



Biocarbon and biocoal report

A review of the commercial status of the global biocarbon and biocoal markets

A multi-client report, available immediately

Copyright: Hawkins Wright Ltd.

#### Why is this report needed?

The market for biocoal and biocarbon (torrefied, steam-treated, pyrolysed and hydrother-mal carbonisation) has been showing signs of a resurrection in the past couple of years, supported by the global phase out of coal and the need for heavy industry to defossilise.

In particular the emergence of demand from heavy industry, including the metallurgical sector, is changing the outlook for the biocoal and biocarbon markets. The requirements are different to those needed to replace coal in heat and power generation, such as carbon content, energy content, chemical composition and densification form. Different technologies are being developed to serve the different end-use markets, but there is still some confusion as to who is doing what, where and when.

In the past, biocoal and biocarbon technology, often referred to as black pellets, has struggled to gain a foothold, but there are now numerous commercial-scale production plants in the pipeline. These will be key to the biocoal and biocarbon industry finally establishing itself in the wider biomass market.

This report presents an introduction to the different technology types available. It also identifies the key suppliers today and projects in the pipeline, as well as their target markets.

This report will provide the overview and introduction many companies new to the biocoal and biocarbon markets need. It will help companies identify the most suitable partners for new demand projects, as well help biocoal and biocarbon project developers understand their competitors. It also provides an overview of the key demand sectors and developments.

The report lists ~100 biocoal and biocarbon supply projects from almost 60 project developers. It also includes 16 detailed profiles of the key technology providers, 23 profiles of the most advanced supply projects and details of potential end-users making upstream investments.

## Who should read this report?

This report will be essential reading for all companies considering the opportunities in the biocoal and biocarbon markets. In particular, it will help prospective users identify what supply is available, where and when.

#### **Questions answered**

- How big are the biocoal and biocarbon markets currently?
- What are the key differences between torrefied, steam treated, pyrolysis and hydrothermal carbonisation technologies?
- Who are the main developers of commercial scale supply projects?
- How advanced are the existing supply projects?
- Which technologies are being used in which projects?
- Where will demand come from?



### **Report details**

How can this report help

Copyright: Hawkins Wright Ltd.

Biocarbon & Biocoal





#### Report contents



### Report contents

How can this report help

Copyright: Hawkins Wright Ltd. Biocarbon & Biocoal





#### Table of contents

Executive summary	3
Introduction	
Technologies. Torrefaction Pyrolysis Steam Treatment Hydrothermal Carbonisation. Charcoal Key process parameters Characteristics Technology providers Attributes When to pelletise Shipping	. 5/6 . 7/8 . 9/9 . 10/13 14/22 23/23
Key Suppliers  Existing suppliers  Supply in India  Supply in China  List of projects  Existing wood pellet producers  Legacy piles  SAF by-products  Biochar producers	26 38 40 41 46 46 46

Demand	. 4
European demand	4
Japanese demand	4
Rest of the world demand	4
Use in metals production	5
Use for gasification	5
Biographite	_
Glossary	. 5
Hawkins Wright's services	5
I Idva VIII 3 A A I I B I I C 3 2 C I A I C C 2	ر .

# Report contents

How can this report help

#### How to subscribe

The price of the report is: £4,500 (or the equivalent in US dollars or euros). Please get in touch to find out about our exclusive discount for existing subscribers to our other multi-client reports.

To order please complete the online order form at: www.hawkinswright.com/subscribe

If not paying online, an invoice and payment instructions will be sent to you when your order is received. Payment may be made by bank transfer or credit card.

If you have any questions about the report, or how to place an order, please email post@hawkinswright.com and one of our team will get back to you shortly.

#### What is included in a subscription...

A subscription to this report comprises:

- A 57 page report downloadable in PDF format.
- A worldwide corporate licence to distribute the report within the subscriber's organisation.
- Subscribers also receive Hawkins Wright's response to any questions that arise from our research. We welcome the opportunity to exchange views and information with our clients.
- A presentation meeting with the authors by video call or face-to-face in London. (If a face-to-face meeting is held elsewhere, travel and subsistence expenses may be charged at cost.)

#### Other services

Hawkins Wright produces a range of regular multi-client reports covering the biomass and pulp and paper markets. Please get in touch at post@hawkinswright.com to find out more

Selection of our other multi-client reports:

- Forest Energy Monitor a monthly overview of recent developments and biomass prices
- Outlook for Wood Pellets a quarterly in-depth analysis of the wood pellet market
- Outlook for Market Pulp supply, demand, cost and price analysis of the international paper grade pulp market

Hawkins Wright also offers a wide range of bespoke consulting services for the biomass and bioenergy industries.

Our expertise covers the entire biomass supply chain, from forest resources, to logsitics, pellet production, contracting and biomass project development.



## Order the report today

How to subscribe