

# FOCUS

**BIOMASS**

APRIL 2019



## INTRODUCTION



Capitalize on the growing in popularity of biomass for power and heat generation. Versatile and a common by-product of many activities, biomass is at the heart of international efforts to increase the use of renewable and sustainable energy sources.

At the same time, the industry is closely controlled, and biomass and biofuel products must meet a host of quality, sustainability and safety parameters.

Quite literally, biomass is a growth industry. Wood, agricultural crops and waste all have a role to play in securing the future of the energy supply chain.

As countries around the world reduce reliance on fossil fuels, so the market for innovative products increases. Biomass is increasingly the fuel of choice of new CHP plants, across Europe, North America, with interest growing across Asia and South America.

In a cost sensitive sector, domestic and export markets thrive, but fluctuate. Biomass offers not only a green future for energy production but also a real opportunity for diversification for landowners – as suppliers or users of biomass.

To support the sector, in established and evolving markets, we have brought together details of our operation in this 'Focus on Biomass' to give you access to the best support in the most appropriate location, and to help you optimize your profits.

Meet our teams and learn about our capabilities around the world. We hope you enjoy the articles and that you'll get in touch with our teams soon.

*SGS Biomass Team*

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## OUR BIOMASS SOLUTIONS

At SGS, we have extensive experience and expertise in testing, inspection, certification and verification for solid biomass. We provide solutions along the entire value chain, helping you to ensure transparency, demonstrate compliance, improve quality and maximize profits.

Pioneering in the development of systems that recognize biomass sustainability, our verifications act as independent documentation that products are sustainably produced and supplied. They can be customized to suit end-user requirements and meet the demands of local legislation.

### TESTING

With state-of-the-art instrumentation and quality control procedures, we offer a broad range of testing and analytical services for solid biomass:

- Moisture
- Proximate analysis
- Ultimate analysis
- Calorific values
- Halogens
- Major Elements (MAA)
- Minor Elements (Trace)
- Mechanical durability
- Bulk density
- Biomass content
- Length & diameter
- Particle size distribution
- Ash melting behaviour (AFT's)
- DNA (Rice husk)

As specialists in this field, our biomass and biofuel testing facilities have a suite of specific tests registered to ISO/IEC 17025.

### INSPECTIONS

At every stage of the value chain, our global network of inspectors conduct inspections including:

- Sampling (ISO 18135:2017)
- Draft survey
- Cargo superintendence
- Stockpile survey
- Volumetric assessments
- Bias testing
- Mechanical Sampling System (MSS) design and installation
- Fumigation
- Gas free

### CERTIFICATION & VERIFICATION

Demonstrating and proving the quality, quantity, origin and sustainability of biomass is a legal requirement for many markets. Our global network of auditors offers audit, certification and verification against standards including:

Certification:

- Forest management certification (FSC, PEFC, SFI)
- Chain of custody certification (CoC)
- ENplus® certification
- Goodchips®
- ISCC Plus

Verification:

- Customized audit solutions
- Sustainability report assurance
- GHG assessments
- Carbon credit certification
- Environmental impact assessments
- EUTR DD

Our experts have been involved in every aspect of biofuel production since the 1990s. We monitor all aspects of the biomass and biofuel supply chain, from forest and farm to fuel. Both in the field and in the laboratory, we have combined expertise to deliver quality, efficiency and transparency throughout the custody chain.

#### JAMIE FISHER

*Global Business Manager*

#### SJOERD HOLTZER

*Customer Care Coordinator*

### CONTACT US

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 <http://www.sgs.com/biomass>

 [SGS Agriculture & Food](#)

# SGS NETWORK



## ITALY

Ambitious targets for the use of renewable energy are creating opportunities for biomass operators in Italy to increase production to meet growing demand in both local and international markets.

Italy's wood pellet consumption has risen to over 3 million metric tonnes, having the highest number of installed stoves in Europe. Quality and appearance play an important role in consumer's minds. The smaller (renewable energy) industrial sector utilizes woodchips, mainly from local resources.

Highly trained and with extensive experience, we offer inspection, testing, sampling and forest audit services across the country.

### INSPECTION SERVICES

Ensuring the quality, weight, volume and cleanliness of cargoes, we offer a range of in-port inspection services:

- Carrier cleanliness
- Draft survey
- Cargo superintendence
- Weighing supervision
- Sampling – in accordance with ISO 18135

### TESTING SERVICES

The team based at our ISO/IEC 17025 accredited laboratory in Genoa conduct testing against all the most common biomass parameters, as specified by power plants. These include:

- Moisture
- Proximate analysis

- Ultimate analysis
- Calorific values
- Halogens (chlorine)
- Mechanical durability
- Bulk density
- Length & diameter
- Particle size distribution
- Ash melting behaviour (AFT's)

### OTHER SERVICES

- Forest audits and certification

We look forward to supporting your biomass operations.

#### DAVIDE BUSANI

*Business Manager*

#### NUNZIO DELVECCHIO

*Trade & Logistics Manager*



## NETHERLANDS AND BELGIUM

Operating as a single region, our teams in Belgium and The Netherlands deliver a broad range of biomass testing and inspection services.

### TESTING SERVICES

In Flushing, The Netherlands, our energy laboratory is fully equipped and includes a dedicated preparation area. We offer biomass testing and analysis services on wood, energy crops, residues from processing/harvesting and waste, including:

- Moisture
- Proximate analysis
- Ultimate analysis
- Calorific values
- Halogens (chlorine, fluorine, bromine)
- Major Elements (MAA)
- Minor Elements (Trace)

- Mechanical durability
- Bulk density
- Biomass content
- Length & diameter
- Particle size distribution
- Ash melting behaviour (AFT's)

### ACCREDITATION

Our laboratory is ISO 17025 accredited by BELAC, Belgium's accreditation body, with a wide scope.<sup>1</sup>

### INSPECTION SERVICES

Protecting the safety, integrity and quality of your biomass we offer a wide range of inspection services within the ARA area – Amsterdam (NL), Rotterdam (NL) and Antwerp (BE). These include:

- Draft survey
- Cleanliness inspection

- Weighing supervision
- Cargo superintendence
- Stockpile survey
- Volumetric assessments
- Sampling in accordance with ISO 18135

### COMPLEMENTARY SERVICES

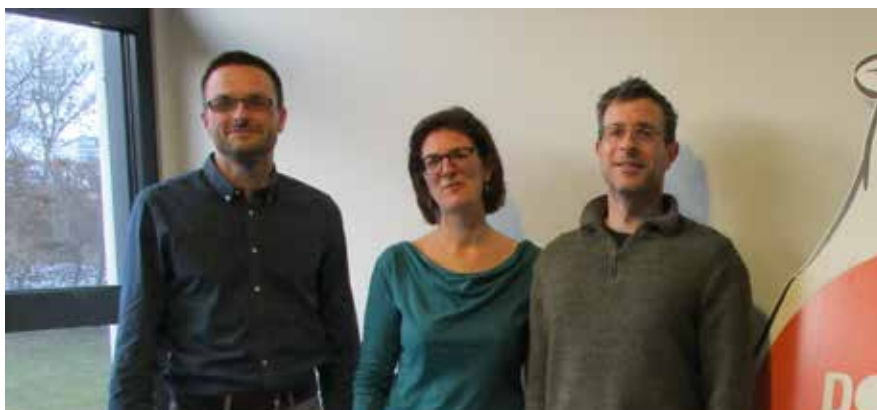
Biomass sustainability services include a number of specialist services that verify and assure quality, quantity and environmental credentials:

- Greenhouse gas (GHG) verifications
- Renewable obligation orders
- ISCC plus – International Sustainability and Carbon Certification
- RED – Renewable Energy Directive
- Third party audits
- Biogenic CO<sub>2</sub> determination – quantification of biogenic and fossil fuels for emissions calculations

Contact our team today to find out how we can support your biomass business.

<sup>1</sup>[https://ng3.economie.fgov.be/NL/belac/labotesting/applic/accredited\\_en.asp?certificatienummer=005-TEST](https://ng3.economie.fgov.be/NL/belac/labotesting/applic/accredited_en.asp?certificatienummer=005-TEST)

### BELGIUM TEAM



#### FRANS VAN CROONEBORG

*Business Manager*

#### FRANCOIS DUCARME

*Competence Leader Biomass*

### THE NETHERLANDS TEAM



# UK

The UK is the world's dominant consumer of wood pellets, with volumes anticipated to rise to more than 12 million metric tonnes in coming years. This is because biomass has an increasingly important role to play in UK targets to eliminate coal by 2025 and complete decarbonization (no gas) by 2050.

Highly trained with extensive experience, we offer full cargo inspection and testing services with 24/7 coverage across all UK ports and locations.

Whilst there is domestic wood pellet production, this is related to premium pellets for the commercial and residential markets and so utilities increasingly rely on imports.

## INSPECTION SERVICES

On a daily basis, our local teams conduct biomass inspections, including:

- Draft survey
- Cleanliness inspection
- Weighing supervision
- Cargo superintendence
- Volumetric assessments
- Stockpile survey
- Sampling in accordance with ISO 18135

## TESTING SERVICES

ISO 17025 accredited, our testing services include all the standard parameters required by utility companies and power generators, such as:

- Moisture
- Proximate analysis
- Ultimate analysis

- Calorific values
- Halogens (chlorine, fluorine, bromine)
- Major Elements (MAA)
- Minor Elements (Trace)
- Bulk density
- Biomass content
- Length & diameter

## OTHER SERVICES

- ENplus® certification
- Goodchips®
- ISCC

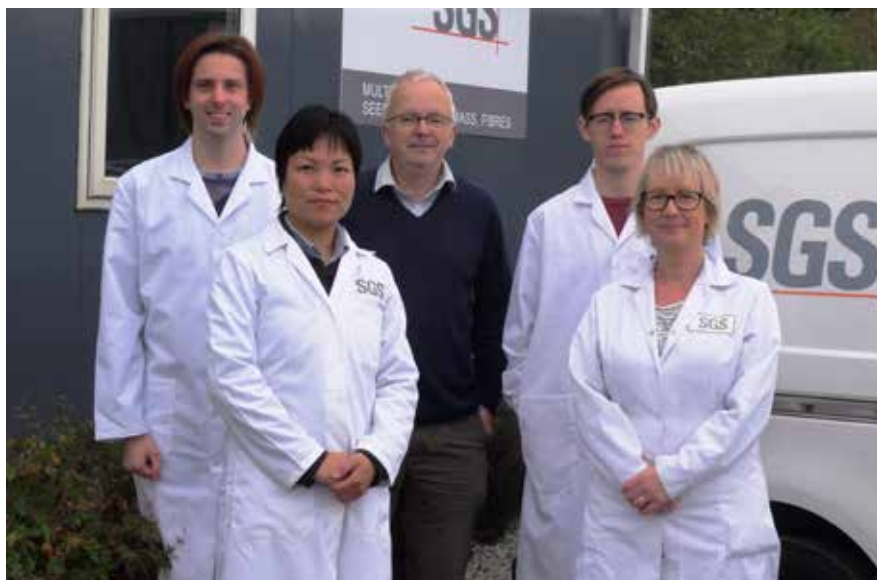
Find out how our services can benefit your biomass operations. Contact us today.

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## BLANE PATERSON

*Business Manager*

## DRIFFIELD TEAM



## LATVIA, LITHUANIA & ESTONIA

Working together, our teams in Estonia, Latvia and Lithuania deliver a broad range of services to the local biomass industry.

Leading the way, Estonia has set ambitious targets for renewable energy. In 2020 the country wants 25% of energy to be derived from renewable energy sources. The country's parliament has adopted a resolution supporting renewable energies, energy sources and, in particular, biomass.

Latvia's producers service a predominantly export market while in Lithuania producers are more focused on domestic supply.

### LABORATORY SERVICES

ISO 17025 accredited and with state-of-the-art equipment, our laboratory in Riga, Latvia offers a broad range of biomass testing and analytical services.

These include:

- Moisture
- Proximate analysis
- Ultimate analysis
- Calorific values
- Halogens (chlorine)
- Major Elements (MAA)
- Minor Elements (Trace)
- Mechanical durability
- Bulk density
- Length & diameter
- Particle size distribution
- Ash melting behaviour (AFT's)

### INSPECTION SERVICES

Our local teams are conducting biomass inspections on a daily basis and we have ISO 17020 inspection body accreditation in Latvia. We conduct:

- Draft survey
- Cleanliness inspection
- Weighing supervision
- Stockpile survey
- Cargo superintendence
- Volumetric assessments
- Bias testing
- MSS design and installation
- Sampling in accordance with ISO 18135

From woody biomass and waste, to grains and their oils, our local team help clients to identify products suitable for biomass and take advantage of the opportunities that exist.

We look forward to your call, and helping you make the most of the biomass market.

### ALEXANDER KLUEV

*Sub-Regional Manager Baltic States*





## RUSSIA

Testing and inspecting biomass cargoes, our teams in Russia are integral to the country's biomass market, domestic and international.

### TESTING SERVICES

At our St. Petersburg laboratory, with state-of-the-art equipment, we offer a broad range of testing and analytical services for biomass, including:

- Moisture
- Proximate analysis
- Ultimate analysis
- Calorific values
- Halogens (chlorine, fluorine)

- Major Elements (MAA)
- Minor Elements (Trace)
- Mechanical durability
- Bulk density
- Length & diameter
- Particle size distribution
- Ash melting behaviour (AFT's)

### INSPECTION SERVICES

Across a wide geographic area, we offer a range of inspection services.

- Draft survey
- Cleanliness inspection
- Weighing supervision

- Cargo superintendence
- Stockpile survey
- Sampling in accordance with ISO 18135

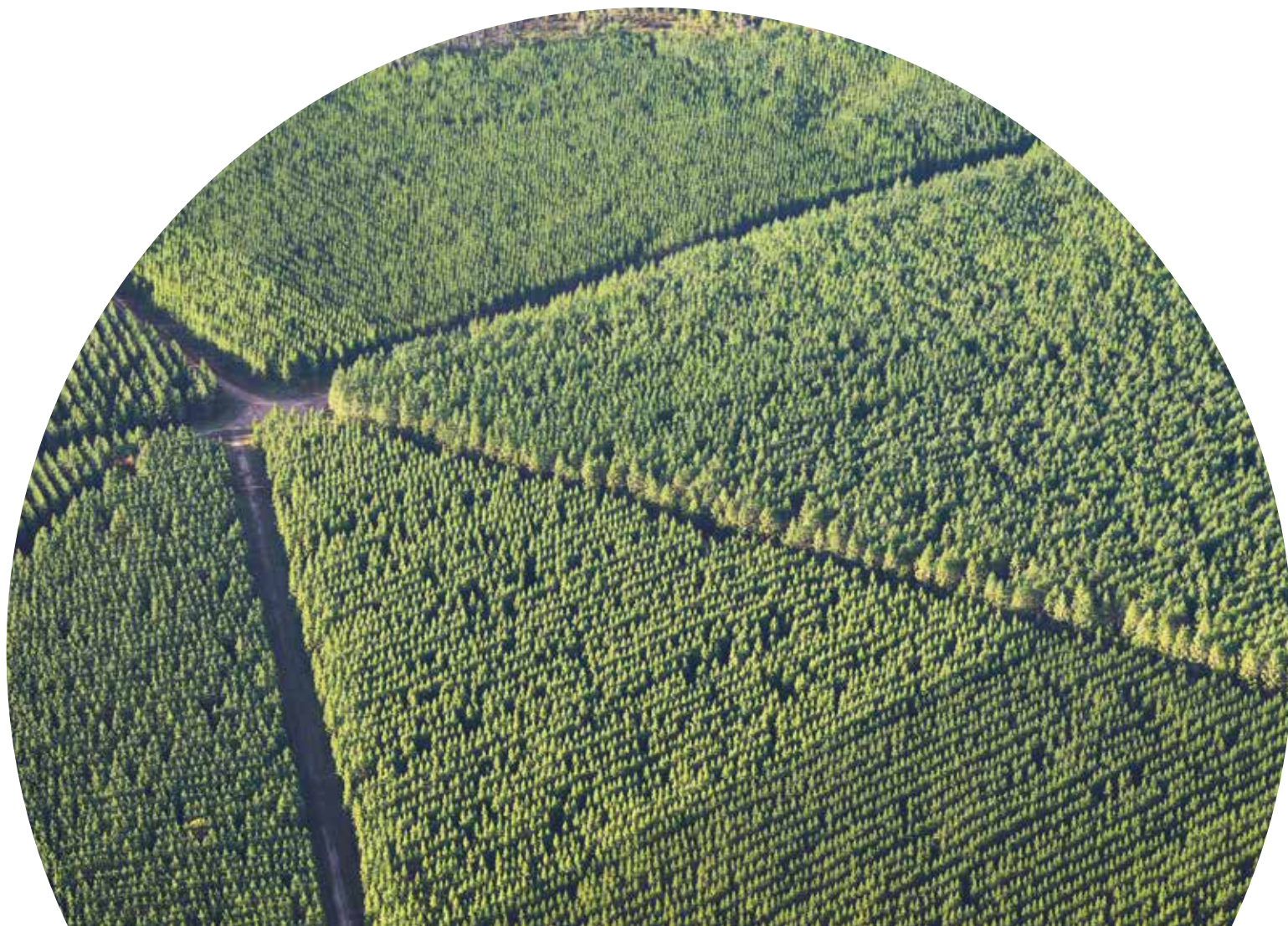
### EXPORT MARKETS

Russia exports in the region of 1 million metric tonnes of wood pellets annually.

Discover how our expertise can help you grow your biomass business. Contact us today.

### ALEXANDER LIKHOPUD

*Business Manager*



## SPAIN

Spain has set an ambitious goal where renewable energy and decarbonization. The intention for the next decades is to reduce CO2 emissions around 42% by 2030 and increase the share of renewable energy by 32%.

This is among the reasons, that the biomass industry is growing heavily every year. In 2018, biomass generated many new job opportunities and revenues, with more installations than ever connected to the energy pool.

SGS Spain has not been left behind in this trend, our great team of professionals perform inspections on all different types of biomass and we provide our services in over 20 ports

within the country. We have also recently opened analysis and preparation facilities, with the objective to provide a comprehensive and efficient service to our customers.

### INSPECTION SERVICES

- Draft survey
- Weighing supervision
- Sampling – in accordance with ISO 18135
- Cleanliness inspection
- Cargo superintendence
- Stockpile survey
- Volumetric assessments

### TESTING SERVICES

- Moisture
- Proximate analysis
- Bulk density
- Length & diameter
- Particle size distribution

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### DAVID LOPEZ ALVAREZ

*Business Manager*

### HUELVA TEAM



## USA

In the USA, we deliver a range of biomass services to support strong domestic demand and busy international markets.

Operating a network of 17 facilities across the United States, our local experts, ensure the quality and quantity of biomass and biomass products for clients the world over. Last year we inspected various forms of solid biomass including – wood chips, wood pellets and fuel wood (logs, billets, twigs and faggots, etc.) – across 15 states.

From sampling to surveys, we offer an extensive range of services to operators.

### LABORATORY SERVICES

We offer the broadest range of sampling and testing services, all carried out in accordance with ISO methods. Our biomass analyses include:

- Moisture
- Proximate analysis
- Ultimate analysis
- Calorific values
- Mechanical durability
- Bulk density
- Length & diameter
- Particle size distribution

### FIELD & MARINE SERVICES

Beyond the laboratory, our local teams offer the following services in port:

- Draft survey
- Cleanliness inspection
- Weighing supervision
- Cargo superintendence
- Stockpile survey
- Sampling in accordance with ISO 18135, TAPPI and SCAN methodologies

### HEALTHY EXPORTS

Recent figures reveal that wood pellet exports from the US total 5.2-5.5 million metric tonnes with the majority, 4.8 million metric tonnes, destined for the UK, Belgium and Denmark. In the wood chip market, some 442,000 metric tonnes of hardwood chips were exported last year. Soft wood chip exports were significantly higher, 3.1 million metric tonnes, destined for Japan, China, Canada and Turkey.

#### CARLOS CORDOBA

*Trade Director*

#### THOMAS SLOAN

*Trade Director*



## CANADA

Testing and rapid reporting services, based in Delta, British Columbia, offer Canada's biomass industry quick and easy access to international markets.

From our Standards Council of Canada (SCC) and ISO/IEC accredited laboratory we provide an extensive suite of analytical services for solid biofuel samples. We have the latest technologies, a state-of-the-art laboratory, and experienced staff.

Operating seven days a week, to match the port's loading schedules, we conduct testing, supported by rapid reporting using a CCLAS laboratory management system.

### TESTING CAPABILITIES

We offer a range of testing services using ISO/EN and ASTM standardized methods, including:

- Moisture
- Proximate analysis

- Ultimate analysis
- Calorific values
- Halogens (chlorine, fluorine)
- Mechanical durability
- Bulk density
- Length & diameter
- Particle size distribution
- Ash melting behaviour (AFT's)

### INSPECTION SERVICES

Across a wide geographic area, we offer a range of inspection services.

- Draft survey
- Cleanliness inspection
- Weighing supervision
- Cargo superintendence
- Stockpile survey
- Sampling in accordance with ISO 18135

### CERTIFICATES & REPORTING

Meeting the demands of clients and regulators we deliver certificates and reports in a number of formats – to ensure you receive the most appropriate option:

- Certificates and e-certificates – on SGS security paper, via SGSonSITE, or via email (compliant with eUCP rules)
- Reports of analysis
- SLIM data export

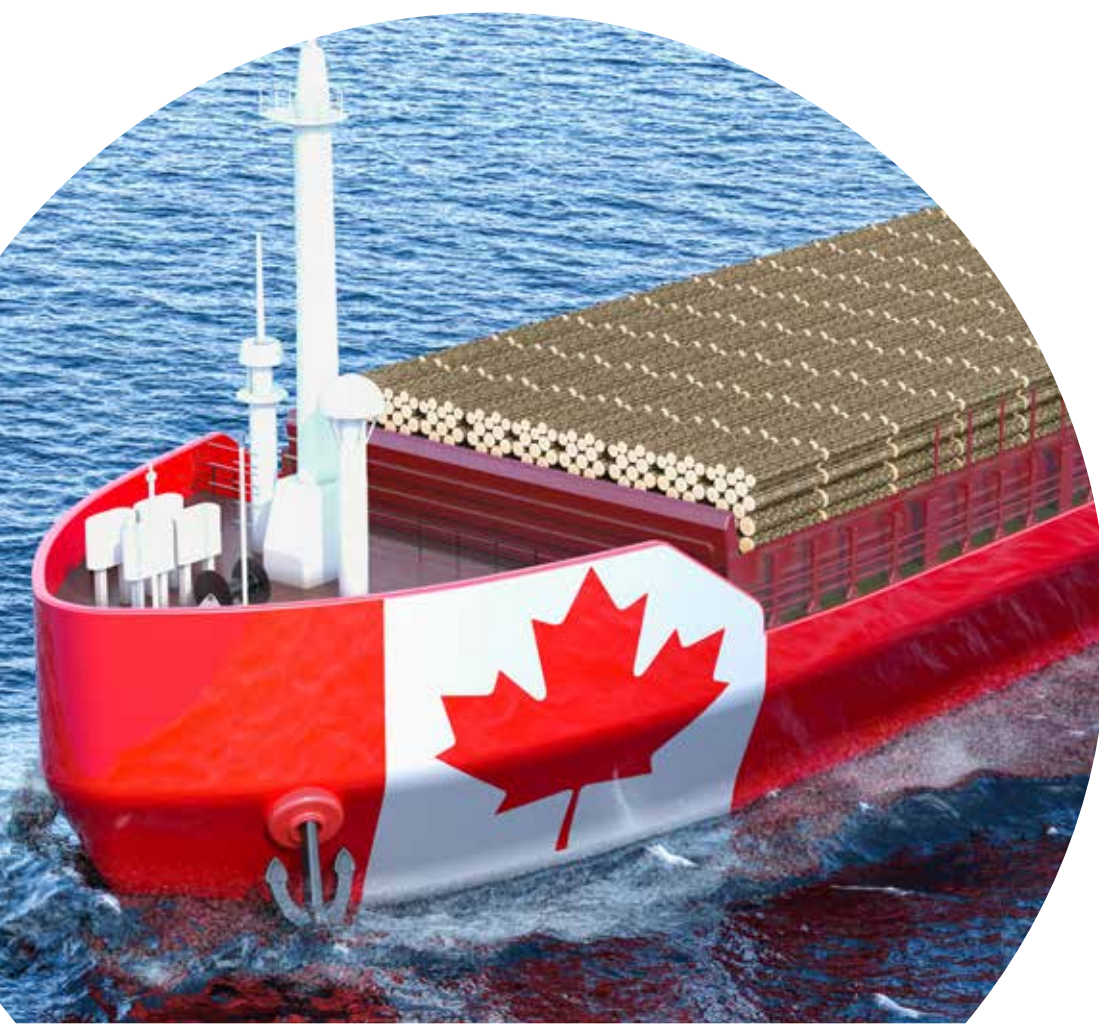
In 2018, we issued certificates for around 2 million metric tonnes of wood pellets shipped through Fibreco Port and Westview Port, both located in British Columbia.

We are also the only approved laboratory in Canada to perform ENplus® certification testing services.

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### MIKE BRYAN

*Group Manager*



## BRAZIL

Operating across the country, our teams in Brazil inspect and test biomass products destined for markets including the USA, China and Japan.

The two most important markets for Brazil's forest products are pulp and charcoal. Fuelwood is the country's principle energy source for drying and processing grains and soya. However, export markets are growing. In January 2018 Brazilian exports of wood products increased 28.8% in value compared to January 2017 – a small but increasingly important component of this growth is biomass, in the form of wood chip. Wood pellet production for the export market is also increasing.

Delivering services to local and export markets, our team in Brazil operate two

laboratories – in Rio Grande and Santana – offering sample preparation, analytical testing and a range of supervisory services.

### TESTING

Our biomass grading facilities are strategically located for quick turnaround on the export market, delivering prompt analysis of physical parameters of logs and woodchip such as:

- Moisture
- Bulk density
- Particle size distribution

### INSPECTION SERVICES

Our team provides a full range of inspection solutions against wood chips,

wood pellets, logs and sugar cane bagasse pellets in Brazil.

- Draft survey
- Cleanliness inspection
- Weighing supervision
- Cargo superintendence
- Stockpile survey
- Sampling in accordance with ISO 18135

Contact us today and learn more about our services and how they can benefit your biomass operations.

### PEDRO SOARES

*Commercial Manager*

### BARUERI TEAM



# VIETNAM

Our local team in Vietnam are proud to offer a full range of inspection, testing, fumigation and certification services across the country.

Our operations are strategically located for local and export markets and deliver a full range of services to support the country's biomass operators.

In 2018, the country produced more than 2 million tons of biomass, the majority of which was destined for export markets. The biggest importers of Vietnamese biomass are South Korea and Japan.

### INSPECTION SERVICES

Ensuring the weight, volume and cleanliness of cargoes, we offer a range of inspection services:

- Draft survey
- Cleanliness inspection
- Weighing supervision

- Cargo superintendence
- Stockpile survey
- Sampling in accordance with ISO 18135

### TESTING SERVICES

From our laboratories in Quang Ninh and Hai Phong, we deliver testing against all the common parameters required by power plants:

- Moisture
- Proximate analysis
- Ultimate analysis
- Calorific values
- Halogens (chlorine, fluorine, bromine)
- Major Elements (MAA)
- Minor Elements (Trace)
- Mechanical durability
- Bulk density

- Length & diameter
- Particle size distribution
- Ash melting behaviour (AFT's)

### OTHER SERVICES

- Fumigation
- Certification

Employing more than 40 chemists, technicians, quality assurance officers, administrators and managers, our team operates from two laboratories, in Quang Ninh and Hai Phong, and a sales office in Ho Chi Minh City with inspection pools deployed across the country at all major biomass growing regions, production facilities and loading ports.

Contact us to find out how we can support your biomass operations.

### TRUONG MACH

*Product Manager Fibre & Biomass*

### HAI PHONG LABORATORY



### QUANG NINH LABORATORY



### SALES AND OPERATIONS



## INDONESIA

In a country rich with forests, biomass is a growing industry – serving domestic and international markets alike.

From a network of strategically located facilities, we deliver a wide of testing, inspection and sampling services to the country's biomass operators. From wood chips and waste from the sugar and palm oil industries, SGS offers an extensive range of services to help mitigate risk, demonstrate compliance and maximize profits.

### TESTING

From our laboratory in Samarinda we deliver testing against all the common parameters required by power plants:

- Moisture
- Proximate analysis
- Ultimate analysis
- Calorific values

### INSPECTIONS

Conducting biomass inspections daily, our local team offer services including:

- Draft survey
- Cleanliness inspection
- Weighing supervision
- Cargo superintendence
- Stockpile survey
- Sampling in accordance with ISO 18135

In 2018, our teams inspected almost 300,000 metric tonnes of biomass, the majority of which was destined for export. Japan received biomass imports of 248,601 metric tonnes inspected by SGS and Europe 22,201 metric tonnes.

Contact us to find out how our services can benefit your biomass operations.

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### ERIK ERANLANGI

*Operation Supervisor*



## KOREA

From our accredited laboratory in Busan, we sample and test a wide range of biomass products.

Supporting Korea's biomass industry, which grew 28% in 2018 to more than 3.1 million metric tonnes, our experts sample and conduct testing on the widest range of biomass materials:

- Wood pellets
- Wood chips
- Palm kernel shells

### TESTING

From our laboratory in Busan we deliver testing against all the common parameters required by power plants:

- Moisture
- Proximate analysis
- Ultimate analysis

- Calorific values
- Halogens (chlorine)
- Major Elements (MAA)
- Minor Elements (Trace)
- Mechanical durability
- Bulk density
- Biomass content
- Length & diameter
- Particle size distribution
- Ash melting behaviour (AFT's)
- DNA (Rice husk)

### INSPECTION SERVICES

Across a wide geographic area, we offer a range of inspection services.

- Draft survey
- Cleanliness inspection

- Weighing supervision
- Cargo superintendence
- Stockpile survey
- Sampling in accordance with ISO 18135

### ACCREDITATION

Our Busan laboratory is ISO 17025 accredited, awarded by the Korean Laboratory Accreditation Scheme (KOLAS).

Find out how our services can benefit your biomass operations. Contact us today.

### WOONGPYO HONG

*Business Manager*

### BUSAN LABORATORY





[WWW.SGS.COM](http://WWW.SGS.COM)

WHEN YOU NEED TO BE SURE

