

ABSTRAK

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Program Studi : Pascasarjana Teknik Industri
Judul : Rancangan Strategi Perencanaan Industri Biodiesel Kelapa
Sawit yang Ramah Lingkungan dan Berkelanjutan

Metoda *life cycle assessment* model *cradle to wheel* industri biodiesel sawit untuk kajian potensi dampak lingkungan dari rantai suplai perkebunan sawit, *CPO mill*, pabrik biodiesel, *blending plant*, SPBU, dan kendaraan transportasi. Analisis kategori dampak dan perhitungan menggunakan skenario roadmap biodiesel nasional, skenario roadmap tanpa membuka lahan baru, skenario transportasi tanpa menggunakan biodiesel, skenario besaran emisi transportasi, skenario pengaruh campuran biodiesel terhadap emisi, serta rencana strategi pelaksanaan roadmap biodiesel nasional. Melimpahnya produksi CPO Indonesia duapuluh juta ton/tahun, kemandirian teknologi industri biodiesel, dan sifat biodiesel yang ramah lingkungan, sehingga biodiesel sawit sebagai bahan bakar alternatif mampu mendukung ketahanan energi nasional yang berkelanjutan.

Kata kunci : Biodiesel kelapa sawit, *life cycle assessment*, transportasi, *roadmap* biodiesel, *biodiesel mix*, *GHG emission*, *sustainable*, strategi perencanaan.

ABSTRACT

Name : R. Agung Wijono
Study Program : Postgraduate Industrial Engineering
Title : Design of Planning Strategy for Oil Palm Biodiesel Industry
Environment-Friendly and Sustainable

Life cycle assessment method with the cradle to wheel model of oil palm biodiesel industry to study the potential environmental impact of the supply chain oil palm plantation, CPO mill, biodiesel plant, blending plant, gas station, and vehicle transportation. Analysis of impact categories and calculation using the national biodiesel roadmap scenarios, roadmap scenario without opening new plantation, transportation scenario without use biodiesel, the scenario of transportation emissions, scenario of effect the biodiesel mixture on emissions, and plan strategies for the national biodiesel roadmap. An abundance of Indonesian CPO production of twenty million tons/year, independent biodiesel industry technology, and environment-friendly nature of biodiesel, so palm oil biodiesel as alternative fuels capable of supporting a sustainable national energy security.

Keywords: Oil palm biodiesel, life cycle assessment, transportation, biodiesel roadmap, biodiesel mix, GHG emission, sustainable, planning strategy.