



for a living planet

Sustainability of Bioenergy

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WWF, the global conservation organisation

Established in 1961

About 5 m supporters worldwide

Active in > 100 countries

Almost 4,000 employees



Mission

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:

- conserving the world's biological diversity
- ensuring that the use of renewable natural resources is sustainable
- promoting the reduction of pollution and wasteful consumption.





Structure

- **Climate Change**
 - Bioenergy is part of the solution
 - Impacts of Bioenergy
 - Environmental & Social Assurance





Climate Change

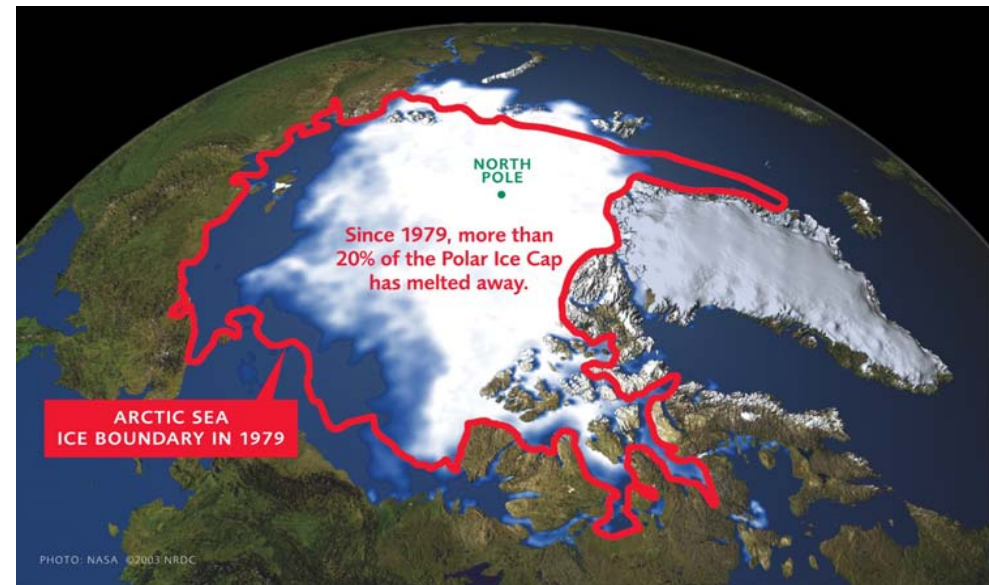
The global scientific community agrees on the following:

Keep global temperature growth below 2° C above pre-industrial times to prevent disastrous climate change

This means that no later than 2020, **global emissions have to fall**

and industrialised nations have to cut GHG by 60 - 80% by 2050

But how do we get there?





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EU: WWF Energy Scenario “Freezing Climate Change”

- - 33% GHG emissions by 2020, compared to 1990 base
- How? Policies & Measures scenario

- **0,4% final energy demand reduction a year**
- **25% renewable energies:** 1/2 comes from bioenergy (~200 Mtoe)
(If biomass imports are included, the potential is much higher!)
- Strong ETS
- **Transport measures**
- Agriculture measures
- Waste measures

All details on www.panda.org/climate/EUtarget2020





Latest studies on potentials

European Environmental Agency (2006)

Environmentally-compatible primary biomass potential in EU 25:

2010: 190 Mtoe

2020: 236 Mtoe

2030: 295 Mtoe (~17% of current energy consumption in EU 25)

Copernicus Institute - Utrecht University (2006)

Global biomass potentials in 2050: 250 to 500 EJ per year
(2003 global energy consumption ~470 EJ)

NB 1 EJ ~24 Mtoe





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Left
Land cleared for soy, around
Brazilia
Right
Cerrado, Chapada dos Veadeiros
© WWF / László Máthé





Positive impacts include

- GHG savings - For WWF, GHG emissions reduction is the primary reason for investigating bioenergy potentials
- Potential contribution to renewable energy strategies in developing countries
- Rural Development





Negative Impacts include

Increased bioenergy use = Intensification of agriculture on current used arable land AND expansion of agriculture on new land

This can lead to various impacts such as

- Increased water use up to non renewable levels – e.g. Thirsty crops in South-Africa.
- Degradation of HCV areas – e.g. Deforestation due to oil palm plantations in Indonesia; soy expansion in Brazilian Cerrado

Illustration of complexity: the palm oil case





Palm oil

- Fruits transformed in palm kernels (heat & power and/or cosmetics) and CPO (delivers 2 distinct products, for food and cooking oil/biodiesel)
- Increase in demand for palm oil independently of biodiesel developments
- Added pressure by increase in biodiesel demand: RISK
- Degraded land is available (e.g. deforested areas for timber) but companies prefer to develop oil palm in forested land, to sell the timber first (and many times without exploiting the land for oil palm afterwards)
- Increased efficiency in plantations is possible (currently ~4 tons oil/ha)





Ideally...

We need the right crops, at the right place, with the right techniques

- GHG balances
- protection of HCV forests, permanent grasslands, floodplains etc.
- water availability
- access to land
- soil erosion, biodiversity





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Left
Oil Palm plantations, Kalimantan
Right
Rainforest, Kalimantan
© WWF / Dhany & Hermas





Current situation

- Voluntary Commodity Initiatives such as FSC, RSPO, RTRS & Basel Criteria, BSI... are established or under development
 - principles and criteria
 - only a certain % of the market will comply
 - GHG calculation not required, as the initiatives were not developed for bioenergy initially
- Good start but not sufficient to ensure a sustainable development of bioenergy: we need a new system that is suitable for bioenergy

<http://www.rspo.org>

<http://www.fsc.org>

<http://www.responsiblesoy.org>

http://www.panda.org/about_wwf/what_we_do/policy/agriculture_environment/index/our_solutions/better_sugarcane_initiative/index.cfm





What kind of system?

- Preferably global, at least European
- For bioenergy in general, not only for transport biofuels
- Multi-stakeholder process
- Includes GHG calculation and social & environmental criteria
- Should not reinvent the wheel – based on existing relevant initiatives



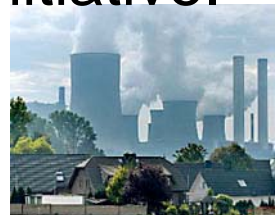
Willow culture in Autumn.
Extramadura National Park, Eastern Spain
© WWF-Canon / Fred F. HAZELHOFF





What does this mean in practice?

- UK & Dutch initiatives are very good start – should merge, improve and be joined by other Member States to build one European system
- The EU Commission should propose a review of the biofuel directive based on this, to make sure all Member States join
- This certification system cannot tackle all problem, e.g. “displacement”. EU approach even more important, needs negotiations with EU bioenergy trade partners (Brazil, South-Africa, Indonesia etc).
- The EU negotiations with other countries should also take place under a global bioenergy sustainability initiative, such as the EPFL initiative.





Thank you

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WWF EU biofuels position paper

http://www.panda.org/about_wwf/what_we_do/climate_change/index.cfm?uNewsID=79780

