



FutureMetrics LLC

8 Airport Road
Bethel, ME 04217, USA

FutureMetrics – Overview

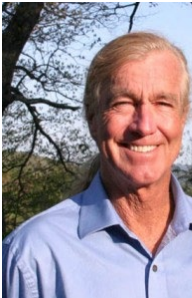

FutureMetrics is the leading global consultancy in the wood pellet sector. FutureMetrics provides information, analysis, operations guidance, due diligence services, and strategic advice to many of the world's leading companies who are in the wood pellet sector, or who are considering entering the sector.

FutureMetrics combines deep operational expertise, powerful sector focused financial modeling skills, and thought leading market awareness.

Our team's experience and expertise cover every part of the wood pellet supply chain. Key members of the FutureMetrics team are highlighted below. A selection of our current and recent clients is listed beginning on page three.

Since 2005 FutureMetrics has specialized in the wood pellet industry. FutureMetrics believes that the foundation for all biomass-based projects, from an environmental and an economic/business model point of view, must be the sustainability of the forests from which the raw materials are harvested. Continuously renewing forests and the preservation of the forest carbon stocks are essential for the support of the long-term security of project cash flows and the low carbon characteristics of the refined wood pellet fuel.

Key Members of the FutureMetrics team:

- William Strauss, MBA, PhD - William Strauss is the President and founder of FutureMetrics, LLC www.FutureMetrics.com. Bill is globally recognized as a leading expert in the wood pellet sector. Bill continues to be a thought leader in the sector and has published numerous papers on a variety of subjects relevant to the wood pellet sector. He is also a founder and a Director of Maine Energy Systems www.MaineEnergySystems.com, the largest manufacturer of European style automatic pellet fueled central heating systems in North America. Bill has been named as one of the most influential leaders in the biomass sector in 2016 and again in 2017 by Argus Media, and is the 2012 recipient of the International Excellence in Bioenergy award. Bill has more than forty years of strategic and policy planning, project management, data analysis, operations, and modeling experience in the renewable energy sector including 10 years operating large waste-to-energy plants in the 1980s. He has an MBA (specializing in finance) and a PhD (economics and earth systems science). 
- John Swaan – John, often called “the grandfather of North American wood pellets,” is widely recognized as one of the leading operations experts in the wood pellet sector. John's experience, wisdom, and history in pellet manufacturing is legendary. In 1994, John founded Pacific BioEnergy Corporation located in Prince George, British Columbia, where he successfully established one of Canada's leading wood pellet exporters. In 1996, John was instrumental in establishing the Wood Pellet Association of Canada and served as its executive director from 2005-2009. He manufactured and shipped the first ever transatlantic shipment of pellets from North America (to Sweden) in 1997. John joined FutureMetrics in 2012. He offers a broad range of wisdom and 



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skills key to the sector: from forest management and sustainability, to pellet manufacturing, to logistics optimization, to negotiating shipping contracts. John is the recipient of the 2014 Founders Award at the International Biomass Conference.

- Seth Walker, MS - Seth has extensive knowledge and experience in the bioenergy and forest products sectors. Prior to joining FutureMetrics, Seth spent seven years leading the bioenergy services team at RISI as their Senior Bioenergy Economist. Seth was the author of RISI's *North American Bioenergy Forecast* and the *Global Pellet Outlook* report. His previous experience also includes roles as an analyst of North American and international timber markets. Seth has presented at more than two dozen conferences in numerous countries across North America, Europe and Asia. Seth works in FutureMetrics consulting services and also is leading the development of new reports and products for the wood pellet sector. He holds a B.S. in Resource Economics and Commerce and an M.S. in Environmental and Natural Resource Economics from the University of Rhode Island.
- Laurenz Schmidt, MBA - Laurenz was the Chief of Global Operations and the Chief Technology Officer for Fairchild Semiconductor before his planned retirement in 2008. Since joining FutureMetrics in 2009 Laurenz has provided our team with business sensitive and rigorous material and energy balance analytical skills that complement his chemical engineering background. Laurenz holds a Diploma Degree Dipl.-Ing (FH) from the Technische Universität Mannheim in Chemical Engineering and an MBA in Technology Management from the University of Phoenix.
- Les Otten, BS (business administration) - Les is a successful businessman and a leader in the development of biomass thermal energy systems in the US. Les is the cofounder of Maine Energy Systems. Les brings a lifetime of entrepreneurial and deal making experience to our team. Les is involved in every M&A project FutureMetrics engages in. Les is also our government affairs leader. He has direct access to many federal and state political leaders. Before joining FutureMetrics, Les was the CEO of American Ski Company and was an owner and the Vice Chairman of the Boston Red Sox.
- Nicholas Morrill, Attorney at Law - Nick focuses his business services practice on representing partnerships, nonprofit corporations, closely-held corporations and limited liability companies in entity selection, creation, acquisitions, sales, financing and mergers. Nick creates or reviews all of our proposals, agreements, and other legal documents. Nick received his Bachelor's degree from Bates College and his J.D. from the University of Maine Law School.





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A Selection of Current and Recent Clients of FutureMetrics (in alphabetical order):

- Arbaflame – Strategic guidance for developing projects to produce steam exploded pellets. (April 2018 and ongoing)
- Agrinika – Provide project feasibility analysis for a pellet project in Indonesia. (April 2015)
- Aroostook Band of Micmacs – Comprehensive feasibility study for a new pellet plant and conversion of tribal buildings to pellet heat. (July 2017)
- Australia, Government of New South Wales – Comprehensive analysis for the use of woody biomass and/or wood pellets in existing coal fired power stations. (July 2018 and ongoing)
- Ayo Biomass – Strategic guidance, market analysis, and onsite guidance of the construction of a new pellet production project in Vietnam. (April 2017 and ongoing)
- BFL Canada – Lead consulting role for the development of a captive insurance strategy for Canadian wood pellet manufacturers. FutureMetrics provided pellet sector specific training and guidance to BFL's loss control engineers. (October 2014- Decembe, 2016)
- BioDean – Due diligence for the investment team and then feasibility analysis and early stage project development guidance for a pellet manufacturing and export project in southeast Mexico. (November 2013)
- Biomass Thermal Energy Council – Ongoing analysis including recent detailed assistance with Senator Angus King's BTU Act. William Strauss is the chief economist for BTEC (2011 to present)
- Bridge Lane Capital – A detailed technical audit and a comprehensive information memorandum for the sale of their holdings in Bayou Wood Pellets, Louisiana. (October 2015)
- Carrier Group – Exclusive representative for the sale of the Corinth Maine wood pellet mill. (July 2018)
- Cate Street Capital – Feasibility study for a pellet manufacturing and export project in New Hampshire, US. (February 2012)
- Clean Energy Finance Corporation – Comprehensive analysis of the potential for co-firing wood pellets in Australia including a detailed technical analysis for power plant conversion costs and estimates of LCOE based on selected locations in Australia. (November 2016 to March 2017)
- Cosan – Technical and operations analysis and project operations guidance for a sugarcane by-product pellet production plant in Brazil. (October 2015, November 2016, May 2017)
- DiCarbon – Due diligence for the technical, logistical, and market characteristics for project development. (2011 by John Swaan prior to joining FutureMetrics)
- Diversified Port Holdings / Seaonus – Due diligence - Confidential. (July 2016)
- Doosan – FutureMetrics and Doosan formed, along with Ramboll, a strategic partnership for providing conversion and modification services to pulverized coal power stations for co-firing wood pellets. (April 2016 to March 2017)
- Drax Biomass – Strategic guidance and pellet market analysis - Confidential. (August 2015 to January 2018)
- EJ Carrier – Exclusive representative for the sale of the Corinth wood pellet mill. Produced detailed information memorandum. (August 2018)
- Ekman and Co AB – Sale of pellet production equipment. (October 2016)
- EMO – Evaluate torrefaction systems for EMO coal yard and power plants at the port of Rotterdam. (May 2014)
- Enviva – Confidential (July 2015, March 2018)
- Equis Pte. Ltd. – Market analysis for a potential pellet manufacturing project in southeast Asia. (September 2016)



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- GDF Suez – Due diligence for technical and operations characteristics for more than a dozen wood pellet manufacturing plants and/or new projects that were seeking long-term offtake with GDF. (2010-2011 by John Swaan prior to joining FutureMetrics)
- Groupe Lebel – Confidential. (November 2017 to February 2018)
- Fragrant Group – Pre-feasibility study for a pellet export project in Myanmar supplied by plantation grown wood. (June 2016)
- Fulghum Fibres – Led a project development team for a pellet manufacturing and export project in Maine, US, and delivered a shovel-ready project (June 2013 to January 2015) Performed due diligence valuation analysis for a prospective pellet plant acquisition. (July 2013)
- Hancock Lumber – Feasibility study for pellet manufacturing for the domestic US market in Maine. (January 2017)
- Hancock Natural Resources Group – Confidential (May 2015) and strategic guidance. (January 2017 and ongoing). HNRG has joined FutureMetrics and Ramboll to develop opportunities in the industrial wood pellet sector. (February 2017 and ongoing)
- Highland Wood Pellets – Confidential (January 2017)
- Holson Forest Products – Feasibility study and wood supply analysis for a sawmill and pellet manufacturing project in Newfoundland, Canada. Owner’s representative for finding investors for the project. (September 2012; October 2015)
- Interfor – Feasibility study for a wood pellet manufacturing and export project in southern British Columbia. (July 2013)
- International Timber Resources – Pre-feasibility study for a new pellet mill in the NE US. Leading the development (permitting, site, fiber supply, port, offtake) for ITR. (January 2018 and ongoing)
- Inversiones Volcan Choshuenco – Complete feasibility analysis for a CHP/pellet project in Chile co-located with a large eucalyptus plantation. (December 2014)
- Iogen Corp. – Pre-feasibility study for manufacturing and exporting pellets made from a by-product of a cellulosic ethanol process. (March 2014)
- Itochu – Confidential. (March 2018 and ongoing)
- JD Irving – Design and process flow advice for the reconstruction of a used pellet mill. (July 2017) Start-up training for new pellet mill (planned for 2019)
- Kirtland Pellets – Technical operations audit for improving pellet plant productivity. (August 2015)
- Lignetics – Market intelligence and analysis. (August 2018 and ongoing)
- Maine Energy Systems – Ongoing market analysis and strategic planning advice. Worked with state policymakers throughout the NE US to craft and implement incentive plans for new pellet boiler installations. (2008 to present)
- Maine Forest Service – Performed a complete audit of the 23 biomass thermal systems installed under MFS grants and created an interactive tool for viewing statistics and comparative charts. (February – June 2013, with follow-up update of the data, March 2015)
- Midwest Biomass Thermal Working Group and the Northeast Biomass Thermal Working Group – Wrote comprehensive “vision” reports on the biomass thermal markets and feedstock availability for both the NE and Midwest US working groups. (September 2010 and June 2013)
- Ministry of Forests, Province of Ontario – Feasibility study for new pellet production. (September 2015)
- Mitsubishi Research Institute – Forecast of delivered (CIF) pellet prices. (July 2018)
- Mitsui & Co. – Technical audit of existing pellet plant in Australia for potential acquisition. (July 2017); Due diligence regarding two greenfield pellet manufacturing projects. (November 2018)
- Mohegan Tribe, Northeast Wood Products (a Mohegan pellet manufacturing subsidiary) – Feasibility study for a wood pellet manufacturing and export project in the northeastern US and analysis of several



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potential acquisition targets. Market study of global pellet markets. (November 2013, October 2014, August 2016)

- National Renewable Energy Lab (NREL) – Feasibility study for the development of a wood pellet manufacturing project. (June 2013)
- Navigator Company (formerly Portucel) – Operations and technical audit for the Colombo 450,000 tonne per year pellet export project in South Carolina. (May 2016); Operations optimization at the Colombo plant. (February-March 2017)
- Nevelle-Smith Forest Products – Feasibility analysis for expanding pellet production in Tasmania. (November 2018)
- New South Wales, Australia, Department of Primary Industries – Comprehensive study of the efficacy of using NSW produced wood pellets in NSW coal power stations, and the potential for other biomass fuel strategies. (August 2018 to March 2019)
- Nomura Research Institute – Comprehensive report on the global pellet, PKS, and wood chip (for power) sectors. (February 2018)
- Norske Skog – Market analysis and strategic guidance. (June 2018)
- North Pacific Energy – Feasibility study and early phase development guidance. (June 2013)
- Northern Community Investment Corporation – Feasibility analysis and wood study for a wood pellet manufacturing project in northern Vermont, US. (March 2013)
- Northcrest Forest Products – Due diligence for the investment group and then feasibility analysis for a pellet manufacturing project in northern California. (February 2014). Managing the development process for a new ~200,000 tpy industrial pellet plant (wood procurement, early stage engineering, permitting, offtake). (June 2017 to December 2017)
- Northern Energy Solutions – Economic impact analysis for new pellet plant in New Brunswick Canada. Due diligence review of project design, equipment specifications, and financial models to verify expected production outputs and quality. (September 2015 and February 2016)
- Prodesa – FutureMetrics will provide all the startup training for new pellet plants built by Prodesa (beginning in February 2018). Financial analysis and mass and energy balance advice on an ORC turbine and low temperature belt dryer project at a pellet manufacturing plant in the northeast US. (May 2014) Operations guidance consulting for a pellet plant in Brazil. (August 2017)
- Ramboll - FutureMetrics and Ramboll have formed a strategic partnership for providing conversion and modification services to pulverized coal power stations for co-firing or full-firing wood pellets. (April 2016 and ongoing)
- ReGen Inc. - Feasibility study for a pellet manufacturing and export project in Maine, US. (April 2011)
- Rentech, Inc. – Identified, analyzed, and prioritized pellet producers for acquisition. Initiated and performed due diligence and preliminary valuation on the \$51 million acquisition of New England Wood Pellet. (March 2014)
- Romspen – Technical audit with a feasibility assessment for a pellet project in Ontario. (January 2015)
- Sewall – Pellet market study for a northeast US pellet project. (March 2017)
- Sumitomo Corporation – Due diligence for joint venture and continued support. Confidential (April to July 2016)
- Sumitomo Forestry – Due diligence regarding upstream investment in pellet production. (November 2018)
- Tenam Corporation – Strategic advice regarding the pellet fuel sector. (August 2017)
- Tolko – Confidential. (May 2018)
- TransPacific Fiber – Feasibility study for converting a chip export business to a pellet export business in Chile (January 2015)



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- Vattenfal – Provided due diligence via detailed technical audits and project risk assessments for several Canadian wood pellet projects. (2011 by John Swaan prior to joining FutureMetrics)
- Verto Management – Working on a strategy co-firing pellets in Australia. (September 2008 and ongoing)
- Viridis Energy, Inc. – Provided studies on optimal bark/white wood blending and on the benefits of covered storage. Provide a detailed operations optimization audit with recommendations for improving production outputs, quality, and consistency at their Nova Scotia pellet plant. (September 2014, May 2015). Produced an information memo and was the exclusive representative for the sale of Viridis assets. (April-July 2016)
- West Oregon Wood Products – A detailed technical audit and a comprehensive information memo for the sale of their two pellet plants in Oregon. Represented the owners in negotiations. (November 2015)
- Wikwemikong First Nations – Heating pellet market study for a new pellet plant in Ontario, Canada (December 2015), market analysis for pellet sales (January 2016), business plan for the project. (February 2016)
- Wood Pellet Association of Canada – Analysis of the global wood pellet markets and supply chains. (November 2016, April 2018)

Logos of many of these firms on the next page.



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Consultants to the World's Leading Companies in the Wood Pellet Sector

Selection of Current and Recent Clients

PRÜDESA

 **draxbiomass**

 **arbaflame**



ITOCHU

RAMBOLL

Lignetics

VERTO™

 **Department of Primary Industries**

 **nsfp**
Neville-Smith
Forest Products

 **SUMITOMO FORESTRY CO.,LTD.**

 **Norske Skog**

TOLKO

NRI
未来創発
Dream up the future.
Nomura Research Institute

 **enviva**

 **Sumitomo Corporation**

 **cosan**

 **THE NAVIGATOR COMPANY**

 **Highland**

 **WOOD PELLET ASSOCIATION OF CANADA**

 **Hancock Natural Resource Group**

IRVING

 **MITSUBISHI RESEARCH INSTITUTE, INC.**

 **Aroostook Band of Micmacs**

 **Seaconus**
Diversified Port Holdings

CEFC
CLEAN ENERGY FINANCE CORP

 **Ekman**

 **LEBEL**
Since 1856
Naturally proud

Northcrest
FOREST PRODUCTS
Developing Export Markets
Delivering More Value

DOOSAN

Ayo Biomass
Green & Renewable Energy

TENAM

 **HANCOCK LUMBER™**

 **ENGIE**
by people for people

VATTENFALL

 **INTERFOR**

 **EQUIS**

 **THERMA GLO**
FEEL THE HEAT™
A MOHIGAN ECO-FRIENDLY COMPANY

 **NREL**
NATIONAL RENEWABLE ENERGY LABORATORY

 **ROMSPEN**

 **Maine Forest Service**
DEPARTMENT OF CONSERVATION
STATE OF MAINE

 **Wikwemikong**
UNCECED THORN PRESERVE
Proud. Progressive.

 **AGRINIKA**

 **CAPE STREET CAPITAL**

 **MESYS**
MAINE ENERGY SYSTEMS

 **Holson**

 **RENTECH**

 **BTEC**
Biomass Thermal Energy Council


 **Trans Pacific Fibre**

 **NCIC**

 **LAHMEYER INTERNATIONAL**

 **FULGHUM FIBRES**

 **IOGEN CORPORATION**

 **VIRIDIS ENERGY INC.**

 **BioDean**

 **BFL CANADA**