

ENEnergy's Solution to Climate Change:

Replacing all crude oil with biofuels and stopping old CO₂ from entering the carbon cycle.

How we save CO₂ by producing and using biofuel

1. Conditions

- CO₂ is the plants nutrient. Our fast growing and energy rich plants need **3 tonnes of CO₂** per ton dry biomass produced. The plant gets this "food" from the atmosphere via the photosynthesis.
- Our biomass transformation process gives 2,83 barrels of green fuel and 100 kg of green coal per tonne biomass.
- The chemical formula for combustion of green fuel gives emissions of approx. 0,2 tonnes of CO₂/barrel. To be on "the safe side" we say 0,36 tonnes of CO₂/barrel.
- The combustion of "green coal" will be less than for coal. We use the number for coal, that is 3 kg/kg green coal.
- Algae in the production process will eat the CO₂ developed in the process. The algae will then be used as cattle feed.

2. Product CO₂-emissions

From the assumptions above we get the following emissions per ton biomass

CO ₂ -emission liquid pr ton biomass	1,02 ton/ton biomass
CO ₂ -emission green coal pr ton biomass	0,30 ton/ton biomass
SUM CO₂-emission	1,32 ton/ton biomass

3. Net CO₂-balance

Consumed CO ₂	-3,00 ton/ton biomass
Emitted CO ₂	1,32 ton/ton biomass
Net CO₂-balance	-1,68 ton/ton biomass

This means that every ton of biomass produced into energy *and spent as energy* takes out 1,68 tonnes of CO₂. Calculated back to barrels this gives approx. **0,6 tonnes of CO₂ taken out** per barrel of product consumed.

4. Current consumption of liquids

Total world consumption of liquids: approx. 110 mill barrels per day.

Total world consumption of green fuel-products: approx. 1 mill barrel per day.

5. ENEnergy's unique concept and its global climate effect

ENEnergy's concept can produce 750.000 barrels/day from 1 mill hectares of land. This means that replacement of worlds total current oil production requires about 150 mill hectares of land.

And there is enough land. Western Australia alone has over 250 million hectares of land.

Replacing all 110 mill brl/day with ENEnergy's concept will reduce today's emissions with 24 billion tonnes CO₂ annually.

6. Cost figures liquid production

Cheapest price of new crude today:	10.00 USD/brl
Refinery cost, emission cost etc.	10.00 USD/brl
Actual cost fossil products	20.00 USD/brl

ENEnergy cost: 50 USD/2,83 barrels = 17.50 USD/brl

ENEnergy products are ready to use. No refinery cost.

The EN way is not only good for the climate, but also cheaper.

7. Today's Market size

Present crude oil

Market approx. 100 USD/brl, at 100 USD/brl, giving a market of 10 bn/day, or 3.650 bn/year, ex refinery, emission cost etc.

Readily refined products for sale: probably more than double, but say 7.000 bn/year

Present green oil-products

Current market approx. 1 mill brl/day at 250 USD/brl, giving 250 mill USD/day, or approx. 91 bn/year

ENEnergy Concept – potential market

“Present crude oil” above presents the potential market: 20 bn/day, or 7.000 bn/year.

8. The transformation from fossil crude to green oil will not cost but contribute to public offers.

Today's real price of fossil fuels is about 180 USD/brl on a global basis when taxes are included.

With our production cost this will give about 160 USD/brl margin.

EN's position: At a production of 1 mill barrels per day (less than 1 % of the total market), we will have a margin at 160 mill USD/day, or 58.4 bn/year.

Public sector position: As shown this **will give no cost at all** for doing the transformation from fossil polluting energy sources to green oil products. On the contrary: it will give income.

For instance: A tax rate of 25% will give Australia a tax income of 14.6 bn USD/year, again: based on 1% of the total market. And with no outlay to fight climate change.

9. Global security

The EN way of production can be used in many countries around the world. This will give a higher security of supply and a better distribution of income than today's fossil fuels.

By eliminating fossil emissions and thereby stopping temperature rises it will also stabilize today's population patterns and stopping climate refugees.