



Frederick Tornatore, Chief Technical Officer

Bioenergy Experience

Frederick Tornatore has over 40 years of professional experience in renewable energy development for both the private and public sectors. As Chief Technical Officer at TSS Consultants, he directs the technical, environmental, and economic evaluations of a wide number of existing and emerging technologies that use many different forms of biomass (e.g., agricultural, forest, urban wood, municipal solid, animal wastes, food waste, and biosolids from wastewater treatment plants). His work also includes identification of grant funding resources and economic incentives for the development of bioenergy systems. Presented below is a small sample of Mr. Tornatore's relevant experience in regulatory, technology, economic, and resource evaluation for bioenergy projects:

- Currently working on the development of several forest and agricultural waste wood bioenergy facilities. These facilities are both biomass to electricity (under the Bioenergy Market Adjusting Tariff – the BioMAT program), and gasification of waste wood to renewable natural gas and hydrogen for use as alternative transportation fuels.
- Identification and evaluation of twenty potential sites for small-scale woody biomass power plants in the forested regions of California.
- Biopower technology assessment and carbon market development for biomass-fired combined heat and power facility in the Lake Tahoe Basin.
- Assisting solid waste transfer and processing facilities with potential effects of, and compliance with, CA Senate Bill 1383, which is currently going through the regulatory promulgation process.
- Conversion of forest- and agricultural-sourced biomass into biomethane gas for use as bio-based transportation fuel (in lieu of compressed natural gas) or direct injection into natural gas pipelines.
- Title V and Non-Title V (FARR permits) air permit for a biomass power plant on tribal land (permitted by U.S. EPA), and conducts compliance and monitoring activities for the permitted biomass facility.
- Resource assessment for a proposed Colorado-based renewable energy center (emphasis on biopower and biofuels).
- Permitting and facility siting analysis for a thermal gasification plant that uses a combination of forest biomass, municipal solid waste, and biosolids.
- Compliance guides for small and large biomass power plant facility operators and protocols for the facility's emissions testing and permit compliance.
- An environmental analysis on the potential air and water impacts of biomass gasification systems (for a U.S. Department of Energy funded project). For this project, Mr. Tornatore is reviewing available emissions data that can be found in the public domain, as well as emissions data being generated by the subject systems. He has also conducted similar evaluations of reciprocating engines using syngas, as well as digester gas. Mr. Tornatore has prepared and implemented an emissions testing program for a new state-of-the-art biomass boiler.

Education

- B.S., Botany, University of California, Berkeley, 1975



Affiliations

- Bioenergy Association of California, Founding Member, 2012 to present, current Board Member, and past Chairman of the Board 2021/2022
- California Biomass Collaborative, Executive Board, 2005 to present
- Sacramento Environmental Commission, Commissioner, 2002 to 2006, Chairman 2005-2006
- Association of Environmental Professionals, Charter Member

Contact Information

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