Symposium Ökobilanzierung
Strategische Kooperation BOKU – Umweltbundesamt
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Ökobilanz in der Holzbereitstellung

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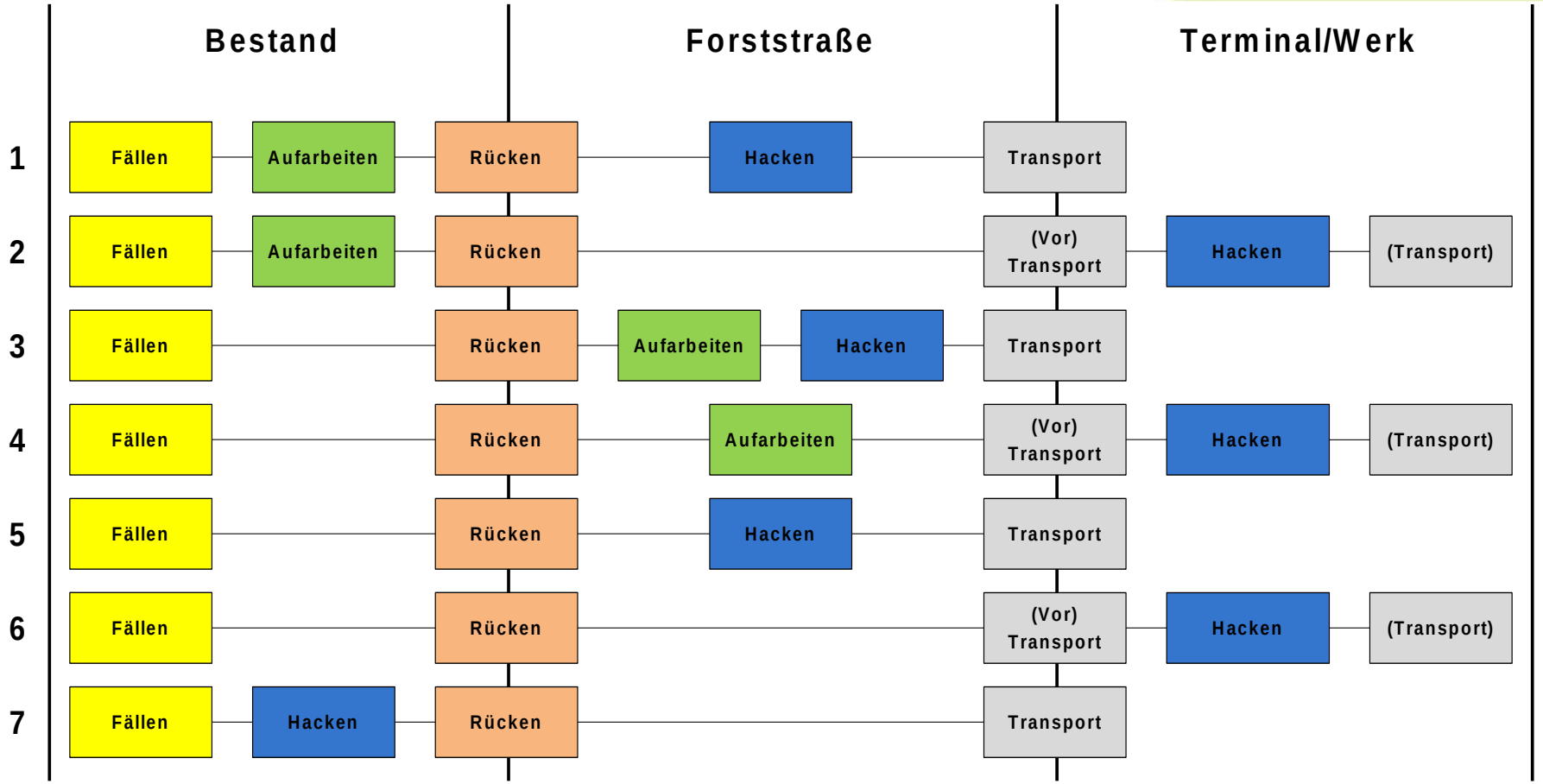
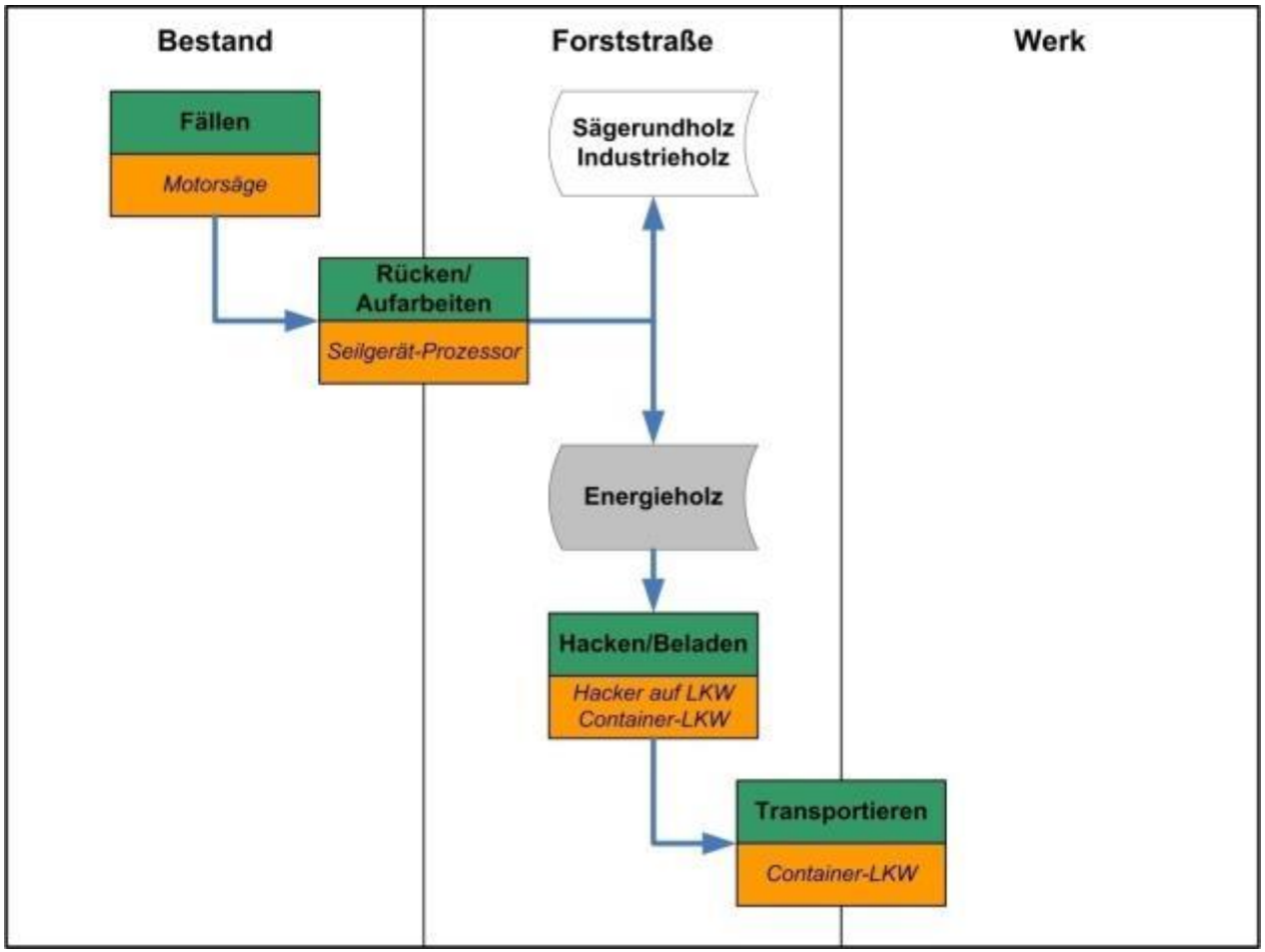
Bereitstellung von Waldhackgut

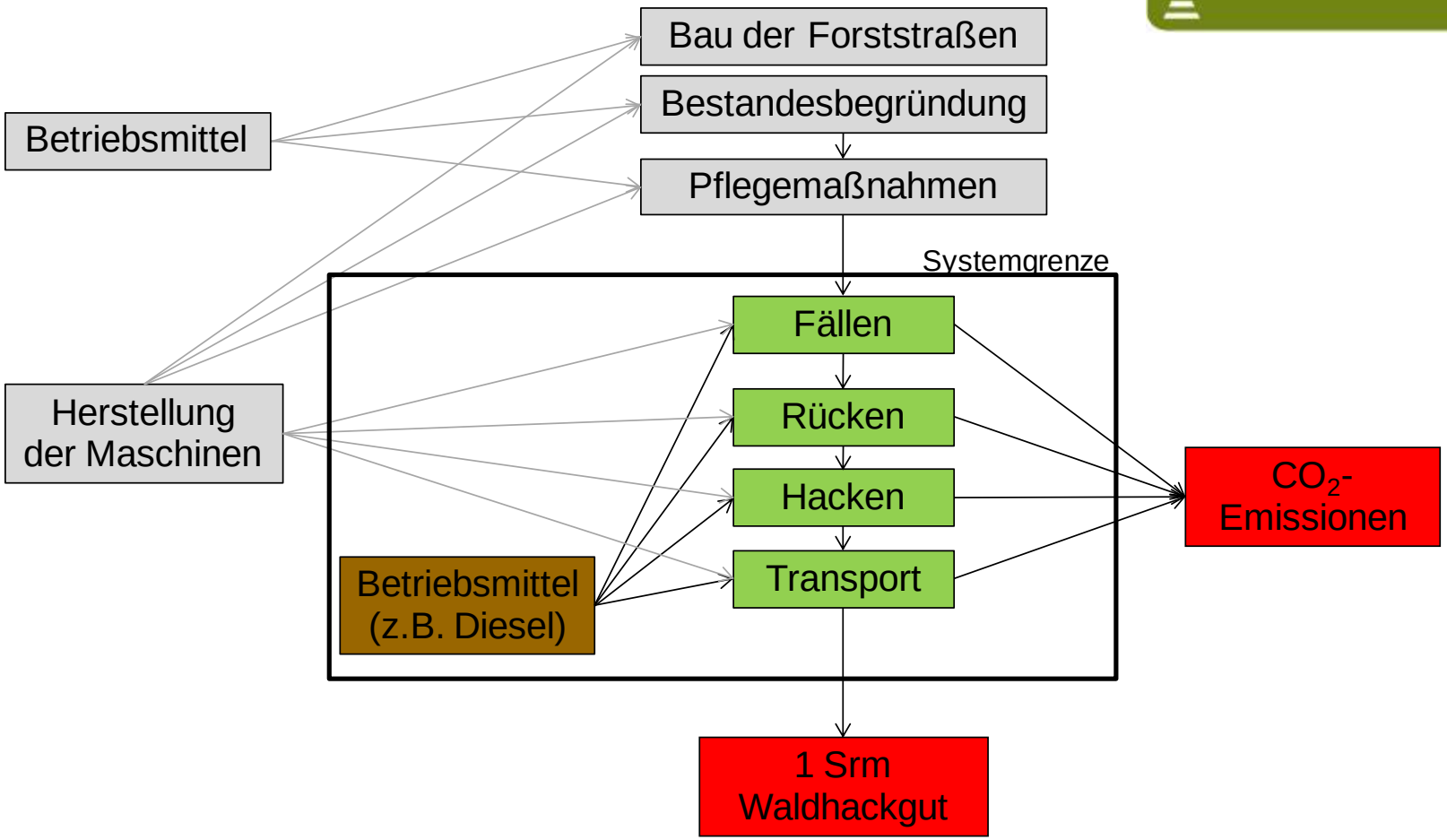


Schlagrücklass Baumverfahren



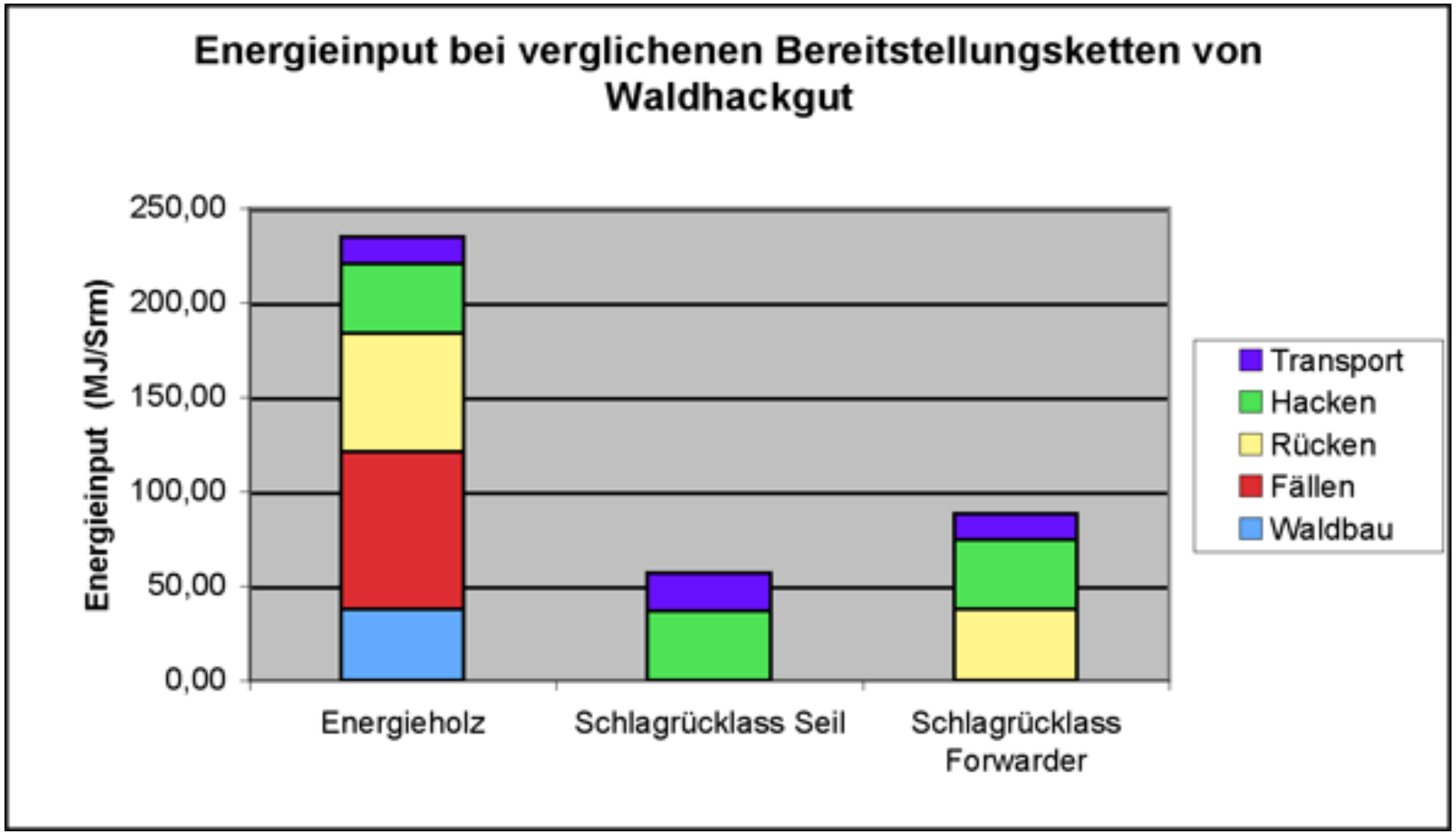
Nutzung von Schlagabraum

LCA Waldhackgut
Systemgrenze

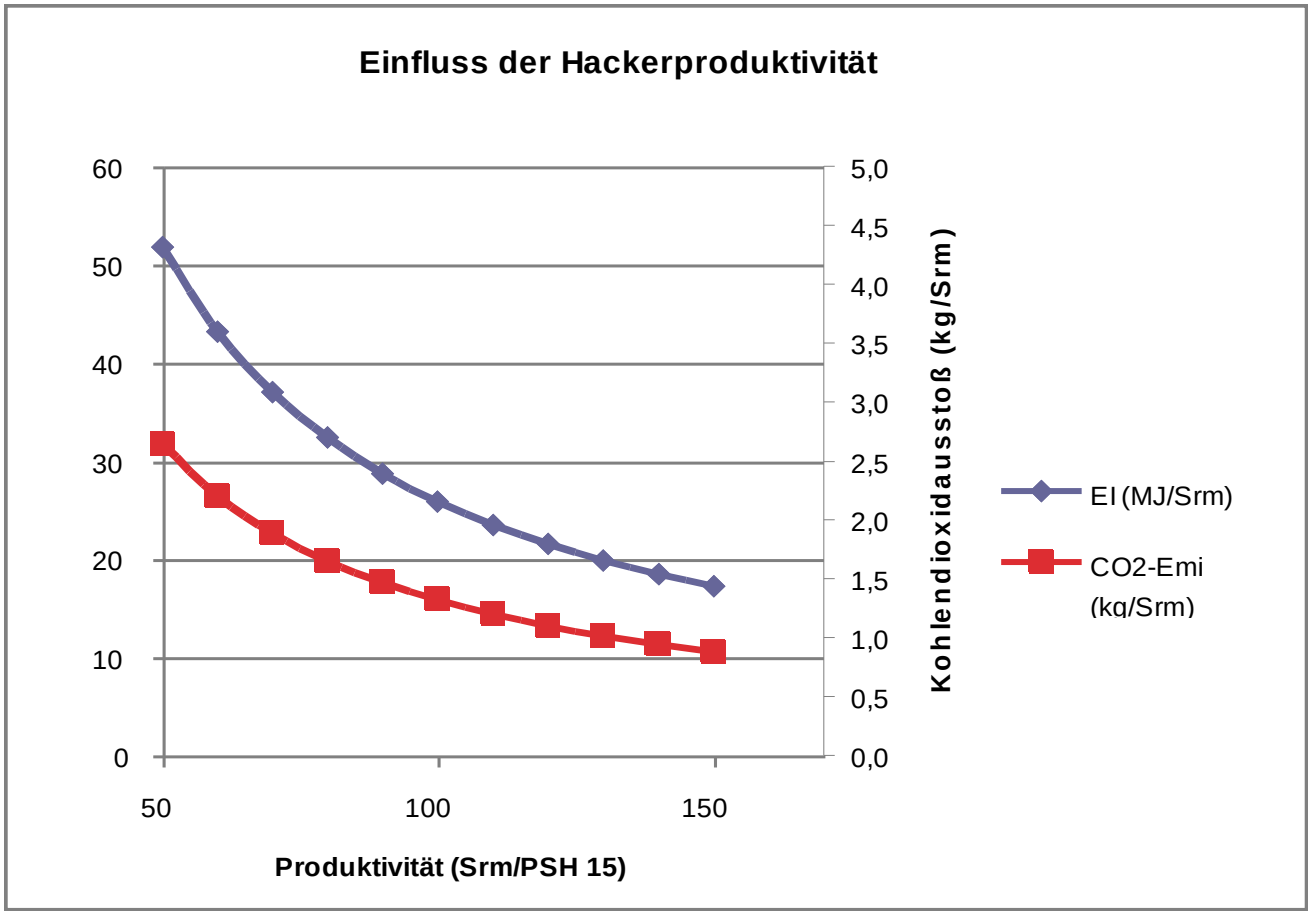


Alfred Riezinger (2008): Die Ermittlung der ökologischen Effizienz der Bereitstellungskette von Waldhackgut anhand ausgewählter Fallstudien.

Waldhackgutbereitstellung Energieinput



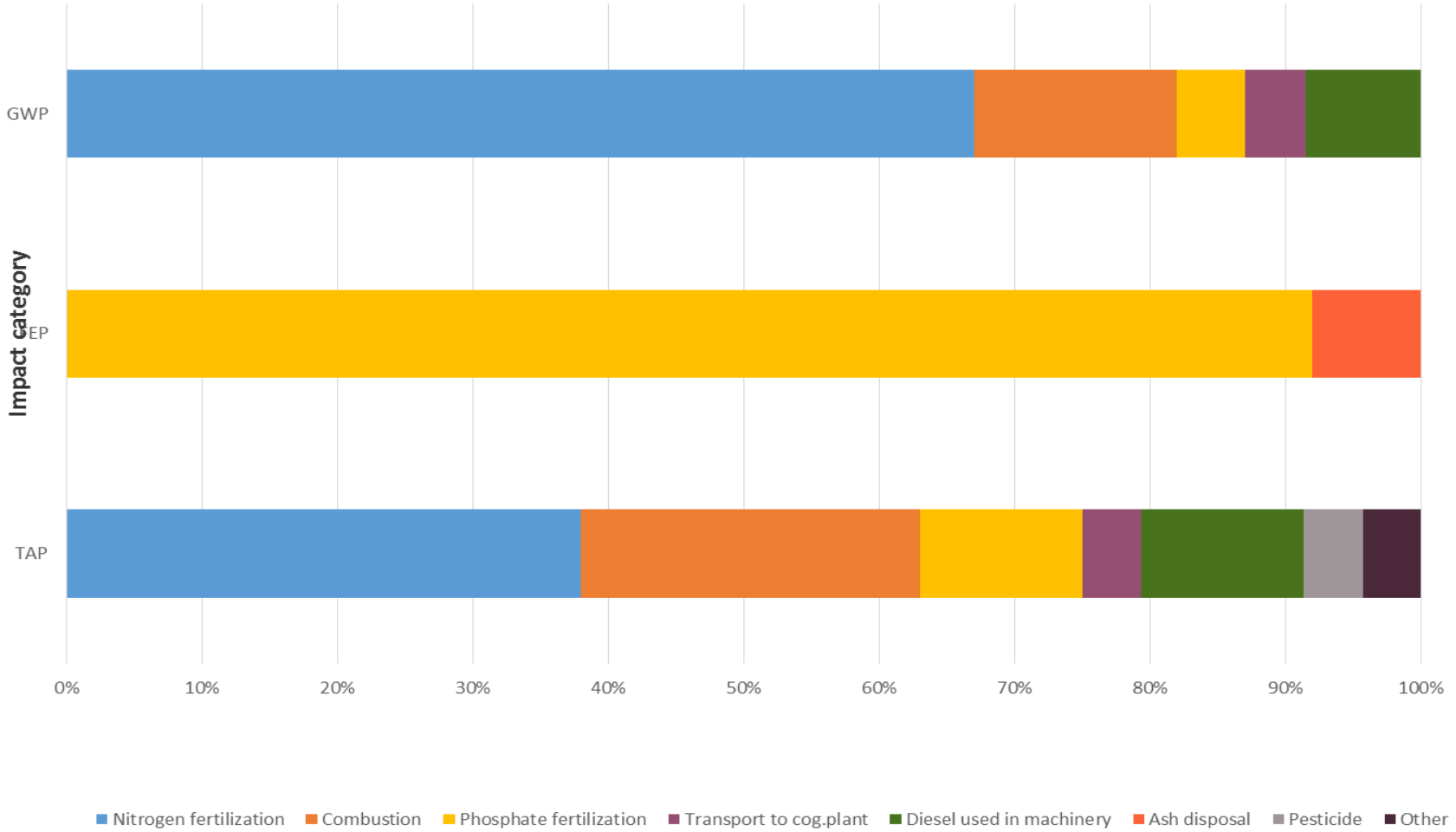
Sensitivitätsanalysen Hackerproduktivität



Primärenergieeinsatz und CO_2-Bilanz

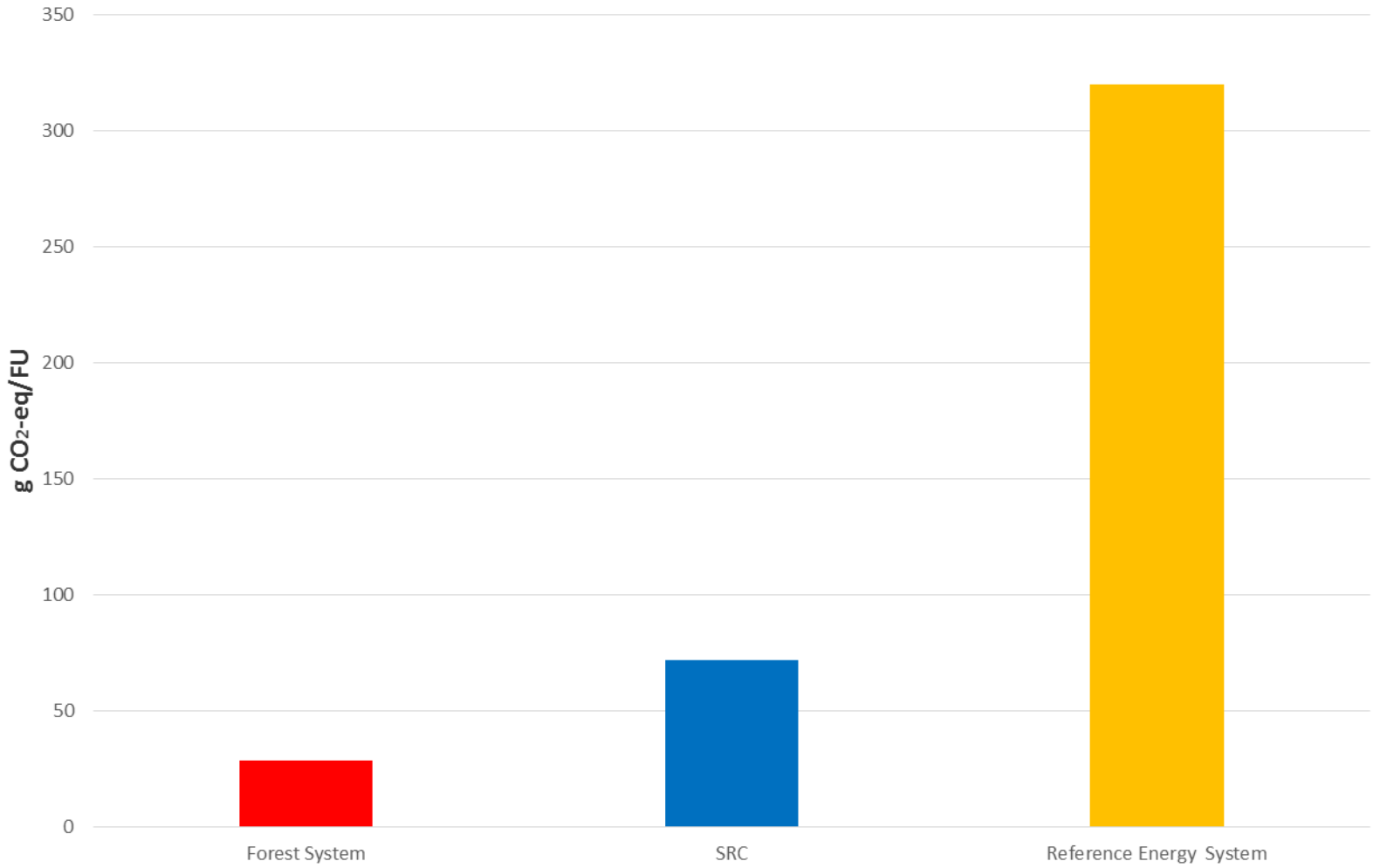
Maschinentyp	Treibstoffver-brauch	Produktivität	Primärenergie-einsatz	CO_2-Bilanz
	[l/PMH_{15}]	[m^3/PMH_{15}]	[%]	[%]
Harvester	15,6	18,0	0,449	0,323
Forwarder	11,1	15,5	0,501	0,361
Schlepper	7,3	9,0	0,421	0,304
Mastseilgerät	16,0	8,5	1,403	1,011

LCA von Kurzumtriebsflächen



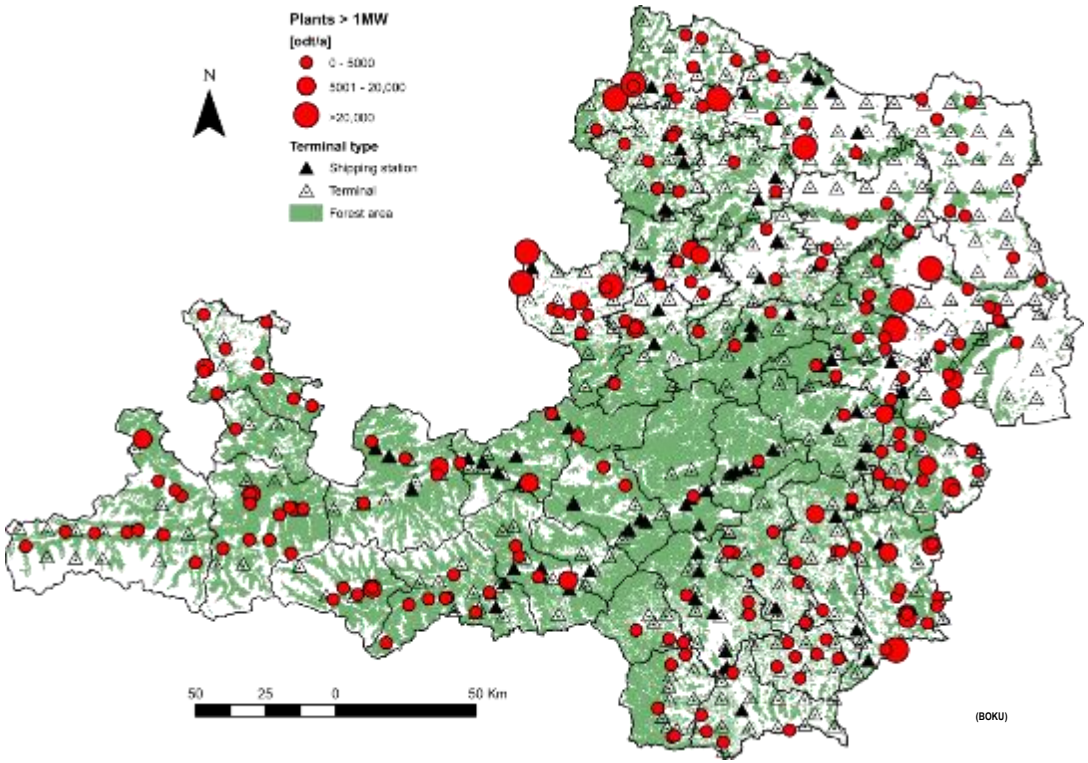
Elena Fernandez (2015): Comparative Life Cycle Assessment of forest and agricultural wood chips production for generating electricity in Austria. Master thesis.

Vergleich von Waldhackgut, Kurzumtrieb und Referenzsystem (öst. Energiemix) - GWP



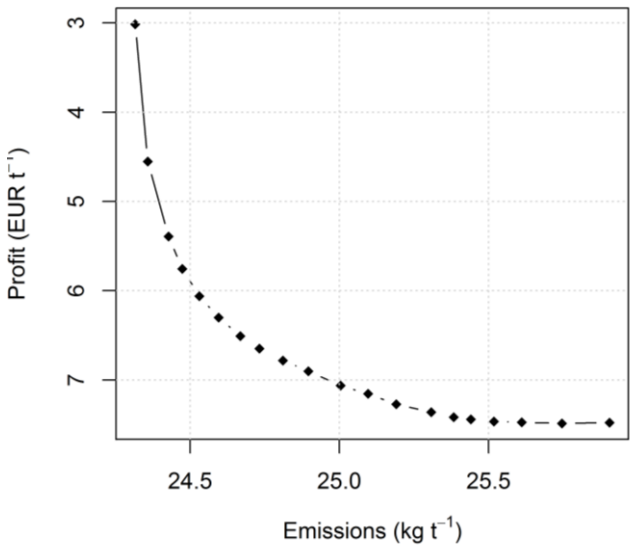
Fuel wood supply networks – how to re-engineer and optimize

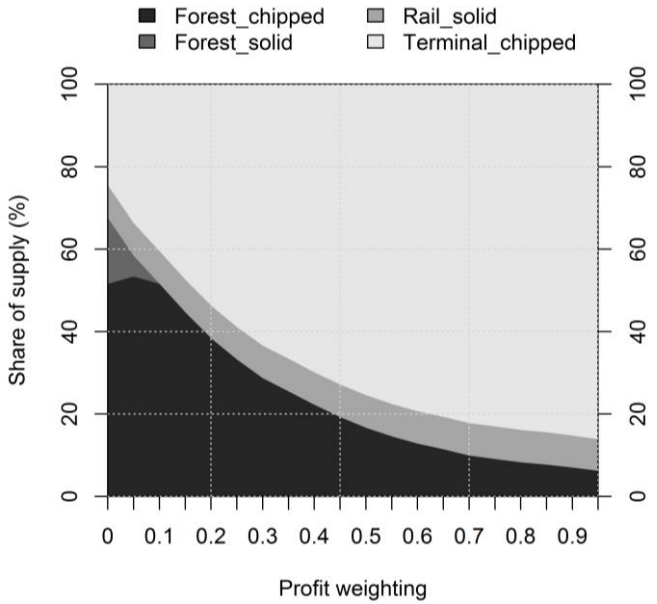
- Fuel wood supply chain optimization in terms of
  - profit
  - Green House Gas emissions
- Weighted sum scalarization approach
- Case network in Austria
  - 10.000 sources
  - 356 storage locations
  - 119 freight stations
  - 228 delivery locations
  - 700.000 dry tonnes/a

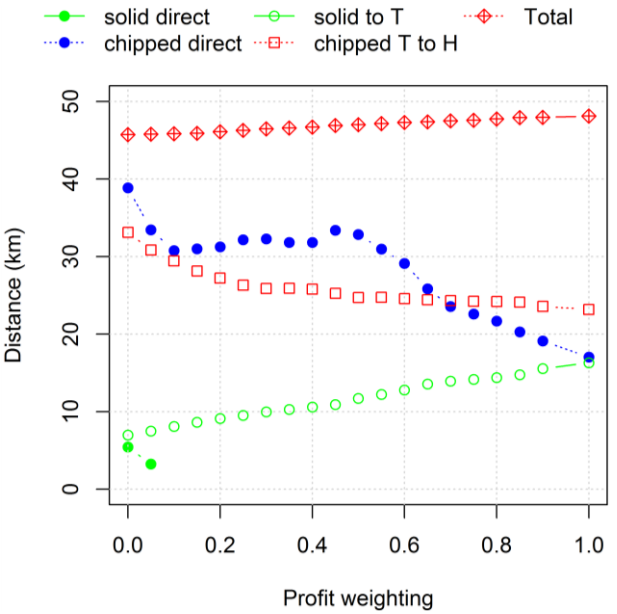


Kanzian, C; Kühmaier, M; Zazgornik, J; Stampfer, K. (2013): Design of forest energy supply networks using multi-objective optimization. BIOMASS BIOENERG. 2013; 58: 294-302.

Results – Profit <> CO_2







Volume weighted transport distance increases from 45.7 to 48.1 kilometers

Vielen Dank für die Aufmerksamkeit

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