



Unlocking the potential of biomass

2023



Global supply chain solutions provider

We are a provider of global supply chain solutions, steeped in history and experience, brimming with ideas and passion, and backed by technology and investment. Our purpose is to exert a positive economic and sustainable influence in our food, beverage and energy supply chains. We create value at every stage of the supply chain and geography that we work in, strategically managing risk and tailoring financing solutions, optimising freight, cutting costs and promoting sustainable practices.

A QUALITY FOCUS

At CZ, our purpose is rooted in influencing a positive sustainable influence, and we are committed to make our energy products as sustainable as possible. CZ is accredited by the FSC® through its chain of custody assessment, that verified that forest-based materials produced according to FSC's rigorous standards are credibly used along the products path to final product. This allows us to trade FSC-certified woody biomass through our supply chains, ensuring environmentally safe, socially and economical beneficial forest management practices and bringing a range of advantages to our clients.

FSC® certified products available upon request.



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Strategic expansion into biomass

Our strategic expansion into biomass is underpinned by our in-depth experience in commodities, in particular the sugar market and its crossover with renewable energy.

Driven by our client-led service ethos, we have developed a portfolio of biomass energy products that will help to catalyse the change that our clients want to see. We have a long-established biomass business in Brazil, which has a strong supply of bagasse, and have more recently expanded our biomass business to Asia and Africa. We are committed to sustainability and developing agricultural by-products as a source of sustainable, renewable bioenergy for the world. So far, our activities have focused on bagasse, woody biomass (from rotation of rubberwood plantations for instance), hybrid tropical grass, and rice husk, of which there are enormous quantities available.

The use of biomass is on a steep upward trend, with demand growth increasing nearly threefold in the last decade. Biomass as a feedstock for heat, steam and electricity supply is an important pillar of the decarbonisation pathway. This reflects strengthened efforts by organisations around the world to forge a pathway to net zero. Since we started sourcing biomass for our clients, we have moved from product provider to key advisor on alternative energy sources and decarbonisation opportunities.

We are confident in our ability to grow in this sector, supporting the ambitions of our partners to achieve a net zero carbon reality. We understand the market pressures faced by our clients to make carbon reductions across their supply chains to meet their various ambitious targets and have developed VIVE's Climate Action initiative to support this cause. We are here to make a difference, and we have the resources, both human and financial, to make an impact.

Robin Cave, CEO



+ P5



Coffee husks ready to be composted (Envato Elements)

50%

PROJECTED GROWTH IN GLOBAL PELLETS TRADE BY 2028

480

MILLION TONNES OF SUGARCANE BAGASSE PRODUCED IN 2022

US\$4.3B

CZ TURNOVER IN 2022

950+

CZ CLIENTS IN OVER 100 COUNTRIES

25

STRATEGIC VIVE PARTICIPANTS


VIVE
SUSTAINABLE SUPPLY PROGRAMME

Our biomass portfolio

1. Woody biomass

PRODUCT	FORMAT	ORIGIN
WHITE PELLETS	Jumbo bag/Bulk	Asia/Europe/ N. America/S. America
TORREFIED PELLETS	Jumbo bag/ Bulk	Asia/Europe
WOOD CHIPS	Jumbo bag/Bulk/Bales	Asia/ S. America

TRUSTED AND INTREPID

We are trusted to take care of supply chains that are vital to the food & beverage, packing and energy industry, and to do so with transparency and accountability. We are fleet of foot, moving quickly to source new products and set up in new geographies to better serve our clients. We have earned our reputation for doing business with integrity and we pride ourselves on our client-centric ethos.

As a service company, our people make all the difference. Our people, who are adaptable, resourceful and skilled in agricultural economies, bring diversity of thought, background, industry experience and local knowledge to our business. We leverage these knowledge and experience in every stage of the value chain to support and engage all supply chain participants (farmers, producers, banks, logistics providers and buyers) and offer a variety of tailor-made solutions to meet each of their individual needs.



More information:
www.czarnikow.com/energy/biomass

2. Agricultural biomass

PRODUCT	FORMAT	ORIGIN
RICE HUSKS	Jumbo bag	Asia
RICE HUSK PELLETS	Jumbo bag/ Bulk	Asia
BAGASSE	Jumbo bag/Bulk/Bales	Asia/N. America/S. America
BAGASSE PELLETS	Jumbo bag/Bulk	Asia/N. America/S. America
CANE LEAF	Bulk/Bales	Asia/N. America/S. America
CANE LEAF PELLETS	Jumbo bag/Bulk	Asia
CASHEW NUT SHELL PELLETS	Jumbo bag/Bulk	Asia
CASHEW NUT SHELL RESIDUES	Jumbo bag/Bulk	Africa/Asia
PALM KERNEL SHELLS	Bulk	Asia
EMPTY FRUIT BUNCHES	Bulk	Asia
HTG PELLETS	Bulk	Asia
COCONUT FIBRE	Bulk/Bales	Asia
COCONUT SHELL CHARCOAL	Jumbo bag/Bulk	Asia



Close up of a coconut shell (Envato Elements)

Our biomass solutions

We apply our entire service offering to biomass value chains, including off-take, risk management, logistics, financial advisory, structured finance, sustainability services (through VIVE) and consultancy. Our intention is to optimise biomass value chains and where possible to replace the usage of fossil fuels for steam, heat and power generation.

We also facilitate investments in steam production, leading to more biomass production and a higher yield of energy produced by that biomass.



VIVE SUSTAINABLE SUPPLY PROGRAMME

VIVE combines CZ's detailed understanding of complex global supply chains with Intellync's ESG expertise and auditing skills. Our work accelerates global capacity to meet increasing market demand for sustainably-sourced, commercially viable products by engaging VIVE participants – from farmers to industry buyers – in a programme of continuous improvement. Initially focused on sugar supply chains, VIVE is now a multi-commodity programme with participants in 14 countries globally. 10 sugar mills are part of VIVE, processing over 1 million tonnes of VIVE-verified sugar cane per year, much of which produces excess verified, sustainable bagasse. Over 80 leading global food brands including Coca-Cola, Nestlé, Barry Callebaut and Friesland Campina are part of Buyers Supporting VIVE, a network of buyers committed to sustainability and who stimulate sustainable growth through their procurement strategies.



Bagasse, waste of sugar cane (Shutterstock)



CZ'S CORE BIOMASS SOLUTIONS

Off-taking

We develop tailored contracts for off-take from producers, or supply to generators and industrial users. We focus on delivering flexibility and optionality for all parties, and further enhance contract terms by incorporating our wider services as outlined in the solutions below.

Structured Finance

The backbone of global trade, which sees all the products we use daily move from production, through processing and into consumption. As a trusted partner, CZ provides advanced payment terms to alleviate uncertainty and help move goods and documents through the supply chain efficiently by facilitating prepayments, receivable finance, pre-shipment and freight finance.

Corporate Finance

We offer extensive financial advisory services in biomass including cogeneration and biomass production, executing mandates for mergers and acquisitions (M&A), capital raising (debt and equity), debt restructuring and financial feasibility studies.

Market Analysis

We provide market insights, data and forecasting, and assess project feasibility. Through this service, we maximise value for clients at all stages of the supply chain and share our deep knowledge of agricultural supply chains.

Logistics and freight

CZ has been moving commodities for over 160 years and moved 7.9 million metric tonnes of product around the world in 2022. Our logistics solutions can be tailor-made to meet clients' needs and provide a flexible range of options including containers, bulk, break-bulk, inland trucking, vendor managed inventory and warehousing. We use local knowledge to focus on 'last-mile logistics', enabling us to deliver products efficiently and effectively.

Consultancy

Our consultancy service focuses on helping our producer clients maximise the opportunities presented by the unprecedented global growth in bioenergy, including woody and agricultural biomass feasibility studies, advisory content in biomass production and how to create surplus biomass for efficiency operations. Our specialist consultants and global leading technical partners, such as CPM for pelleting and Swiss Combi for biomass drying, can assess, analyse and recommend the best bioenergy opportunities for our clients.

Sustainability

Through our VIVE Sustainable Supply Programme, agricultural product supply chains, including bagasse, undergo thorough sustainability assessments and improvement plans.

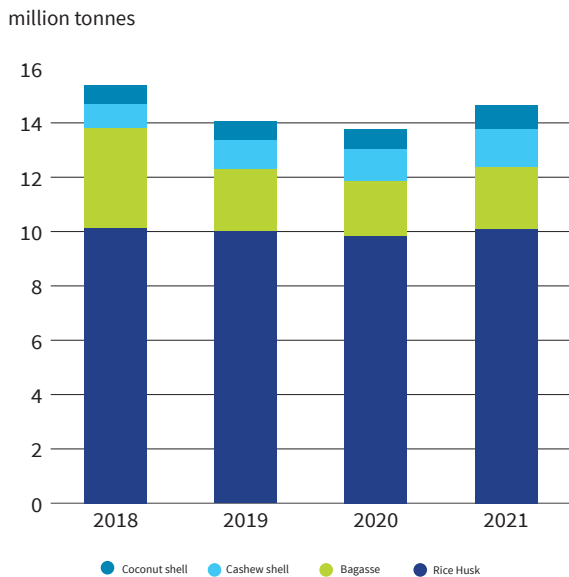


More information: www.czarnikow.com/solutions

Southeast Asia

Global biomass demand has nearly trebled over the past 10 years. Asia has contributed significantly to this as Japan and South Korea have introduced subsidies to replace coal usage. Other Asian countries have stepped in to meet this demand, providing exports from Thailand, The Philippines, Indonesia and Malaysia.

AGRICULTURAL BIOMASS POTENTIAL IN VIETNAM



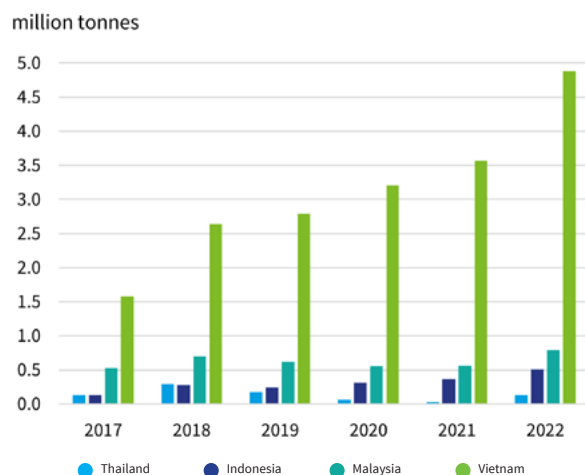
GLOBAL SCALE AND REACH

With five offices in Asia, CZ deploys our full range of services in the region for biomass, for which there is huge potential. Being close to the equator, the forestry and agricultural sectors are highly productive, and considerable volumes of underutilised biomass are generated. According to the International Renewable Energy Agency (IRENA), Bioenergy has the potential to become the largest energy source in the total energy mix in Southeast Asia, accounting for over 40% of total primary energy by 2050.

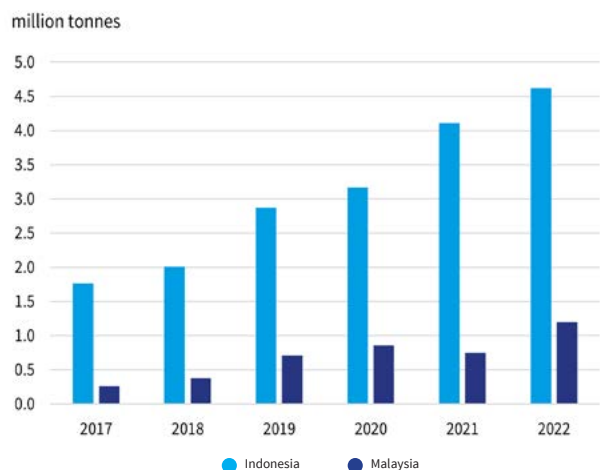
As the world's largest exporter of wood chips and second-largest exporter of wood pellets, Vietnam has seen significant increases in both volume and revenue in recent years and is a key focus for CZ. With a plentiful supply of domestic, fast-growing wood, as well as wood residues from processing and furniture industries, the wood pellet industry exported 4.6 million tonnes in 2022 and is growing rapidly. While this represents 81% of the regions wood pellet exports, there is more biomass potential in other parts of the continent such as Indonesia, Thailand, Singapore and Malaysia.

With expertise in physical trading, financing and advisory, we support our clients in their projects offering new biomass solutions and new volumes to the growing markets while exerting more efficient loading operations and more economical shipping solutions.

SOUTHEAST ASIA'S EXPORTS OF WOOD PELLETS



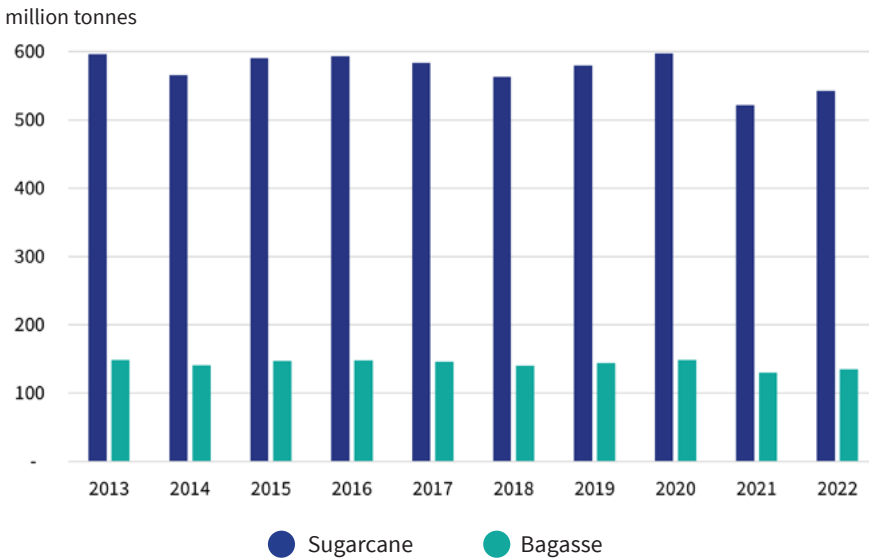
SOUTHEAST ASIA'S EXPORTS OF PALM KERNEL SHELLS



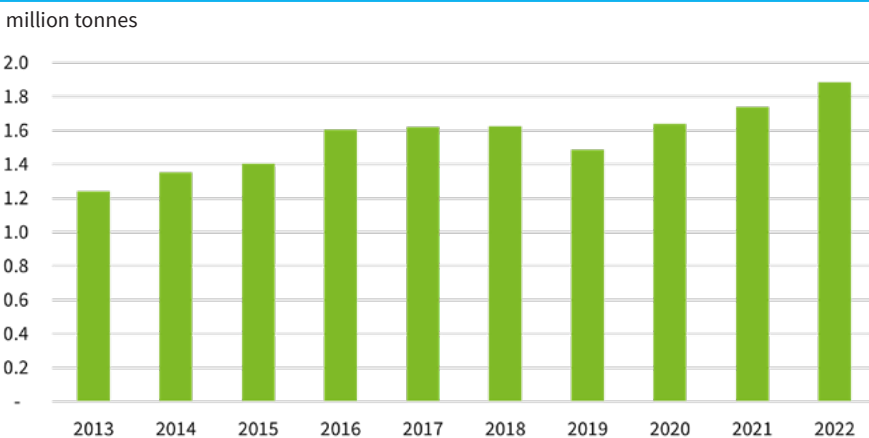
Americas

Brazil has been the starting point for our energy and biomass journey, given our strong local presence, our long-standing relationships with Brazilian sugar mills and the country’s status as a world leader in renewable energy. Sugarcane is used to produce both sugar and ethanol. As Brazil is one of the world’s leading sugar producers, a large volume of bagasse is produced annually from both the sugar and ethanol production processes.

SUGARCANE AND BAGASSE PRODUCTION IN BRAZIL



WOOD CHIP EXPORTS FROM BRAZIL



6M+

TONNES/YEAR OF BIOMASS CONSUMED IN COGENERATION PROJECTS ADVISED BY CZ

550+ MW

INSTALLED CAPACITY OF COGENERATION PROJECTS ADVISED BY CZ

40,000+

TONNES OF BAGASSE TRADED IN 2021 & 2022

CZ is the leading M&A financial advisor in the biomass cogeneration space. CZ has been developing relationships with Brazilian mills for many years in sugar and ethanol. Today, we can advise on their entire operations – helping mills decide the best moment to produce ethanol, sugar and electricity.

Our intention is to optimise biomass value chains to replace the usage of fossil fuels for steam generation. We work with mills to create surplus of bagasse as a alternative of biomass energy for power and green steam. We also facilitate investments in steam production, leading to more biomass production and a higher yield of energy produced by that biomass. Additionally, we advise the sugar mills on capital raising (equity or debt) to fund investments in cogeneration and/or energy efficiency.



More information and sources: www.czarnikow.com/energy/biomass

Our biomass team

LOCAL AND GLOBAL

Our teams are based in and near key biomass producing regions and work together to give you expertise in local and global markets.

CZ WORLDWIDE

350+

EMPLOYEES

2X

PLANNED EMPLOYEE GROWTH

30

LANGUAGES



Nicholas Wainwright

Director - Head of Asia
Singapore



Tiago Medeiros

Director - Head of Brazil
Sao Paulo



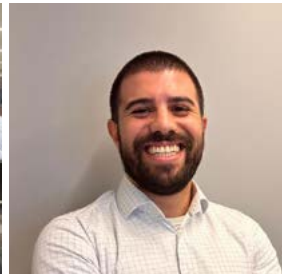
James Brittain

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About the images

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Close up of a pile of wood chips.

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Paddy field in Thailand.

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Coffee husks ready to be composted.

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Close up of a coconut shell.

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Bagasse, waste of sugarcane.

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Golden rice husks,

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Sugarcane field with plants growing.

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Close up of palm tree bark.





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Dubai, Guangzhou, Guatemala
City, Ho Chi Minh City, Hyderabad,
London, Manila, Medellín, Mexico
City, Mato Grosso do Sul, Miami,
Milan, Minas Gerais, Nairobi, Point
Lisas, São Paulo, Singapore and
Tel Aviv.

20 COUNTRIES

We are represented in 20 countries around the world and have a strong global presence across key trading routes. We work with sugar, food ingredients, packaging and energy products, moving over 6 million tonnes of product annually.



More office addresses:
www.czarnikow.com/contact