

# 11<sup>th</sup> World Bioenergy Congress and Expo

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### Forest residues biorefinery: A diversification potential for traditional petroleum industry

Quebec, like other Canadian provinces, has access to millions of tons of renewable biomass in the form of harvest forest residues. The Quebec chief forester has evaluated that, for the forest area around La Tuque (area 04), the capacity of unused harvest residues ranges from 1.1 to 1.8 green metric tons per year; the larger figure includes foliage and needles but not the tree stump and root system, which are not considered as biomass in Quebec. To valorize such unused biomass, BioEnergy La Tuque (BELT) has undertaken a large-scale biorefinery project that aims at converting the renewable, unused forest residues into “drop-in” quality fuels. The forest-based biorefinery project being the first of the kind in Canada, BELT, as the project promotor, has initiated a thorough due diligence techno-economic evaluation to mitigate and de-risk the project and attract potential investors. BELT main objective is to provide a no-compromise optimum techno-economic solution for the refinery. The thorough evaluation of all project facets is required both to select the best available process line but also to validate the availability of biomass at a low cost and over a long period-of-time, i.e. 25 years, exceeding the amortizing period, usually 15 years in the petroleum industry, of such projects. The BELT project has presently the full support of both the Canadian federal and Quebec province governments, as there is a need for a political coherence between the renewable energy policy and regulations and the development of the renewable energy industry. Our experience proves the full feasibility of such a project. The presentation will describe the BELT project and use it as a case study to elaborate on all the techno-economic-political aspects required to successfully develop in Canada, and elsewhere in the world, the bioenergy industries.

### Biography

Patrice Mangin holds a PhD in Process Engineering from Institut National Polytechnique (INP) of Grenoble and an Engineering Degree from INP Pagora, France. He is a bio-economy/bioenergy industry Chair holder, Professor, Chemical Engineering Department at the University of Québec at Trois Rivières (UQTR). He is the CEO of BioEnergy La Tuque (BELT) whose main objective is to build the first Canadian large scale biorefinery to convert harvest forests residues into renewable fuels (around 1 B\$ project). He is an Associate Member of the Hydrogen Research Institute (IRH) and Interdisciplinary Research Center in Operationalization of Sustainable Development (CIRODD). He demonstrates over 40 years of experience with successful track record in the pulp and paper, forest products, and printing industries. He is on the Board of AQPER (Quebec association for the production of renewable energy), Chair of the biofuels and Member of the biomass committees. He is on the strategic committee of The Tuque Forest of Education and Research and on AGENDA 2020 (Washington) Chief Technical Officers Committee which coordinates the US strategy on the development of forest products and forest bio-economy. He also participates in the FPAC (Forest Products Association of Canada) BioPathWay.

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