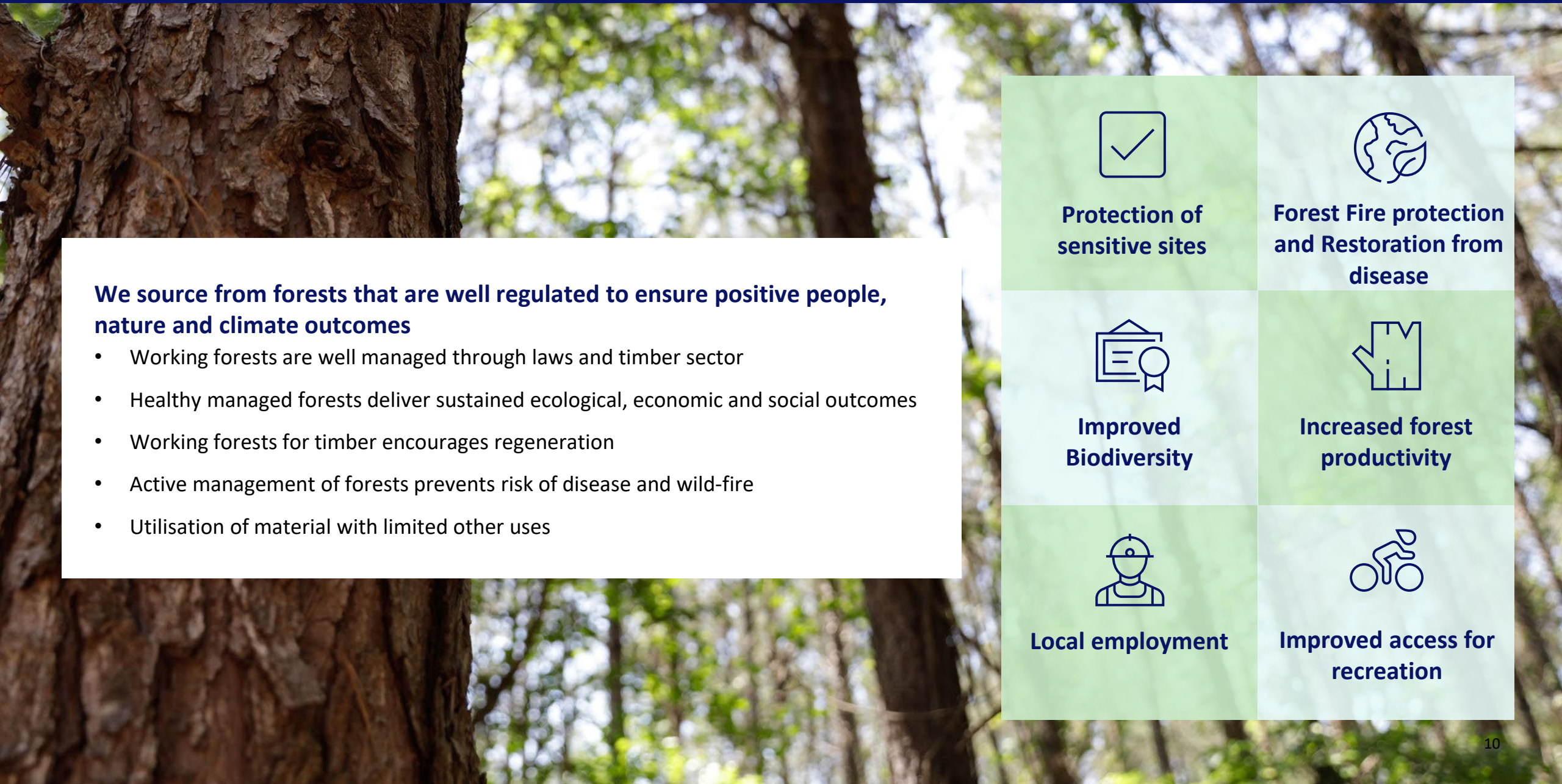
Branches and tops
- Low grade wood
- Low value residual
- Used in biomass

Small dimension
- Low grade wood
- Low value residual
- Used in biomass

Large dimension
- Premium price, primary market
- Used in construction and manufacturing

Stumps
- Leave to support soil health

Forest Management



We source from forests that are well regulated to ensure positive people, nature and climate outcomes

- Working forests are well managed through laws and timber sector
- Healthy managed forests deliver sustained ecological, economic and social outcomes
- Working forests for timber encourages regeneration
- Active management of forests prevents risk of disease and wild-fire
- Utilisation of material with limited other uses

Protection of sensitive sites

Forest Fire protection and Restoration from disease

Improved Biodiversity

Increased forest productivity

Local employment

Improved access for recreation

Minimising Wastefulness in Working Forests

Historically, commercial uses for residues were limited… particularly in British Columbia…
…..where burning of residues was undertaken

Biomass provides a better alternative and supports long-term investment in good forest management

Fibre Sources (2022)

c.60% of Drax Group fibre comes from USA

- Working forests harvested by landowners for timber and pulp
- Stable / growing carbon stocks
- Engagement with suppliers helps sustain and improve forest management practices
- Working with small and large producers

c.20% of Drax Group fibre comes from Canada

- 80% – sawdust and sawmill by-products

Tŝideldel Biomass

A company formed by one of the six Tsilhqot'in Nations

"We rely heavily on forest industries for employment and community wellness….supplying Drax with forest residues for biomass production is an important part of what we do" (Percy Guichon)

Drax Group sources of fibre

	Sawmill and other wood industry residues	Branches and tops	Thinnings	Low grade round wood	Arbori and agri. residues	Waste	Total
USA	19.7%	3.0%	13.8%	22.0%	1.4%	-	**59.9%**
Canada	20.2%	3.3%	-	0.8%	-	-	**24.3%**
Latvia	2.1%	-	-	6.8%	-	-	**8.9%**
Portugal	0.1%	0.3%	0.3%	1.2%	-	-	**1.9%**
Brazil	-	-	0.0%	1.8%	-	-	**1.8%**
Estonia	0.7%	-	0.2%	0.7%	-	-	**1.6%**
Other European	0.5%	-	-	-	1.1%	**0.1%**	**1.7%**
Total	**43.3%**	**6.6%**	**14.3%**	**33.3%**	**2.5%**	**0.1%**	**100.0%**

Drax Pellet Production sources of fibre

USA	24.3%	0.0%	16.2%	12.3%	-	-	52.8%
Canada	38.9%	7.1%	0.0%	1.1%	-	-	47.2%
Total	63.3%	7.1%	16.2%	13.4%	-	-	100.0%

Carbon Stocks in Forests

Catchment Area Analysis

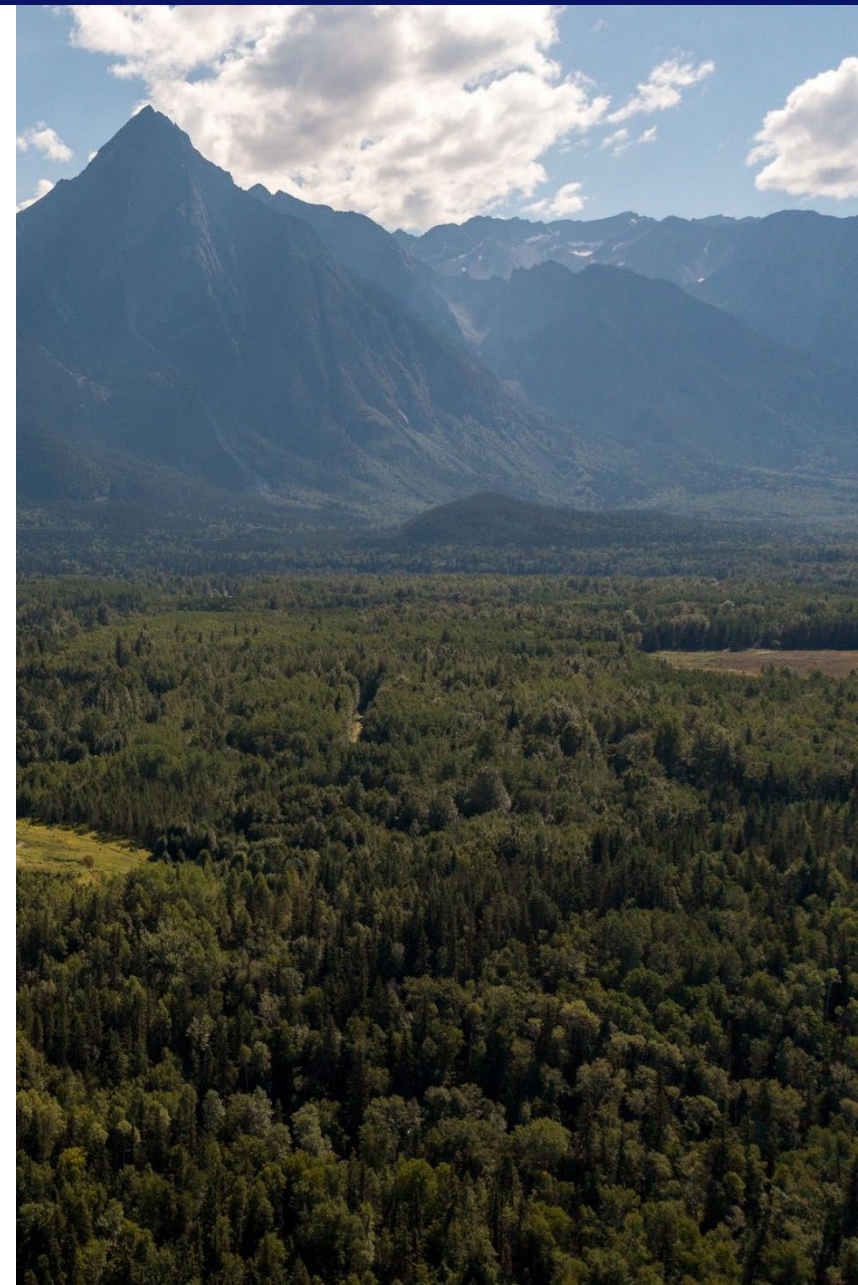
- Tracking of carbon storage and sequestration dynamics in regions where we source
- Applied to own-use fibre and third-part pellet suppliers

Catchment Area Analysis considerations

- Amount of carbon stored on landscape (growing stock)
- Sequestration rate of carbon (productivity of forests)
- Harvesting levels vs productive capacity of area
- Changes in forest management practice
- Wood prices and other markets that use wood

Impact

- Supports focus on sourcing from growing and stable forests
- Actions do not have an adverse impact
- Account for forest carbon stocks for our source



Independent Sustainability Standards and Checks

Multiple regulations / standards and audits of our biomass sources:

- In-country forestry regulations for timber sector
- Independent, multi-stakeholder forest standards bodies – FSC, PEFC, SFI
- Independent, multi-stakeholder standards for biomass – SBP
- Internal policies and audits

Highlight on:

Sustainable Biomass Program (SBP)
SBP is a certification system designed for woody biomass used in industrial energy production

Originally created by biomass generators, SBP has evolved and has had a multi-stakeholder governance structure since 2019

Sustainable Forestry Initiative (SFI)

Programme for the Endorsement of Forest Certifications (PEFC)

Forest Stewardship Council (FSC)

Drax, leading role in creation of Glasgow Declaration

Lead the industry in setting the sustainability standards for biomass

Clear principles

Forum for users and producers, with others stakeholders to agree a common approach to sustainability

Working closely with World Bioenergy Association, RWE, Graanul, Enviva and others

Glasgow Declaration on Sustainable Bioenergy

Multiple Controls and Processes in Place to Ensure Sustainable Biomass Sourcing

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The economics of forestry mean we take low-grade material

We buy from regions where forest regulations are tight

Voluntary certification schemes

Sourcing policy, supported by our compliance procedures

UK regulations and compliance is audited

Post-harvesting studies, to track impact

Independent Advisory Board of leading academics

Work with our sector to create a universal gold standard

Towards BECCS and what next?

Modelling of Potential Sources of Biomass at a Global Level

Geospatial models with sustainability filters…

Modelled current and potential future biomass production
11 geospatial datasets, 7 scientific references and high-resolution data

Criteria

No high conservation value land: intact forest landscape; high biodiversity intactness index; key biodiversity area; peatland; wetland; areas with high soil loss

Leaving enough reside for nature: protect nutrient cycles, floor biodiversity in forests

Good practice forestry and logistics: exclude land steeper than a threshold grade; land far from major infrastructure; containing a low biomass density excluded

…exploring three main types of biomass

Low grade and forest and sawmill residuals: wood residues, primary residues from forest harvests, secondary residues, and low-grade roundwood
Excludes high-quality roundwood such as sawlogs

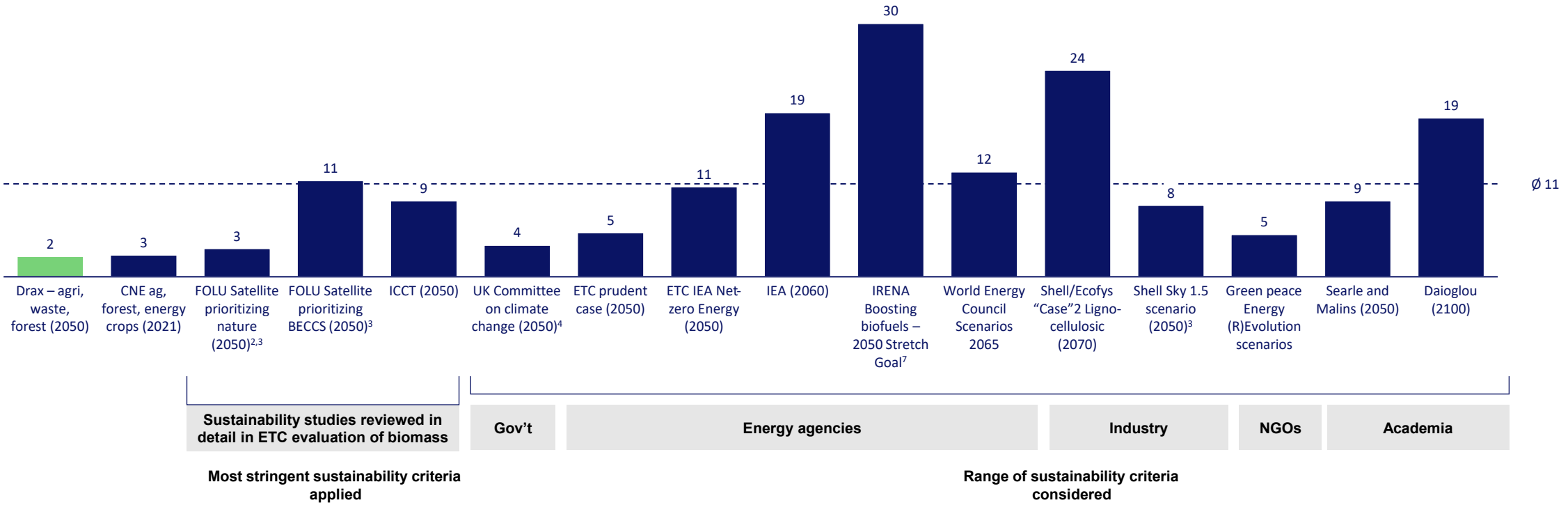
Agricultural biomass: primary residues (e.g., stalks, leaves) and secondary residues (e.g., processing residues like bagasse)

Waste biomass: woody municipal waste, sludges, cooking oils, animal fats, food processing wastes, and other municipal wastes

A Wide Range of Views on the Level of Sustainable Biomass Sources Globally

Drax conservatively estimates this could support >2billion tonnes of CO_2 pa from BECCS

Theoretical maximum of CO_2 that could be captured by BECCS based on global sustainable biomass supply, $GtCO_2$ pa



Notes: ETC estimate shows high end of prudent range, excludes ~10 EJ of woody biomass from forestry used as materials (based on current harvests from commercial forestry; may increase if forestry practices expand); dashed areas shows maximum potential from seaweed, waste and freeing up agricultural land (~60 EJ); excludes traditional fuelwood (~5-15 EJ) and biomass used in recycled materials (~4 EJ today)

2. This scenario is effectively a 'no BECCS' scenario. 3 Excludes traditional uses of biomass (fuelwood, charcoal and dung used in the residential sector, predominantly in developing countries). 4 Mid scenario. Figures represent 'tradable' bioenergy feedstock suitable for international trade (e.g., forestry and energy crop feedstocks) while excluding 'non-tradable' feedstocks not suitable for long-distance trade due to low energy densities or other physical properties (e.g., biogenic waste). 5 Unfinished Symphony Scenario. 6 Organic waste streams include agricultural residues, food processing, and municipal and industrial organic waste streams. 7 Recent 1.5°C Scenario from IRENA estimates primary bioenergy demand to be 153 EJ in 2050.

Source: ETC, Drax analysis

Carbon Reduction

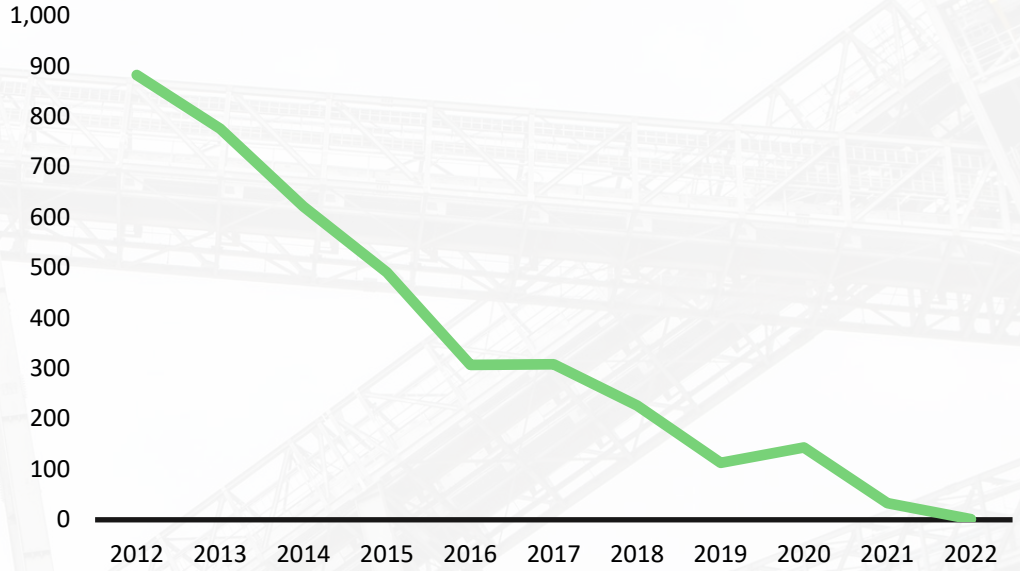
Coal reduction saw scope 1 emissions fall

Which is why we have put in place targets to reduce our remaining Group scope 1, 2 and 3 emissions

Targeting net zero by 2030

Over the past decade Drax has reduced its scope 1 and 2 carbon emission from generation by almost 100%

Generation Scope 1 and 2 CO_2 (tCO_2e/GWh)



- Transition from coal to biomass
- Sale of combined cycle gas generation
- Closure of remaining coal

Well-established science and policy underpins biomass sustainability

Mapping our impact and dependencies on the natural environment to enable us to have a positive impact

- Working with WBCSD and others to establish best practice
- Identifying nature metrics specific to our generation assets and forest sources
- Recruiting nature specialists at corporate and operation level.
- Policies and projects in place to protect and enhance nature at our many touchpoints
- Developing partnerships throughout our value chain to deliver benefits to nature
- Member of Task Force for Nature Related Financial Disclosure (TNFD) Pilot

People Positive – Drax Giving: Investing in Our Communities

c.£1million investment in 2023 in projects and programmes that support our communities

Drax Foundation

Grant funding for non-profit organizations in the UK, US and Canada

- STEM education and skills development
- Enhancing green spaces and biodiversity in local communities
- Bi-annual grant awards, grants up to £50,000. Supported by employee-led Foundation Committees in each country

Drax Community Fund

Donations to local projects in the communities where Drax operates

- Focus on STEM education and improving local communities
- Projects with high local visibility
- Quarterly donations of up to £2,000 to local community projects.
- Supported by employee-led Charity Committees in each country

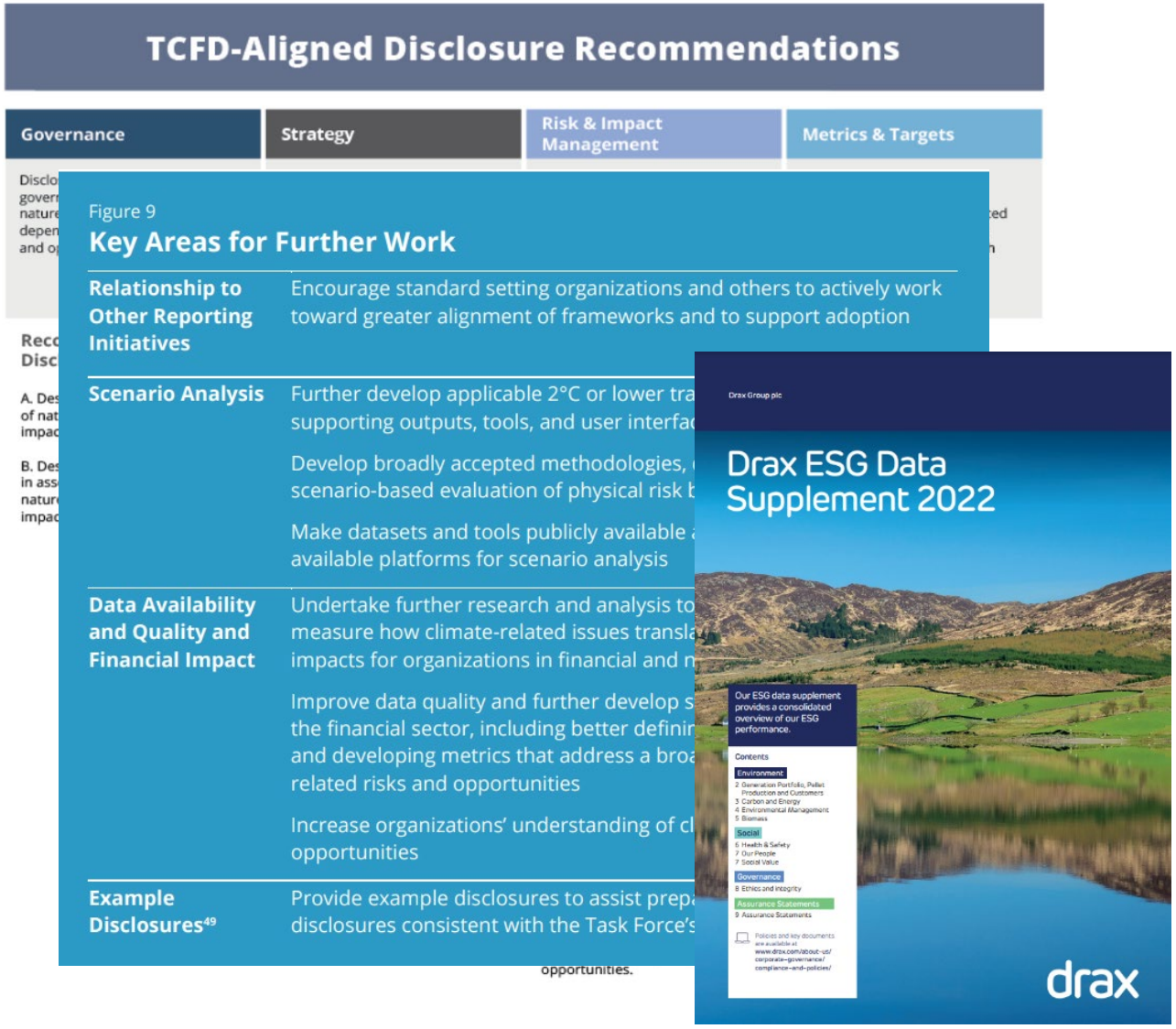
Drax Communities in Crisis Fund

- Emergency support for natural disasters, conflict and other humanitarian crises
- Overseen by Drax executive committee

Development of Governance, Reporting and Disclosure

Strengthening our governance across the company through a new governance model and ESG reporting

- Sustainability Council
- New executive role for sustainability
- Expert hubs (Climate, Forests, Carbon Reduction, Nature, Biomass)
- ESG reporting



Summary

A business model that links positive long-term financial, climate, nature and people outcomes

Underpinned by the science and strong governance