



DEVELOPEMENT OF BIOFUELS IN POLAND OPPORTUNITIES AND CHALLENGES

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Requirements for alternative fuels (biofuels):

1. Existing in appropriate quantity;
2. Good technical and energy properties for engine applications;
3. Cheap in production and selling;
4. Easy for transport, storage and distribution;
5. Lower emissions than fossil fuels;
6. Appropriate efficiency;
7. Secure independence from fossil fuels.



Technical aspect of alternative fuels application

- Quality of emission from the transport is an important factor in increasing of GHG;
- All EU countries agreed that constitution and level of GHG should be controlled. The answer is - alternative fuels.
- EU strategy of alternative fuels development takes into account ecological and economical needs, but it is well known that there are many barriers in alternative fuels application.



Technical Barriers

- Sustainable raw material and biofuels production.
- Technologies which are still under development.
- Technologies should be readjust to available feedstock, for instance to sugar in relation to bioethanol or another than rapeseed oil fats in case of FAME. Production of second generation biofuels requires modern technologies.



Technical Barriers

- Existing distribution system need technical acceptance for biofuels.
- Special procedures and out of refinery blending.
- Strategic and national energy reserves in case of inceasing of biofuels production share.
- Application of alternative fuels to great population of engines is the very important barrier.



Technical Barriers

- Car manufacturers very carefully accept fuels containing biocomponents.
- Standardised first generation of biofuels vs. second generation of biofuels performance under development.
- Application of neat biofuels requires special equipment in engines and new type of engines.



Biofuels first generation

- Bioethanol;
- Pure vegetable oils;
- FAME and FAEE (transesterification vegetable oils and fats);
- Biogas;
- Bio-ETBE.



First generation biofuels implementation side-effects

- Environmental threats of processing residues;
- Competition with food production;
- Little impact on CO₂ emission reductions;
- Monoculture.



Biofuels second generation

- Bioethanol derived from lignocellulosic material by advanced processes of hydrolysis and fermentation.
- Synthetic biofuels (FischerTropsch-diesel, BioDiMetyloeter, mixtures of higher alcohols) are derived by processes of gasification&synthesis of lignocelulosic material (process Biomass To Liquide).
- HTU-diesel (hydrothermal upgrading and catalitycal hydrodeoxidation of fats and wet wastes).
- Biogas derived by process of gasification of biomass.



Implementation of Biofuels second generation

- Developing of new technologies and processes for utilisation of CO₂ obtained during production process of biofuels second generation.
- Exploitation of woodlands.
- Cultivation of energy crops on lands substantial for environment (wetlands, moorlands).



Second generation biofuels technologies in Poland

- Currently there is no in the world processing systems of second generation biofuels production, mainly raw material optimization and production;
- There is planning to create processing system of biomass by Fischer-Tropsch process - biorefineries and alternative fuels centers concept;
- In Poland research and later demonstrations projects will be introduced by Polish Technology Platform for Biofuels – 7th Framework Programme and other European Commission Funds.



Biofuels third generation?

- Biohydrogen;
- Biomethanol.



Targets for biofuels

- Increase of biofuels operating properties;
- Decrease in dependency of fossil fuels;
- Replace nutritive feedstocks by other useless feedstocks;
- To send a clear and convincing signal, as part of its renewable energy strategy, the EU should adopt a binding minimum target for biofuels in 2020.
- Without a separate biofuel target compare to fossil fuels, their development will fall behind. This would mean low reductions in crude oil use and no greenhouse gas benefits in transport.
- GHG savings from biofuels are more expensive than from other forms of renewable energy - but transport faces the most severe GHG challenges and biofuels are only option for today.



Main points of promoting use of biofuels in Poland

- Ecological public transport zones;
- Exemption from parking tax;
- Exemption from environmental tax;
- Governmental reduction on fuel taxes
- Buying „clean vehicles” within public orders;
- Governmental administration duties for utilising biofuels in transport.



Governmental Regulations

- B20 (20 % FAME) for open market;
- B100 (100% FAME), E85 (85% BioEtOH), E95 for closed, special fleets;
- Biofuels (100% FAME) or Vegetable Oils for self utilising by producers (farmers);
- Act on Biofuels and Biocomponents pass by Parliament in 2006.
- National Targets for using biofuels and biocomponents in fuels.



Polish Technology Platform for Biofuels was created on 16 March 2006 as the first platform for biofuels in Europe.

Improvement of competitiveness of the national economy in the field of production and use of biocomponents and biofuels in transport, energy sector and biofuel industry taking into consideration possibilities of public-private partnership in the research and production area.



Strategic plan of action of PTPB

- New technologies for production of the first and second generation of biocomponents and biofuels.
- New technologies for processing and use of by-products from biofuel production.
- New technologies of biofuel blending, distribution and use.
- Education and overcoming the barriers hindering biofuel sector development, especially overcoming the technological barriers.



Thank You for Attention

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