

Assessment of sustainable biomass export potentials from international sourcing countries

Overview & Synthesis

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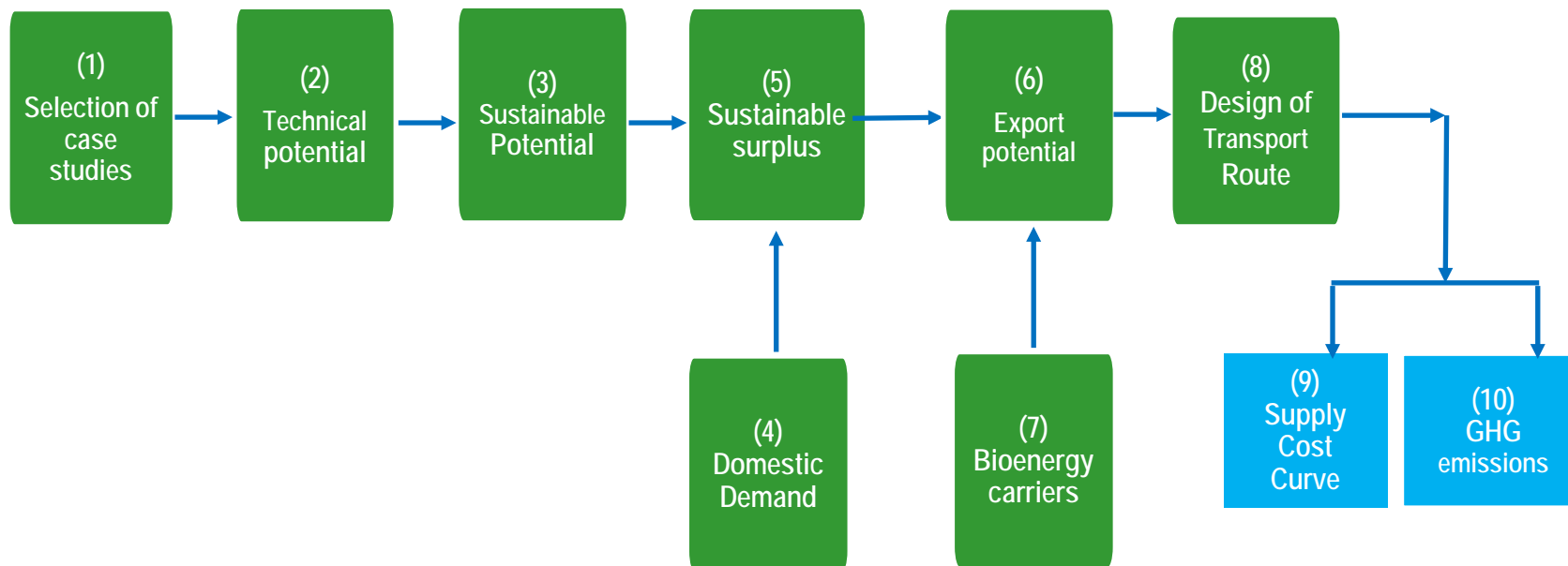
Prof. Dr. Martin Junginger



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Methodology & Scenario approach

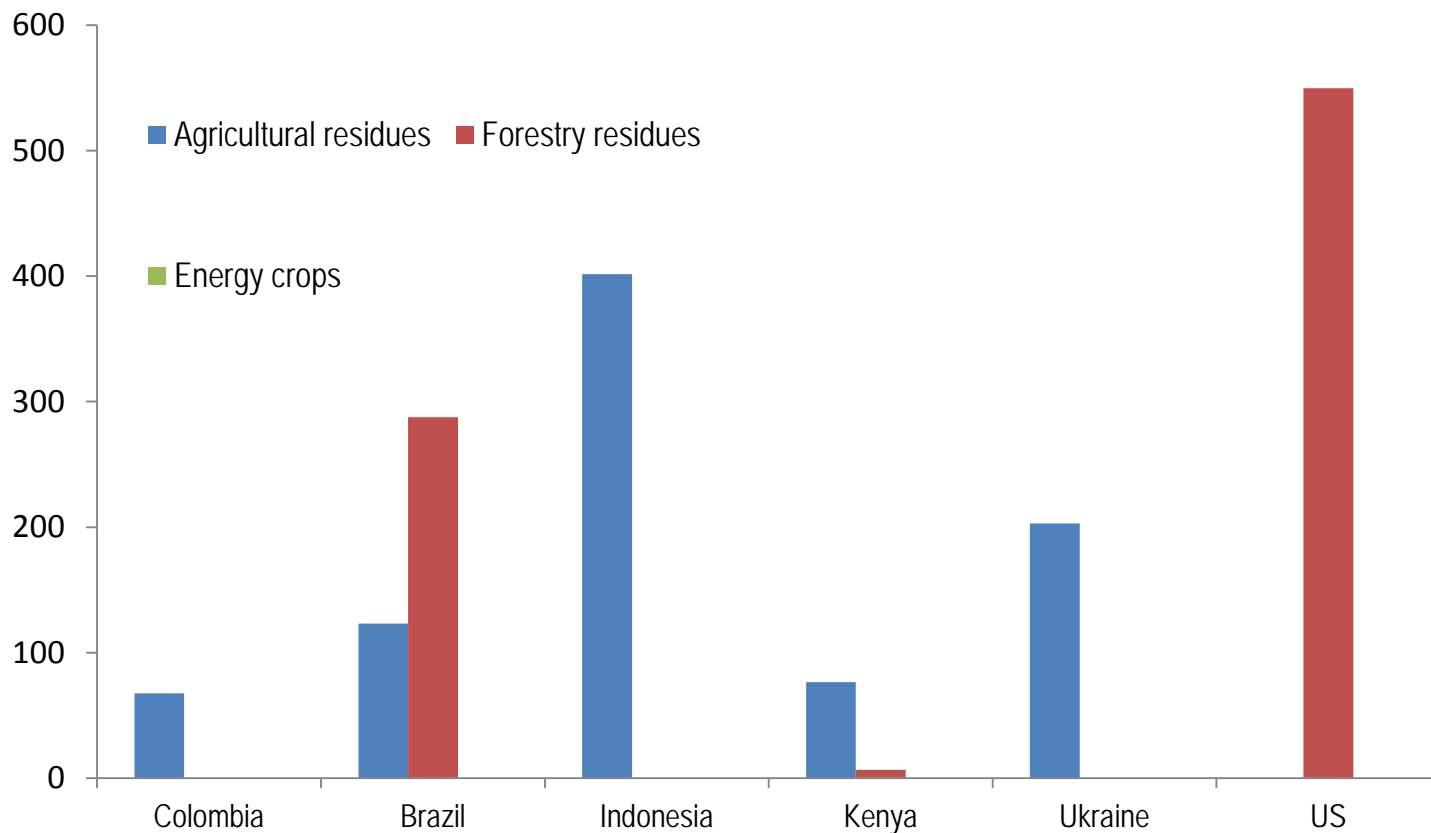
| Scenarios | BAU | | | High Export | | |
|-----------|-----------|------|------|-------------|------|------|
| | Current * | 2020 | 2030 | Current * | 2020 | 2030 |



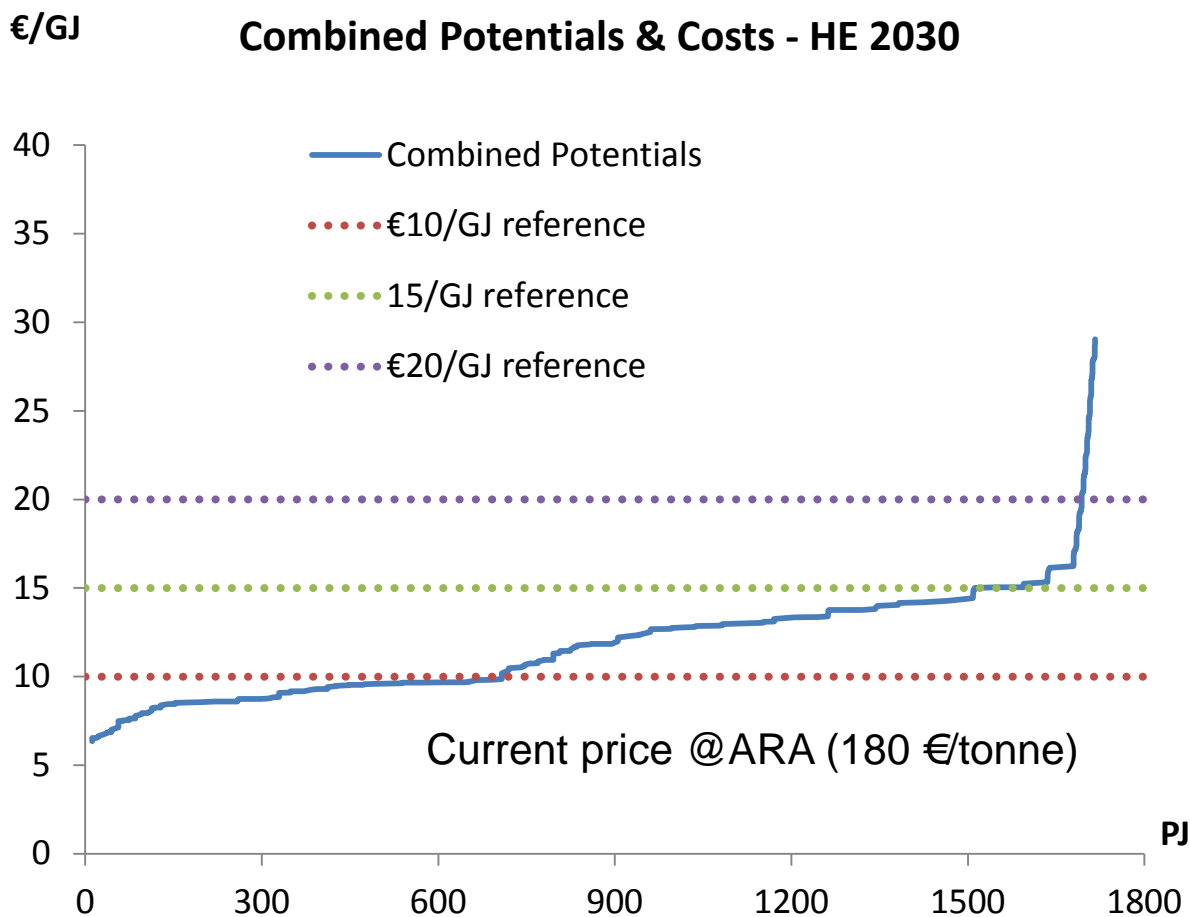
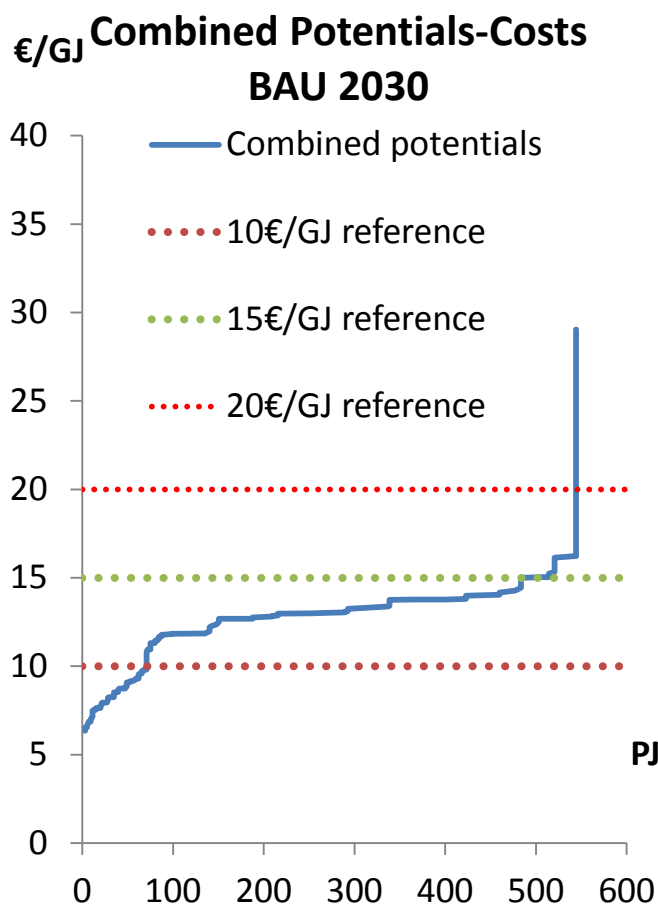
Export potentials over time & scenario

(180 PJ = 10 million tonnes wood pellets)

PJ Potentials - HE 2030

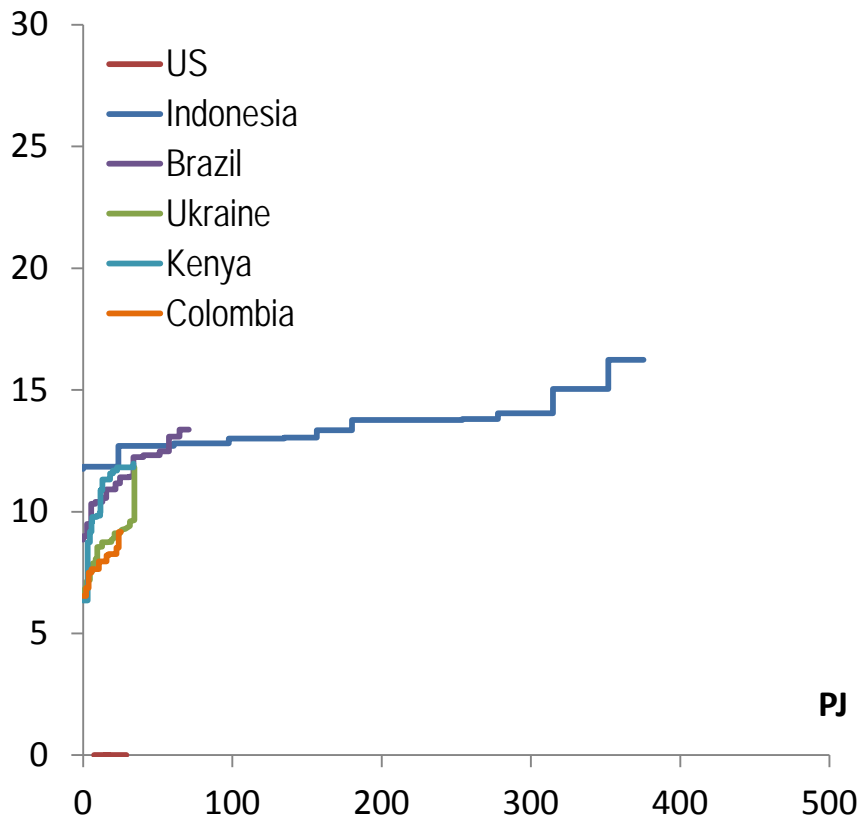


III. Global export potentials: costs delivered to EU

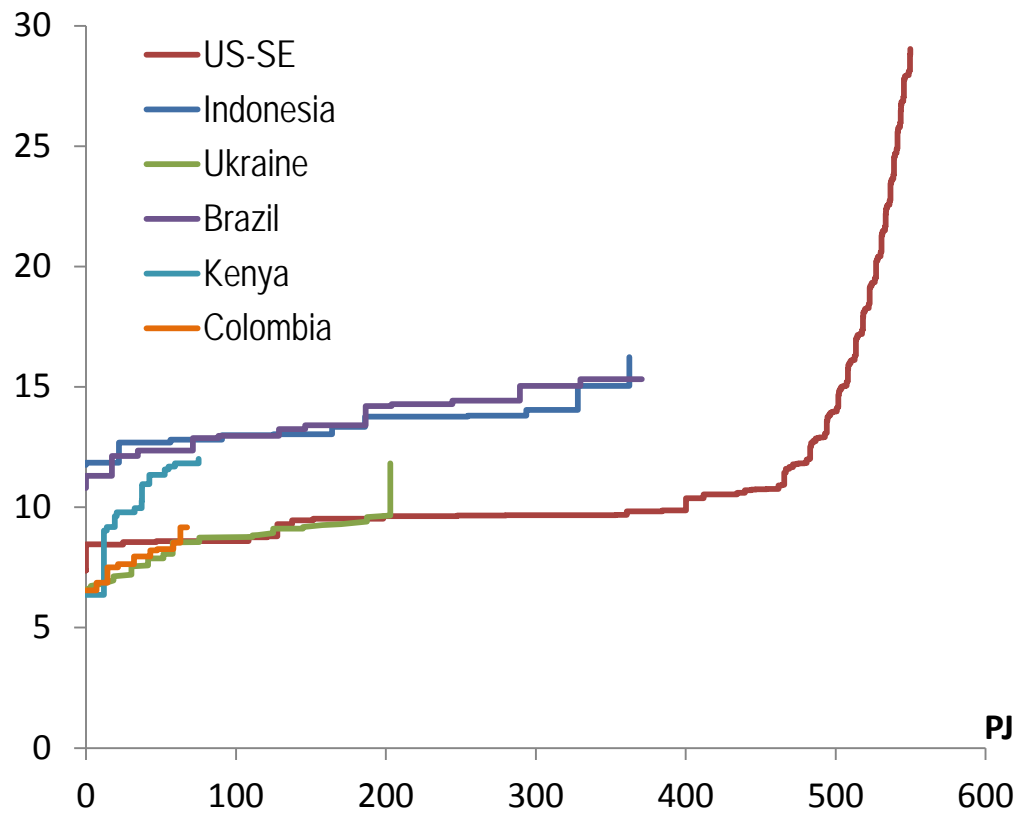


I. Export potentials: costs per country

€/GJ Potentials & Costs to NL - BAU 2030

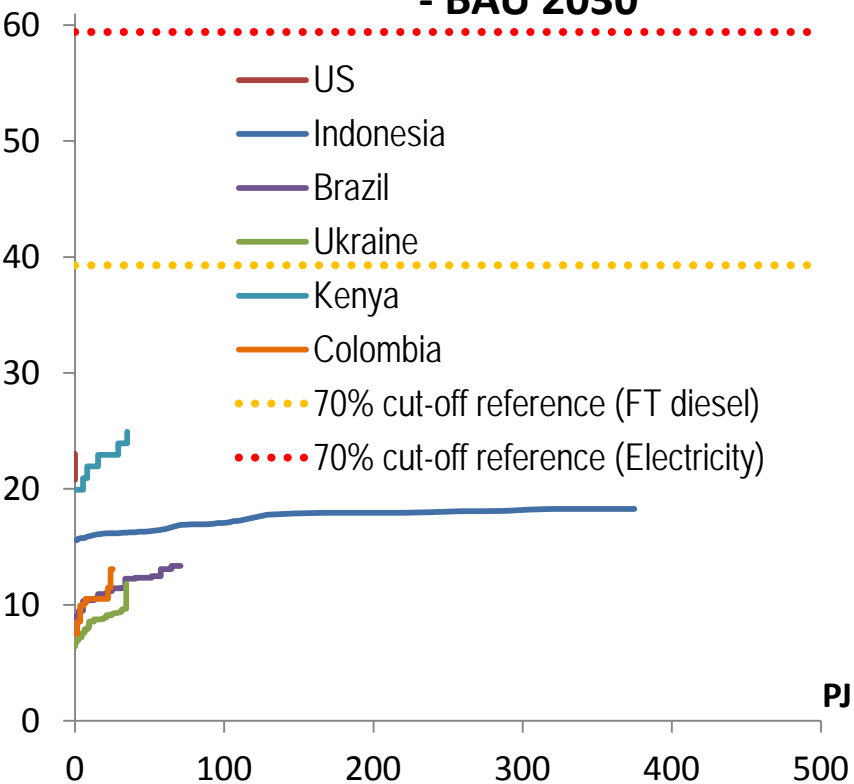


€/GJ Potentials & Costs to NL - HE 2030

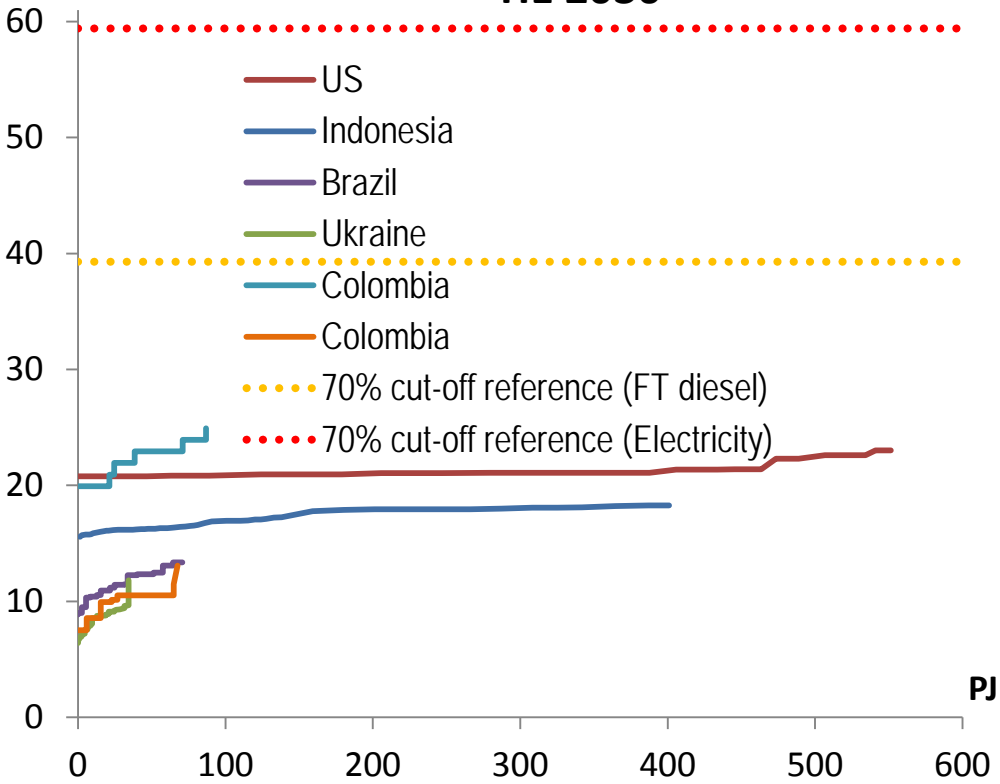


I. Export potentials: GHG emission threshold 70%

CO2kg/GJ Potentials & GHG Emissions to NL - BAU 2030

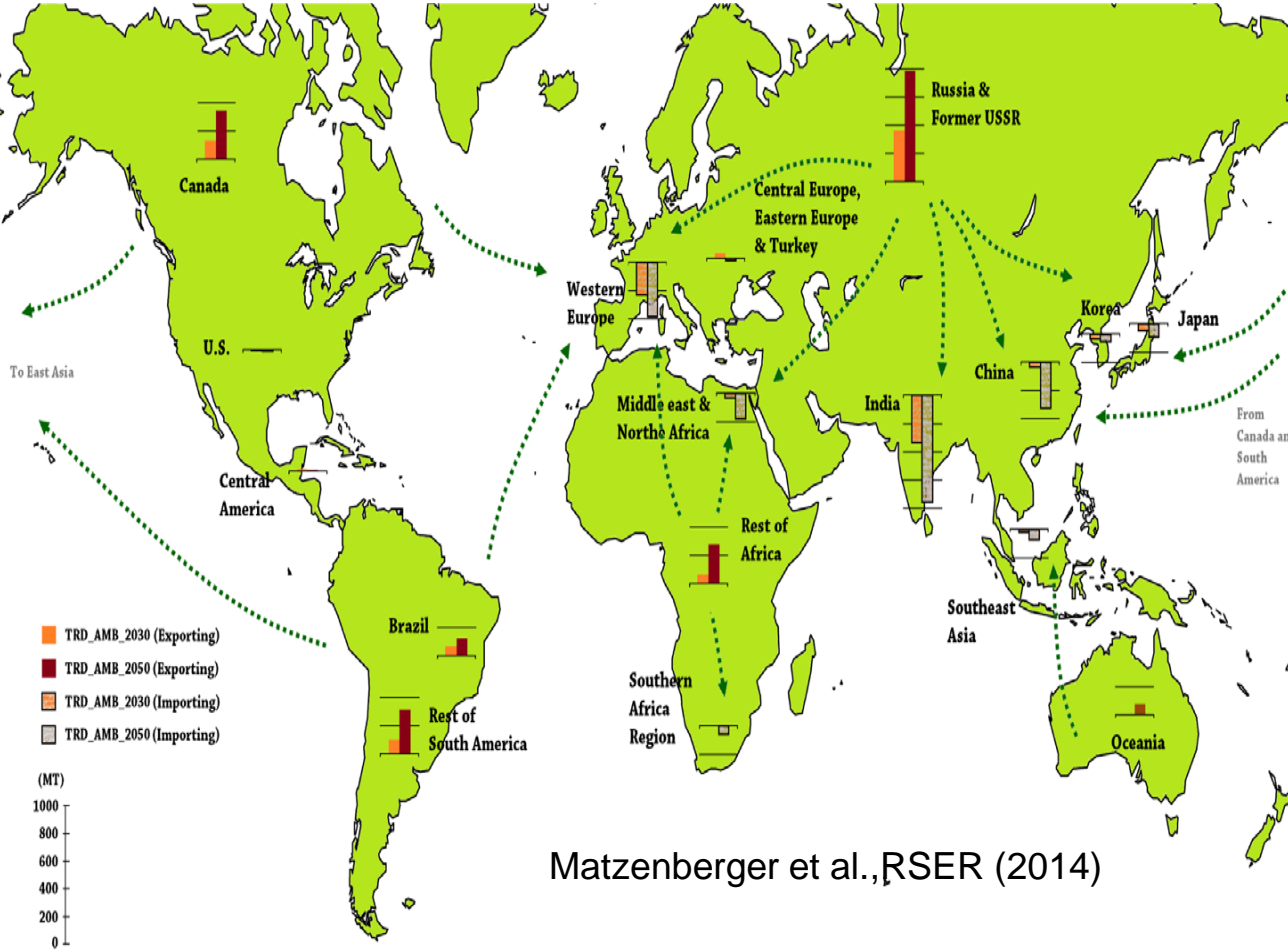


CO2kg/GJ Potentials & GHG Emissions to NL - HE 2030



Anticipated global demand & supply of biomass

IEA ETP (2014)
EURELECTRIC (2011)



Matzenberger et al., RSER (2014)

| Region PJ | Supply gap 2020 | Supply gap 2030 |
|-----------|-----------------|-----------------|
| EU | 1,680 | 2,260 |
| India | 1,090 | 1,300 |
| China | 450 | 660 |
| Korea | 110 | 130 |
| Japan | 130 | 140 |

(estimation)

- **US South East** shows highest export potentials; **sustainability requirements** are the main limit for the net sustainable export potential by 2030
- In other sourcing regions, the **speed of biomass mobilisation** is the main constraint
- **GHG emission thresholds** are not an issue, but at **current price levels**, exports would be limited to 200-600 PJ
- **Competing demand from South & East Asia** may further limit export to the EU
- **US SE, Ukraine and Colombia** could make significant contributions (200-600 PJ) to fill the EU supply gap
- Not all feedstock types included for all supply regions
- Other promising sourcing countries (e.g. **Canada, Mozambique**) **not (yet) included**

Thank You!

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Feedstocks considered per case study

Table 1. Summary of countries and feedstock potential.

| Country | Feedstock | | | | |
|---------------|-----------------|-----------------------|--------------------|---------------|------------------------|
| | Forest residues | Agricultural residues | Forest plantations | Biomass crops | New forest plantations |
| Brazil | | √ | | √ | √ |
| Colombia | | √ | | √ | |
| Kenya | | √ | √ | √ | |
| Indonesia | | √ | | | |
| United States | √ | | √ | | √ |
| Ukraine | √ | √ | | √ | |