

Workshop Introduction:

Where we are and what we aim to achieve (together with you)

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Global and EU Project Context

-  **GBEP** **Indicators for Sustainable Bioenergy**
<http://www.globalbioenergy.org>
-  **IEA Bioenergy** Sustainability of certified **wood bioenergy** feedstock supply chains:
Ecological, operational and international policy perspectives. IEA Bio Tasks 40 + 43
-  **Joint Workshops focusing on extending the RED to forest bioenergy**
www.iinas.org/redex.html
- **biomass** policies Sustainable bioenergy in EU28 www.biomasspolicies.eu
-  **S2Biom** Resource-efficient bioeconomy in Europe www.s2biom.eu
-  **BioTrade2020+** Sustainable EU Bioenergy Trade Strategy (www.biotrade2020plus.eu)
- **and many more!**

Bioenergy Sustainability: GHG

- **No existing** scheme covers all sustainability aspects, most advanced: RSB and ISCC+, but still issues open (**C stock changes**, land tenure...)
- Most probably **no extension** of EC sustainability criteria to solid/gaseous bioenergy (but post-2020?)
- **SBP** Sustainable Biomass Partnership scheme: only GHG data requirements...yet
- Policy and private sector **need guidance** on forest bioenergy: clear mandate **for science** (i.e. us)!



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Forest Bioenergy C Balances

- Feedstock **is** relevant: **where** from, and **which** forest products (especially for EU imports)
- Which **metrics**: no agreement yet
- EU projects to **improve** GHG accounting beyond RED: time-dependent C balances for forest bioenergy, iLUC for agricultural land use **and** considering biodiversity & social effects
- Joint Workshop is an **important step** in this process!



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C Balance of Forest Bioenergy

- Models and simplified approaches give 10-20 years of payback time for **forest residues** = **nearly carbon neutral**
- Forest baseline (what happens If not bioenergy?) and fossil reference: significant influence
- **Differentiation:**
 - Type of forest biome (boreal, temperate, tropic)
 - Type of forest product (residues, thinnings, low- or high quality stemwood)



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Low Climate-Risk Feedstocks?

Woody biomass source for energy use	Time horizon for CO ₂ emission reduction					
	short (10 years)		medium (50 years)		long (centuries)	
	Coal	gas	coal	gas	coal	gas
Boreal, stems final harvest	---	---	-	--	+	+
Temperate, stems final harvest	---	---	+/-	-	++	+
Harvest + thinning residues, landscape care & salvage wood*	+/-	+/-	+	+	++	++
SRC on marginal agricultural land	+++	+++	+++	+++	+++	+++
SRC replacing forest	-	-	++	+	+++	+++
industrial residues, wastes	+++	+++	+++	+++	+++	+++

-; --; ---: **bioenergy system emits more** CO₂eq than reference fossil system **in given time frame**

+/-: GHG emissions of **bioenergy and fossil are comparable** in given time frame

+, ++, +++: **bioenergy system emits less** CO₂eq than reference fossil system **in given time frame**

*For harvest/thinning residues & salvage wood, balance depends on alternative use (burning) and decay rates

Source: own compilation based on JRC (2013)

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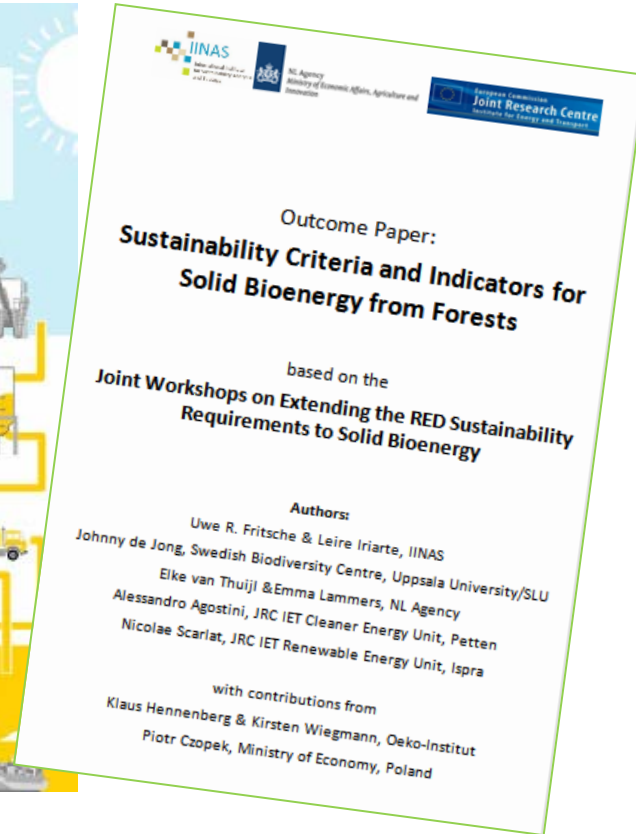
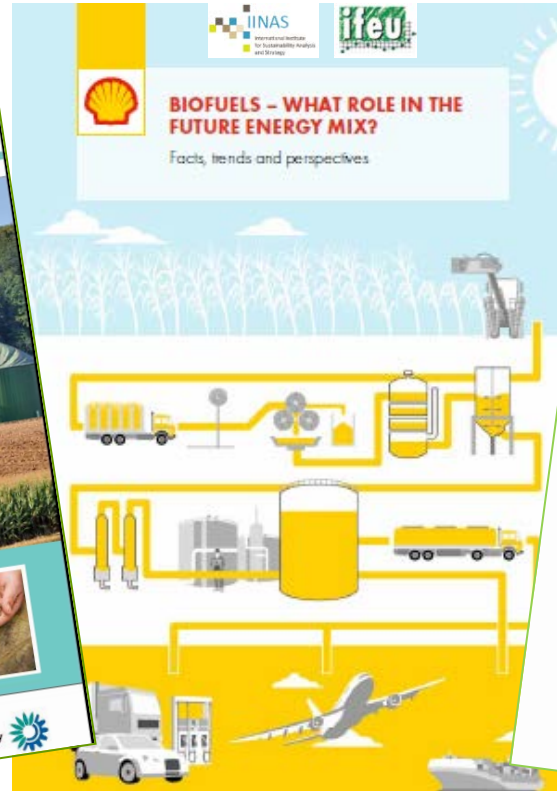
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More Information



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