



# FutureMetrics™ LLC

8 Airport Road Bethel, ME 04217, USA

## FutureMetrics – Overview

***FutureMetrics is the leading consultancy in the wood pellet sector***

*FutureMetrics provides due diligence services, information and analysis, operations guidance, and strategic advice.*

*FutureMetrics combines decades of experience with deep operational expertise, powerful sector focused financial modeling skills, and thought leading market awareness.*

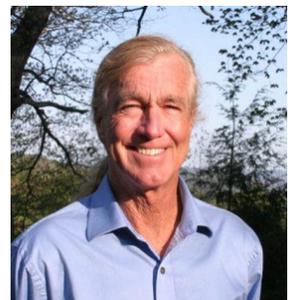
*Mitigating climate change is the foundation of our mission*

*FutureMetrics believes that the foundation for all biomass-based energy projects, from both environmental and economic points of view, must be sustainability. **Preservation of the landscape's carbon stocks are essential for the low carbon characteristics of the refined fuel.***

FutureMetrics has specialized in the wood pellet industry since 2005. 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. Website = [www.FutureMetrics.com](http://www.FutureMetrics.com)

### FutureMetrics' core team

- William Strauss, MBA, PhD - William Strauss is the President and founder of FutureMetrics, LLC [www.FutureMetrics.com](http://www.FutureMetrics.com). Over the past two decades, the FutureMetrics' consulting team has grown and is currently recognized as the leading set of experts in the wood pellet sector. Bill continues to publish 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](http://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. In 2021 a [dashboard](#) built by Dr. Strauss won the Limitless Business Intelligence Dashboard award at a major business intelligence conference, IBIS. Bill has more than forty years of 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) both from the University of New Hampshire.





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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 what is now 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 1998. John joined FutureMetrics in 2012. He offers a broad range of wisdom and skills key to the sector: from pellet manufacturing, to logistics optimization, to negotiating shipping contracts. John is the recipient of the 2014 Founders Award at the International Biomass Conference. John was honored with the “Lifetime Achievement Award” at the 2023 Argus Biomass Conference in London.



- Hannah Campbell, BS - Hannah is a 2012 graduate of the US Air Force Academy. After graduation she served in the Air Force as a Logistics Readiness Officer on several teams focused on maintenance support, logistics readiness, and mission support. While she was the Officer in Charge of Compliance for the 48th Logistics Readiness Squadron in the UK, the team she led was awarded “Superior Performer Team” in the Unit Effectiveness Inspection in 2014. Hannah brings to FutureMetrics the skills and experience for providing project-specific detailed analysis of logistics strategies and costs. Hannah adds to our ability for providing due diligence studies for existing and proposed industrial wood pellet projects, feasibility analyses for project developers, and CIF costing analysis for pellet buyers and intermediaries. Hannah's Bachelor of Science degree from the Air Force Academy was built around an engineering core curriculum. Her major was in political science and foreign studies with a focus on Asia. Hannah has a minor in Chinese language.
- 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 provides our team with business sensitive and rigorous mass 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.
- Yoshinobu “Yoshi” Kusano, LLB - Yoshi is an advisor to FutureMetrics about the Asian wood pellet markets with a focus on Japan. Yoshi has decades of experience in the wood pellet sector. He is currently the Executive Advisor and the head of the Fuel Procurement Group for Biomass Energy at RENOVA, a Japanese developer and operator of renewable power projects. Prior to RENOVA, Yoshi spent several decades with Sumitomo Corporation leading their woodchip and wood pellet group. He was named one of the most influential leaders in the biomass Industry by Argus Media in 2016. He received a Bachelor of Laws (international law and legal study) from Waseda University.





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

- A. Wilbert's Sons – Strategic guidance for the development of a new pellet factory. (August 2021)
- Advent International – Market analysis and strategic guidance. (January 2021)
- Agra Industries – Support and guidance for pellet plant design. (March 2020 and ongoing)
- Arbaflame – Strategic guidance for developing projects to produce steam exploded pellets. (April 2018 through May 2022)
- Arbec Bois D Oeuvre, Inc – Analysis of markets and estimating of production costs for a new pellet mill. (November 2020)
- 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); implementation of the conversions and acquisition of pellet production capacity. (May 2019)
- Ashmore – Due diligence technical audit for potential investment into a new pellet factory in Columbia South America. (February 2023)
- Atlantic Power – Pre-feasibility analysis of a new pellet production plant. (April 2020)
- 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)
- Ayo Biomass – Strategic guidance, market analysis, and onsite guidance of the construction and operation of a new pellet production project in Vietnam. Plant startup in June 2019. Continued advice for factory #2 that will begin construction in summer 2023 (April 2017 and ongoing)
- BDDK Holdings, Ltd. – Feasibility analysis for several new pellet production projects (details confidential). (July 2020)
- 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 - December 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)
- Bioena (formally Indefco) – Provide technical advice for the development, construction, and operation of a new pellet factory in Columbia South America. (May 2023 and ongoing)
- BioFuels Tasmania – Participating in a project development working group for a new pellet mill. (June 2020 to November 2020)
- BioMassters – Providing technical guidance on the construction of a new pellet plant for producing cooking pellets in Rwanda. (May 2022 and ongoing)
- Biomass Thermal Energy Council – Analysis included 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)
- Cahaya Energi Hutani – Feasibility analysis for a new pellet factory in Indonesia. (January 2020)
- Cate Street Capital – Feasibility study for a pellet manufacturing and export project in New Hampshire, US. (February 2012)



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- Cifi Panama = Due diligence for an investment into a pellet factory in Chile. (July 2023)
- Circa Sustainable Chemicals – Owner’s representative for the development of the material handling and fiber preparation for a new biomass to biochemicals plant. (May 2022)
- 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)
- Confluence Energy – Working with the firm to find a buyer for the equipment in their closed pellet mill in Kremmling, Colorado (June 2019)
- 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)
- Council of Western State Foresters – Analyze the international wood pellet markets with a focus on the potential for aggregated pellet production from western US states. Provide a review and analysis of torrefaction technologies. (September 2020)
- Delco Forest Products – Feasibility analysis for a new pellet production and export project in New Brunswick. (January 2022)
- DiCarbon – Due diligence for the technical, logistical, and market characteristics for project development. (2011)
- Diversified Port Holdings / Seaonus – Due diligence - Confidential. (July 2016)
- DK-Carbon – Feasibility analysis for a new pellet manufacturing plant in Quebec. (January 2022)
- 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) Technical guidance on a new production facility (July 2020)
- 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)
- Energy Management Inc, (EMI) - Owner’s representative for the development of a new pellet export project. (May 2022)
- Enviva – Confidential (July 2015, March 2018, October 2020, June 2022)
- Equis Pte. Ltd. – Market analysis for a potential pellet manufacturing project in southeast Asia. (September 2016)
- Européenne de Biomasse – Market analysis and strategic advice. (August 2022)
- 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)
- Groupe Lebel – Feasibility analysis for a new pellet project in Quebec. (November 2017 to February 2018)
- Forum Equity Partners – Due diligence of a novel technology for pellet production. (August 2021)
- Fragrant Group – Pre-feasibility study for a pellet export project in Myanmar supplied by plantation grown wood. (June 2016)



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- 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)
- Georgia Pacific – Global pellet market analysis and intelligence. (April 2021)
- Glencore – Technical audit of a potential fuel supplier and market analysis for regional suppliers to replace coal with biomass at a nickel smelter in New Caledonia. (January 2023)
- Golden State Finance Authority – Pre-feasibility analysis for a project to convert forest fire mitigation treatment by-products into wood pellets for export. (October 2019)
- Hancock Lumber – Feasibility study for pellet manufacturing for the domestic US market in Maine. (January 2017)
- Hancock Natural Resources Group – Confidential (May 2015). (January 2017 to November 2018). HNRG joined FutureMetrics and Ramboll to develop opportunities in the industrial wood pellet sector. (February 2017 to November 2018)
- Harry Freeman & Sons – Pre-feasibility study for a new pellet plant in Nova Scotia. (March 2020)
- Herbert Smith Freehills – Expert witness regarding a dispute about the quality and the timeliness of delivery of a turnkey pellet factory. (October 2021)
- Highland Wood Pellets – Confidential (January 2017). Operations optimization (January 2022) Due diligence for investment in an acquisition. (March 2023)
- 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)
- Indorama – Technical due diligence regarding an existing pellet factory in Indonesia. (November 2023)
- 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)
- 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)
- Idemitsu – Due diligence for pellet manufacturing facilities in SE Asian region. (May 2023)
- Itochu – Confidential. (March 2018)
- JD Irving – Design and process flow advice for the reconstruction of a used pellet mill. (July 2017) Start-up training for new pellet mill. (June 2019)
- Kirtland Pellets – Technical operations audit for improving pellet plant productivity. (August 2015)
- Kruger Publication Papers – Strategic advice and technical due diligence for the development of a steam exploded wood pellet export project in Newfoundland. (September 2021, March 2023)
- Lignetics – Market intelligence and analysis. (August 2018 to December 2019)
- Lignum Energy – Strategic guidance and market development. (April 2023)
- 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)



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- 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)
- Marubeni Corporation – Confidential. (January 2019)
- 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 in Ontario. (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 in Australia and eastern Russia. (November 2018); Technical due diligence regarding a pellet plant in Thailand (July 2019)
- Mitsui-Chile – Market analysis and technical due diligence (September 2022)
- 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 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)
- Neville-Smith Forest Products – Feasibility analysis for expanding pellet production in Tasmania. (November 2018)
- New Brunswick Power – Strategic guidance and vetting of potential black pellet fuel suppliers, (December 2023)
- 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 August 2019)
- Nomura Research Institute – Analysis and forecasts to support project due diligence for a project to import pellets into Japan. (May 2020). Comprehensive report on the global pellet, PKS, and wood chip (for power) sectors. (February 2018)
- Norske Skog – Pellet plant operations optimization in New Zealand. 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). Managing the development of a new pellet plant in western British Columbia (January 2019)



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- 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)
- Oaktree Capital Management – Information and analysis about the global pellet fuel markets. (December 2023)
- Orion Energy Partners LP (now Orion Infrastructure Capital) – Technical and economic due diligence in the consideration of a major investment in a pellet project. (June 2020). Follow up analysis after the investment and plant retrofit to determine if the plant is fulfilling the improved operations expectations. (July 2022, November 2023)
- Osaka Gas – Confidential (February 2023 to October 2023)
- Parkside Timber – Feasibility and financial analysis of a new pellet factory in Australia. (June 2023)
- Peak Renewables – Market analysis and feasibility analysis for new pellet mill in British Columbia. (July to September 2020)
- Pinnacle Renewable Energy – Present market analysis to a meeting of portfolio managers. (August 2018)
- Prodesa – 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)
- Rainbow Pellet – Facilitating offtake agreements with Japanese buyers. (December 2020 and ongoing)
- 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 to January 2019)
- ReCast Energy – Due diligence regarding a biomass power project in Cote d'Ivoire. (January 2019)
- 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)
- Rio Claro – Feasibility study for a new pellet production factory in Chile (March 2019); Project development for a new pellet plant in Chile (May 2019)
- RioTinto – Analysis for substituting pellet fuel for coal in a large refining operation in Australia. (October 2023)
- 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)
- Spectrum Energy – Project development technical due diligence for a new large export project in the US southeast. (November 2022)
- Sumitomo Corporation – Due diligence for joint venture with Cosan in Brazil and continued support. (April to July 2016)
- Sumitomo Forestry – Due diligence regarding upstream investment in pellet production at several north American industrial pellet plants. (November 2018, April 2019); Due diligence for an investment in pellet production in Australia (July 2020); Evaluation of EPC offers for a new pellet factory (October 2022)
- Sustainable Biomass Program (SBP) – Working with SBP to expand into southeast and northeast Asian markets. (February 2020)
- Tenam Corporation – Strategic advice regarding the pellet fuel sector. (August 2017)
- Tolko – Confidential. (May 2018)



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- TransPacific Fiber – Feasibility study for converting a chip export business to a pellet export business in Chile. (January 2015)
- UPC Renewables – Strategic guidance and pellet factory optimization for new production in the Philippines. (June 2023)
- Vattenfal – Provided due diligence via detailed technical audits and project risk assessments for several Canadian wood pellet projects. (2011)
- US Endowment for Forestry and Communities – Reviewed the design of the new Restoration Fuels torrefied wood pellet plant in Oregon with specific attention to safety and ability to produce. (May 2020)
- Verto Management – Working on a strategy co-firing pellets in Australia and other opportunities outside of North America. (September 2018)
- 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)
- Vista Outdoors / Camp Chef – Operation optimization at two BBQ pellet plants. (January 2022)
- Vitol – Analysis of advanced pellets and strategic guidance. (February 2021)
- W.C. Bradley / Char-Broil – Due diligence relating to a major acquisition in the BBQ pellet space. (December 2022)
- Western Coast Enterprise Ltd. – Feasibility analysis for a new pellet factory in the SE US. (July 2022)
- 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); Strategic guidance document (April 2021 and April 2022)

Logos of many of these firms on the next page.



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FutureMetrics - Consultants to Many of the World's Leading Companies with Interests in the Wood Pellet Fuel Sector

