



CERTIFICATE OF ACCREDITATION

This is to attest that

TPCU, INC. DBA BIOMASS ENERGY LAB, INC.

OFFICE: 100 KEDRON DRIVE, PEACHTREE CITY, GEORGIA 30269, U.S.A.

LABORATORY: 1641 SIGMAN ROAD, CONYERS, GEORGIA 30012, U.S.A.

Testing Laboratory TL-516

has met the requirements of AC89, *IAS Accreditation Criteria for Testing Laboratories*, and has demonstrated compliance with ISO/IEC Standard 17025:2017, *General requirements for the competence of testing and calibration laboratories*. This organization is accredited to provide the services specified in the scope of accreditation.

Effective Date June 7, 2022



A handwritten signature in black ink, reading "Raj Nathan".

President

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

TPCU, INC. DBA BIOMASS ENERGY LAB, INC.

www.biomassenergylab.com

Contact Name Chris Wiberg

Contact Phone +1-770-922-8000

Accredited to ISO/IEC 17025:2017

Effective Date June 7, 2022

Physical	
ASTM D1102	Standard test method for ash in wood
ASTM D1857	Standard test method for fusibility of coal and coke ash
ASTM D4208	Standard test method for total chlorine in coal by the oxygen bomb combustion/ion selective electrode method
ASTM E711	Standard test method for gross calorific value of refuse – Derived fuel by the bomb calorimeter
ASTM E871	Standard test method for moisture analysis of particulate wood fuels
ASTM E873	Standard test method for bulk density of densified particulate biomass fuels
CEN/TS 15370-1	Solid biofuels - Method for the determination of ash melting behavior - Characteristic temperatures method
EN 14774-1	Solid biofuels - Determination of moisture content - Oven dry method part 1: Total moisture - Reference method
EN 14774-3	Solid biofuels - Determination of moisture content - Oven dry method part 3: Moisture in general analysis sample
EN 14775	Solid biofuels - Determination of ash content
EN 14780	Solid biofuels - Sample preparation
EN 14918	Solid biofuels - Determination of calorific value
EN 15103	Solid biofuels - Determination of bulk density (except section 6.1.2 large container)
EN 15104	Solid biofuels - Determination of total content of carbon, hydrogen and nitrogen - Instrumental methods
EN 15148	Solid biofuels - Determination of the content of volatile matter
EN 15149-2	Solid biofuels - Determination of particle size distribution - Vibrating screen method using sieve apertures of 3, 15 mm and below
EN 15210-1	Solid biofuels - Determination of mechanical durability of pellets and briquettes part 1: Pellets

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

EN 15289	Solid biofuels - Determination of total content of sulfur and chlorine
EN 15290	Solid biofuels – determination of major elements – Al, Ca, Fe, Mg, P, K, Si, Na and Ti
EN 15297	Solid biofuels – determination of minor elements – As, Cd, Co, Cr, Cu, Hg, Mn, Mo, Ni, Pb, Sb, V and Zn
EN 16126	Solid biofuels - Determination of particle size distribution of disintegrated pellets
EN 16127	Solid biofuels - Determination of length and diameter of pellets
ISO 540	Hard coal and coke - Determination of ash fusibility
ISO 14780	Solid biofuels – Sample preparation
ISO 16948	Solid biofuels - Determination of total content of carbon, hydrogen and nitrogen
ISO 16967	Solid biofuels – determination of major elements – Al, Ca, Fe, Mg, P, K, Si, Na and Ti
ISO 16968	Solid biofuels – determination of minor elements
ISO 16994	Solid biofuels - Determination of total content of sulphur and chlorine
ISO 17827-2	Solid biofuels - Determination of particle size distribution for uncompressed fuels. vibrating screen method using sieves with aperture of 3,15 mm and below
ISO 17828	Solid biofuels – Determination of bulk density (except section 5.1.2 large container)
ISO 17829	Solid biofuels - Determination of length and diameter of pellets
ISO 17830	Solid biofuels - Particle size distribution of disintegrated pellets
ISO 17831-1	Solid biofuels - Determination of mechanical durability of pellets and briquettes - Pellets
ISO 18122	Solid biofuels - Determination of ash content
ISO 18123	Solid biofuels - Determination of the content of volatile matter
ISO 18125	Solid biofuels – Determination of calorific value
ISO 18134-1	Solid biofuels - Determination of moisture content - Oven dry method part 1: Total moisture - Reference method
ISO 18134-3	Solid biofuels - Determination of moisture content - Oven dry method part 3: Moisture in general analysis sample
ISO 18846	Solid biofuels - Determination of fines content in quantities of pellets
ISO 21404	Solid biofuels – Determination of ash melting behavior
PFI Standard	PFI standard specification for residential/commercial densified fuel (except annex C.1 – speed screener, and designation of grades)

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

ASTM – American Society for Testing and Materials

CEN/TS – European Committee for Standardization Technical Specification

EN – European Standards

ISO – International Organization for Standardization

PFI – Pellet Fuels Institute