
Logistiknetzwerkoptimierung für erneuerbare Energieträger

FH-Prof. DI Dr. Gabriel Kronberger, Feb. 2016

E. Pitzer (FHOÖ), S. Kühner (SYNCOM), K. Lenz (SYNCOM)

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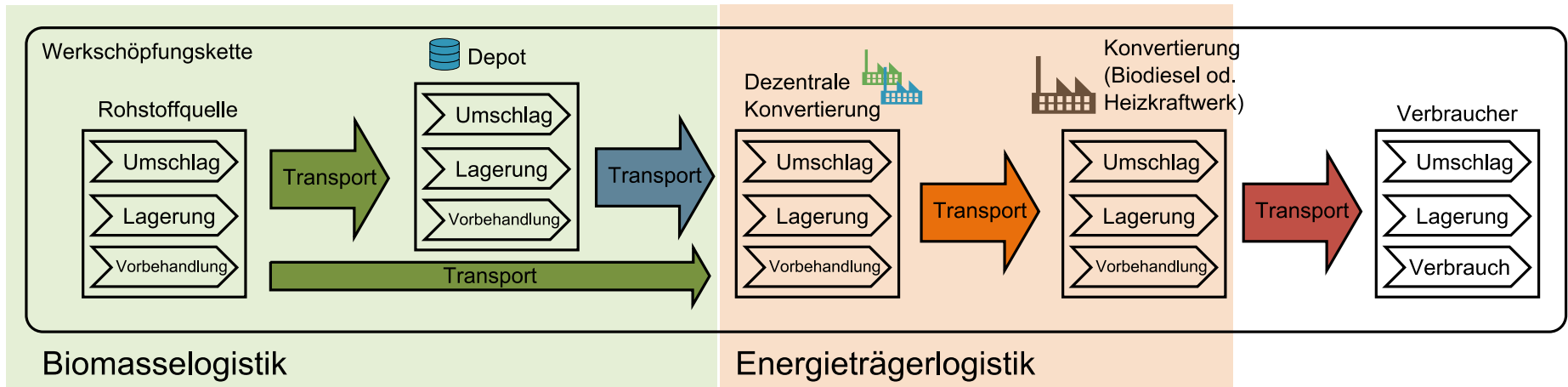
„Biomass based energy intermediates boosting biofuel production“

Verwertung von land- und forstwirtschaftlichen Resten (Stroh, Waldrestholz) und städtischen Biomüll

De-zentralisierte Konvertierung in Energieträger (Bioöl)

Verwertung als Treibstoff oder in Heizkraftwerken

Wertschöpfungskette



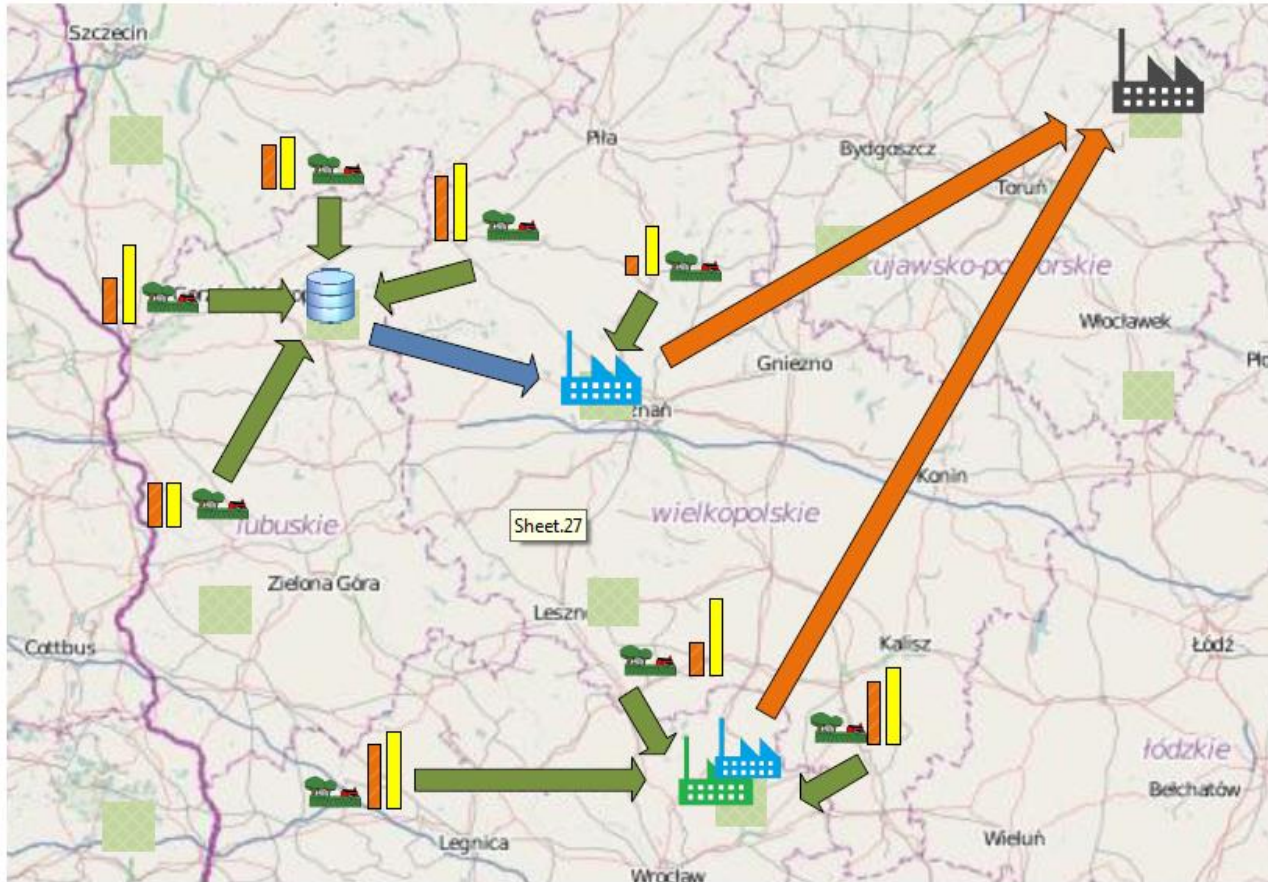
Fragestellungen

Welche Regionen in EU-28 wären günstige Standorte für eine erste Implementierung?

Wie verteilen sich die Gesamtkosten über die Wertschöpfungskette (Rohstoffe, Verarbeitung, Transport)?

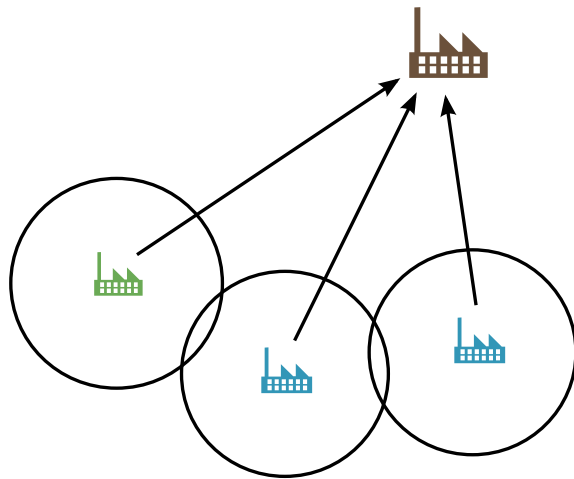
Wieviel Biodiesel könnte man über alle EU-28 produzieren und welche Kosten würden entstehen?

Standortplanung und Logistikoptimierung



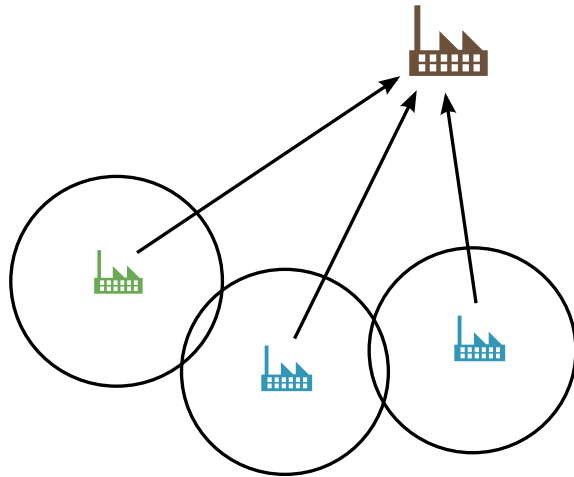
Catchment-Area Ansatz ist zu ungenau

Variante A:

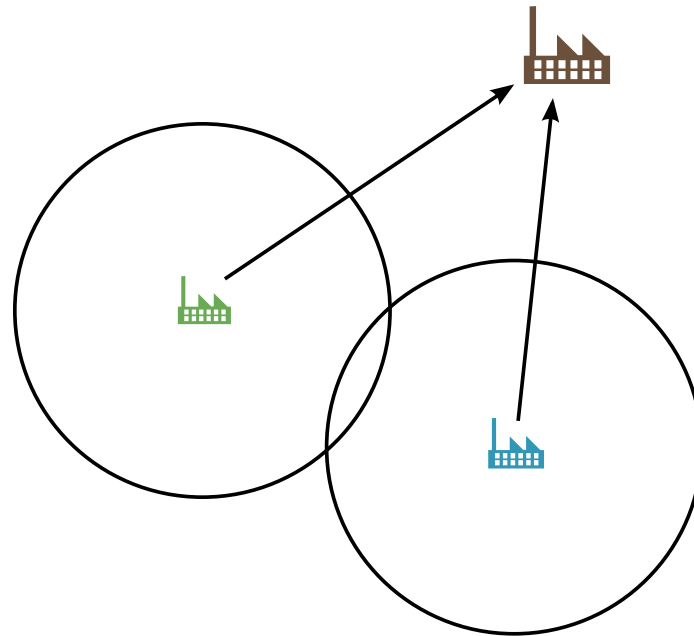


Catchment-Area Ansatz ist zu ungenau

Variante A:

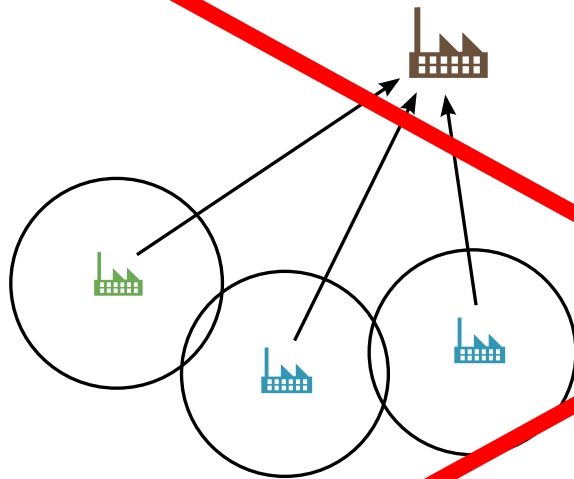


Variante B:

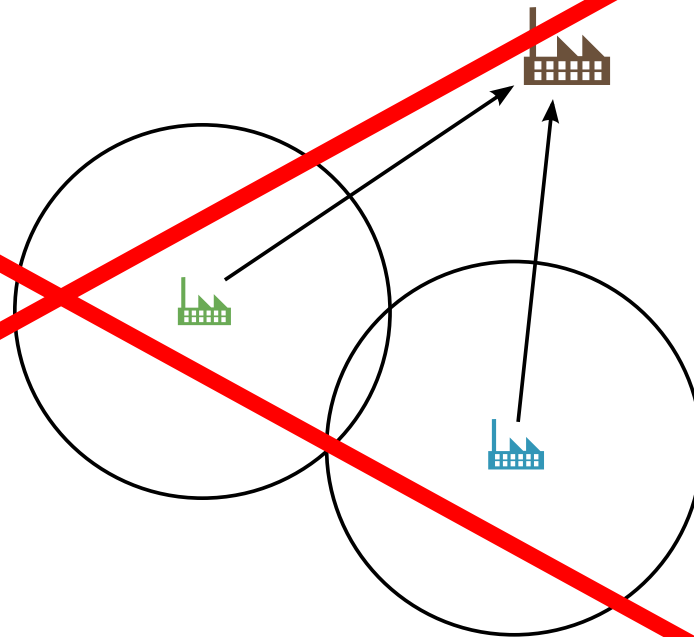


Catchment-Area Ansatz ist zu ungenau

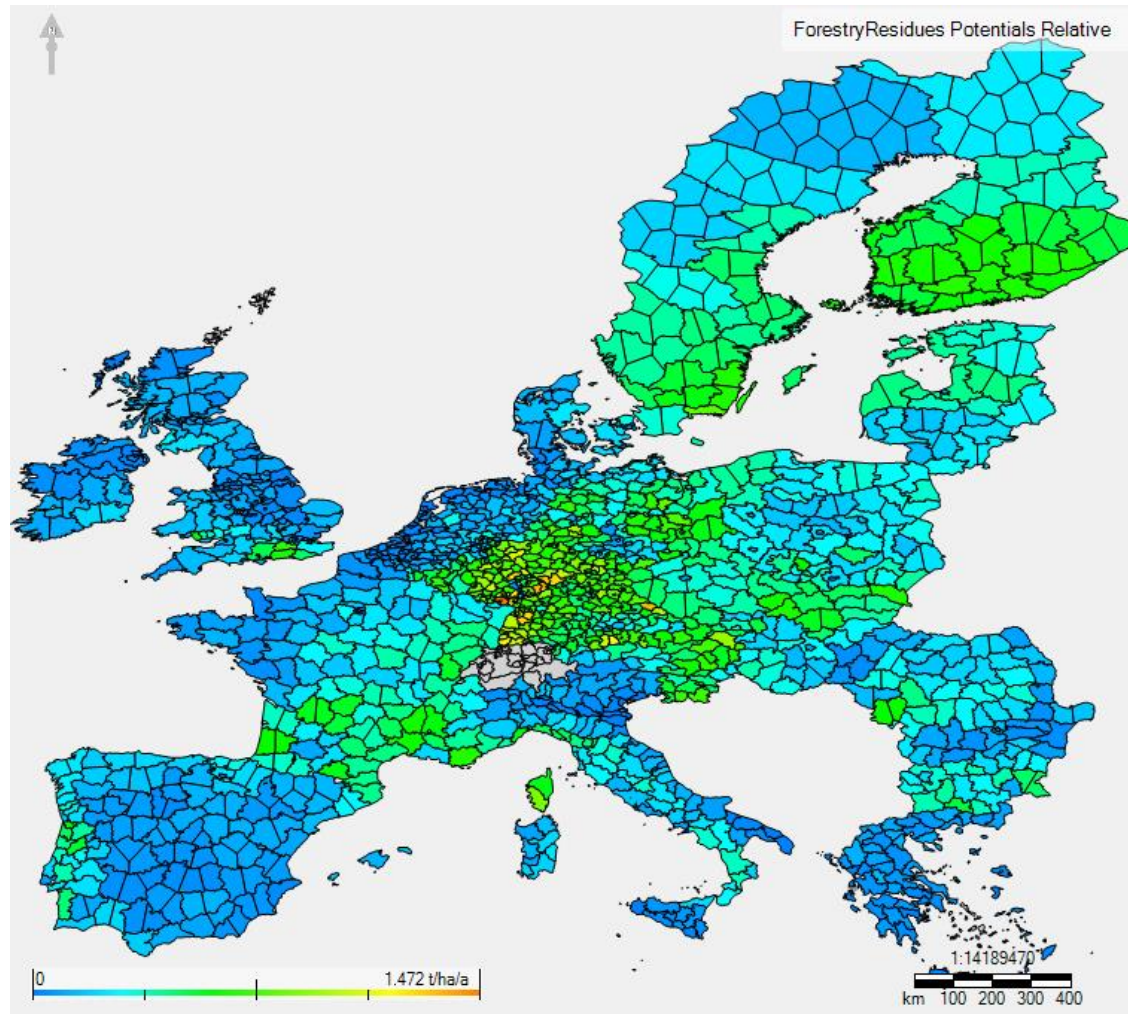
Variante A:



Variante B:



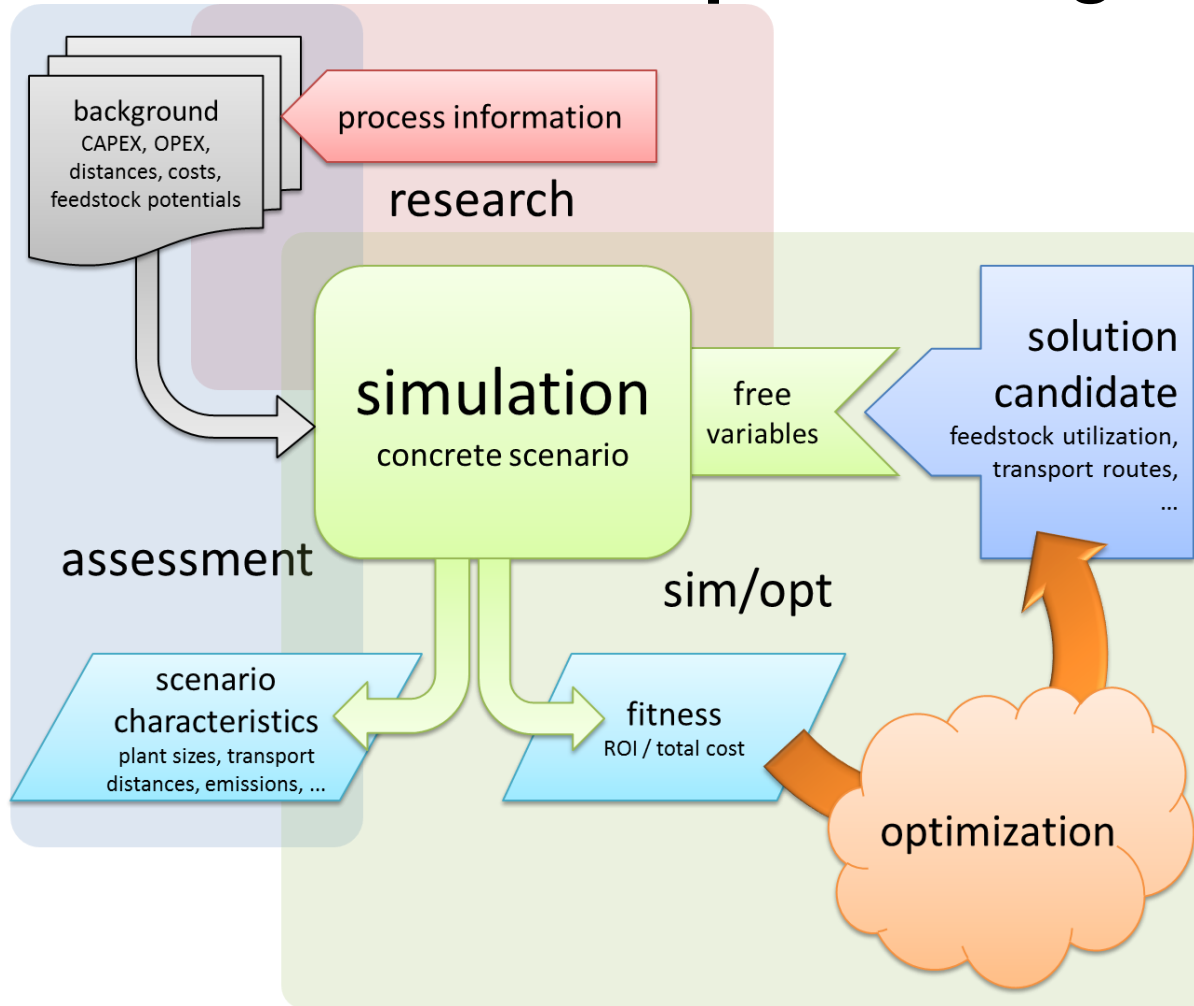
Detaillierte regionale Betrachtung (auf NUTS-3 Ebene und feiner)



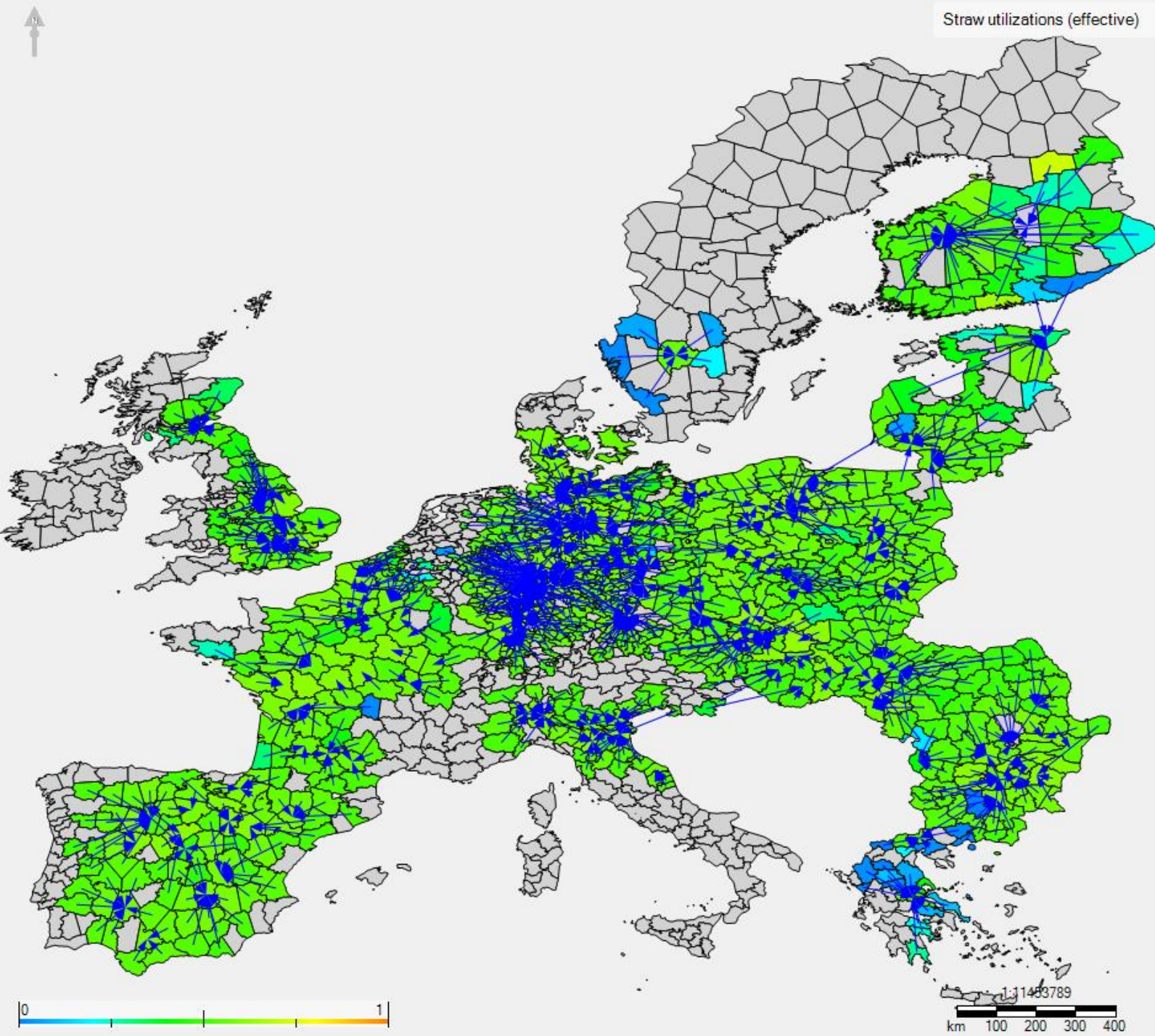
Rohstoff-
potentiale

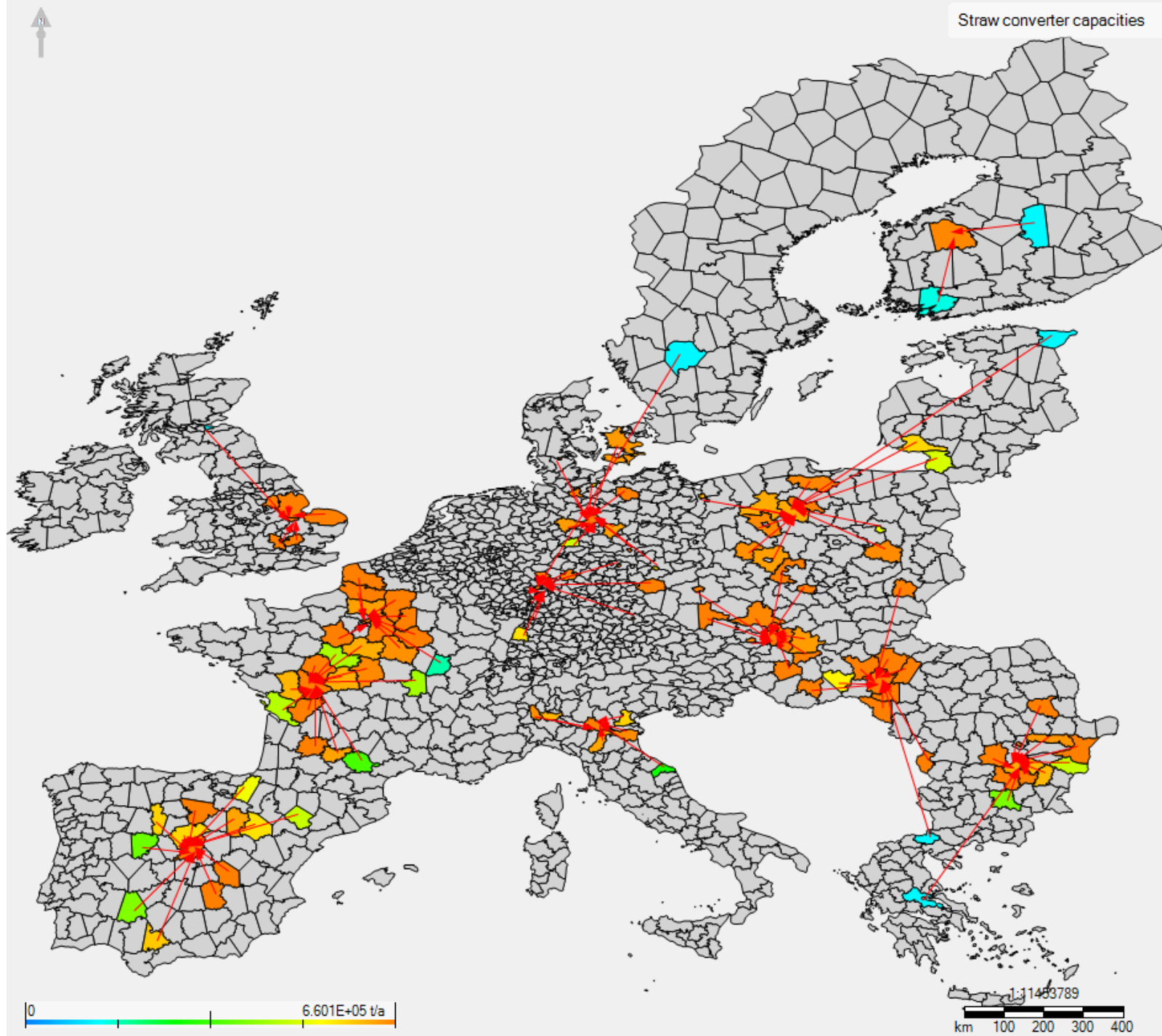
und viele
andere
Faktoren

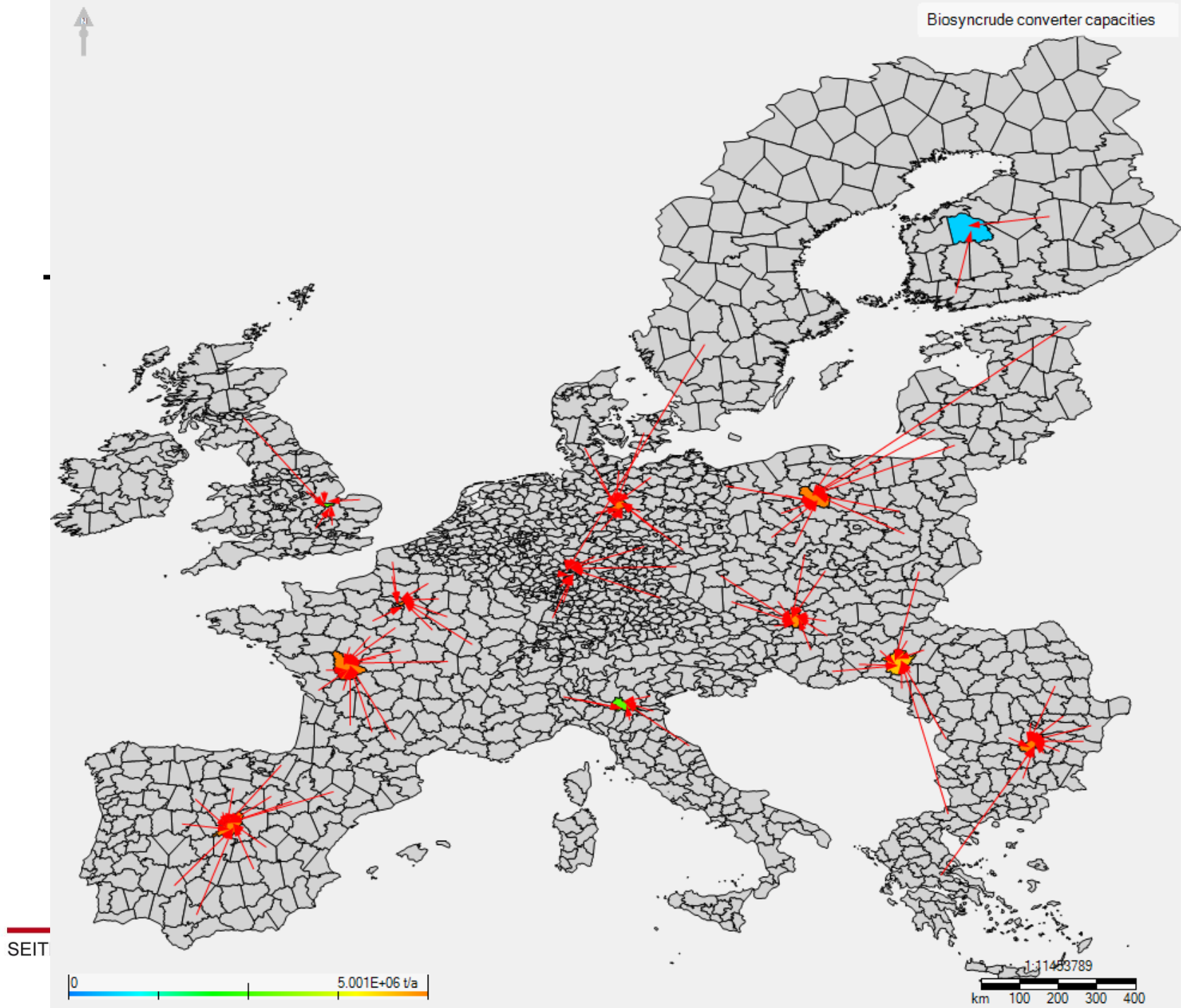
Simulationsbasierte Optimierung

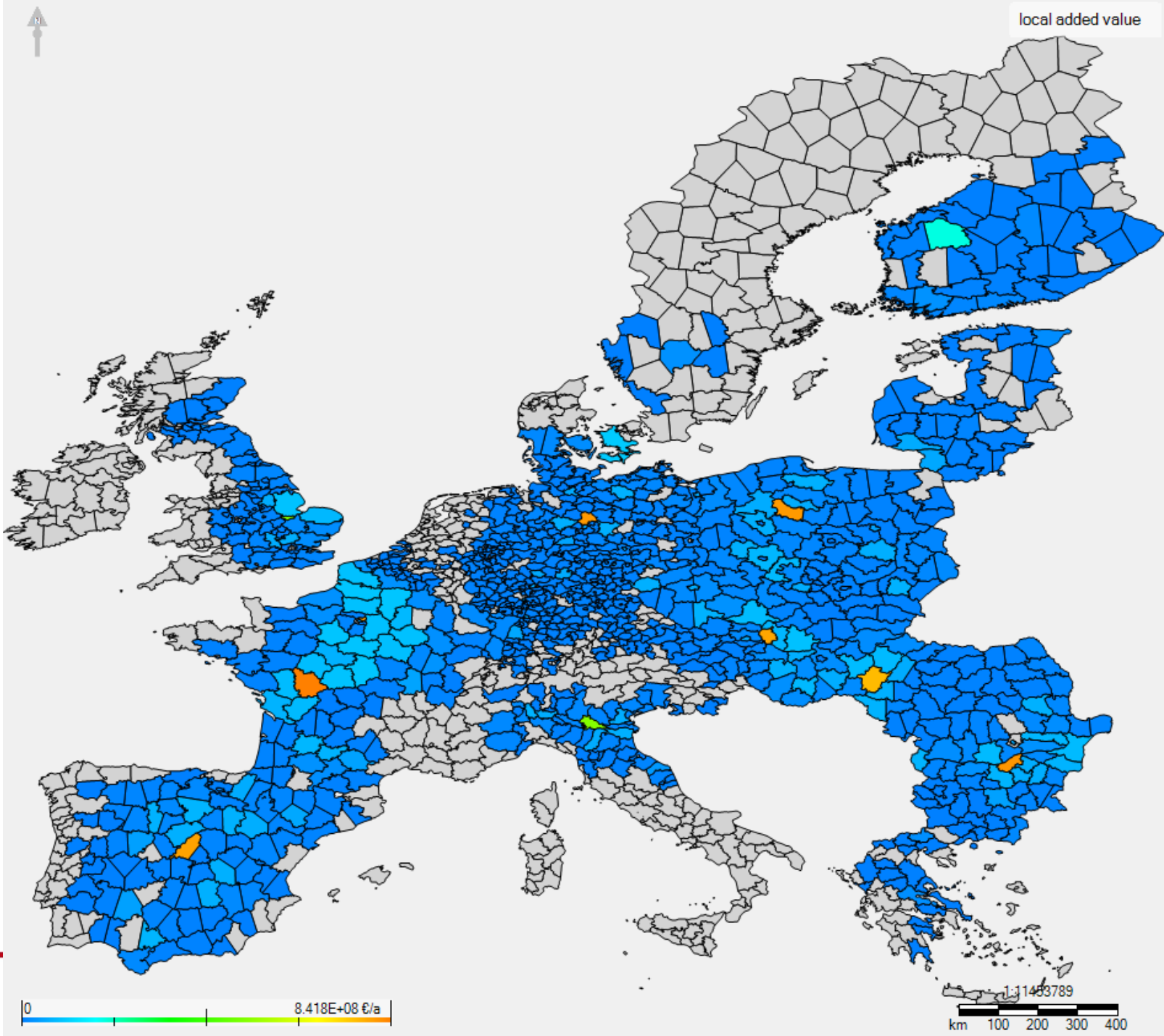


Results: Fast Pyrolysis on European Scale

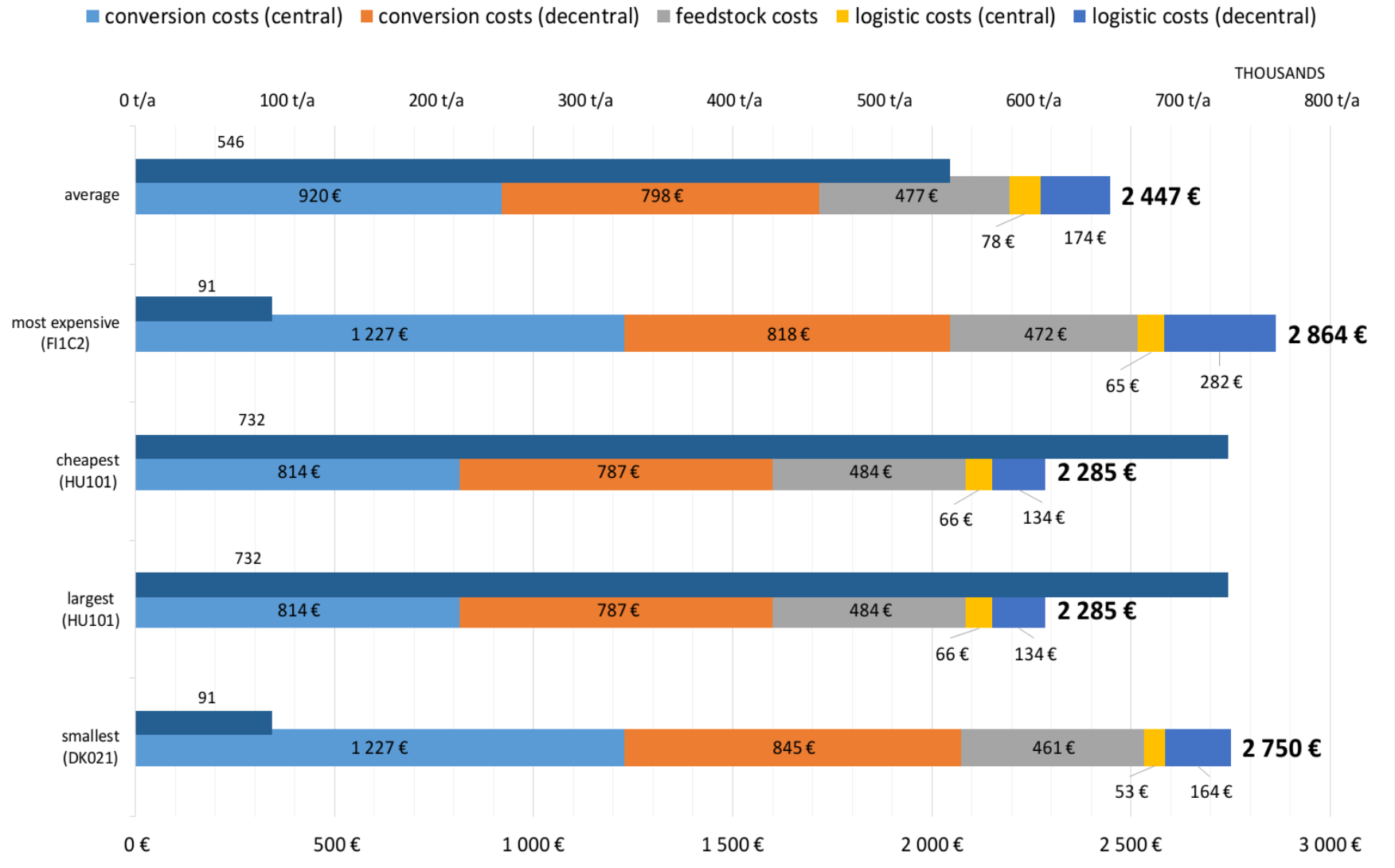








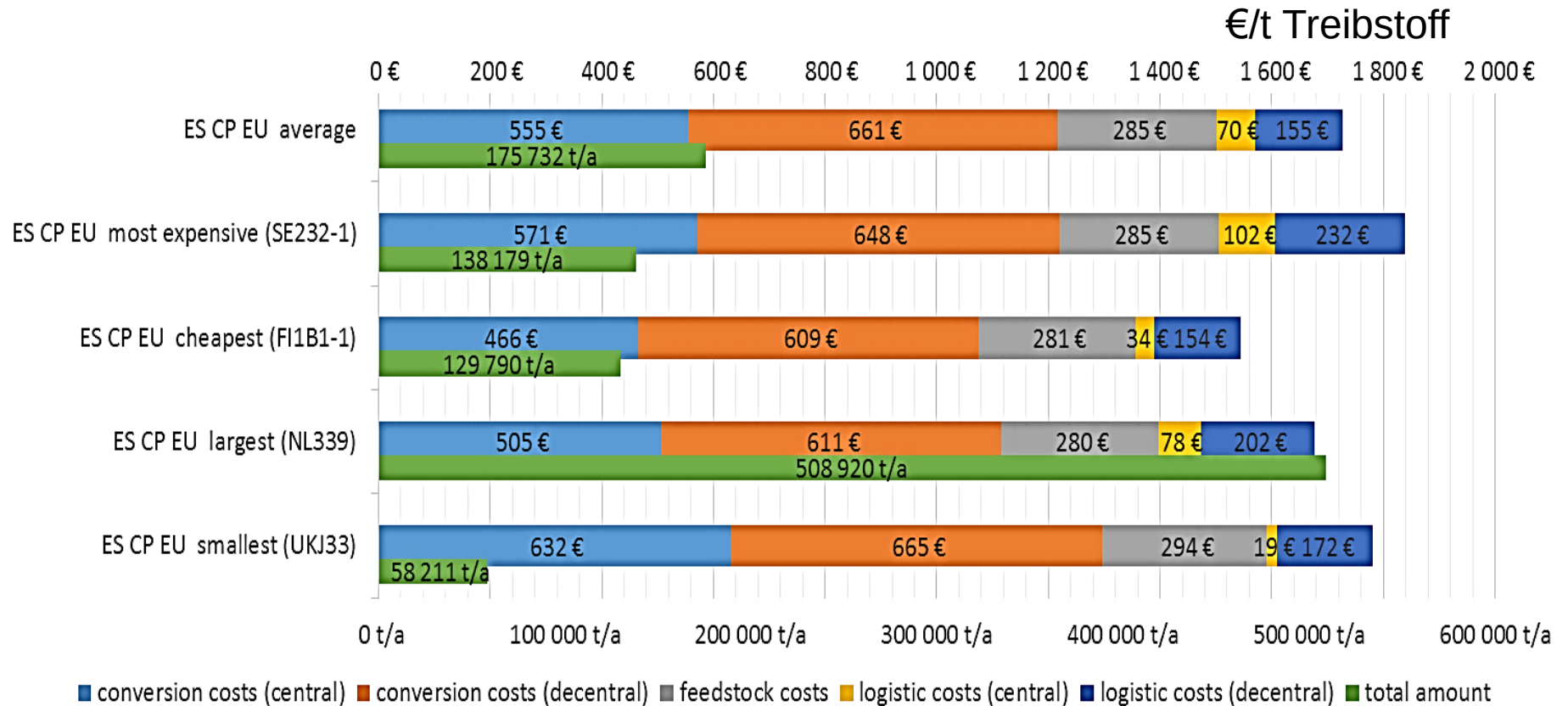
Results: Fast Pyrolysis



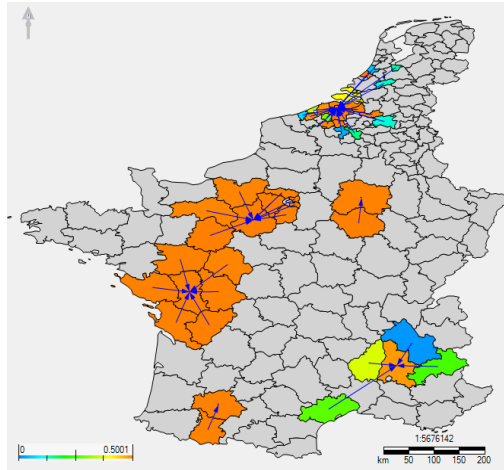
€/t Treibstoff

Kostenaufschlüsselung

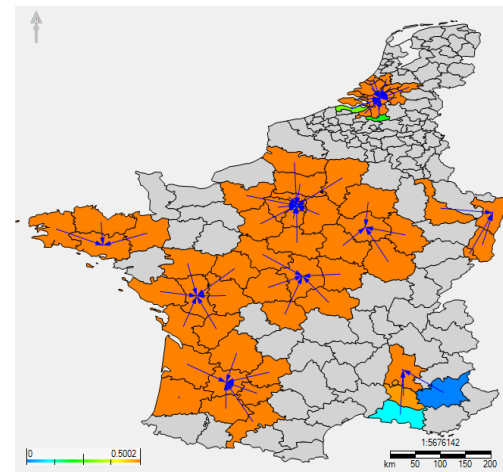
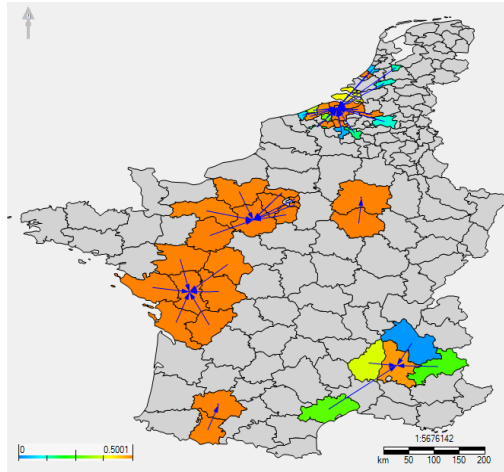
Katalytische Pyrolyse



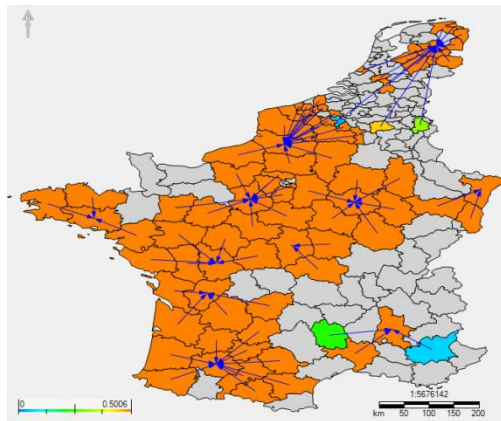
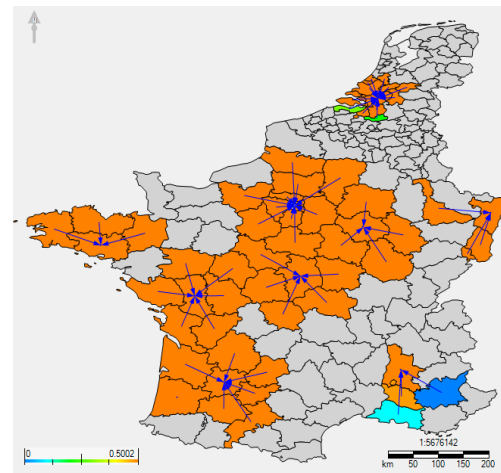
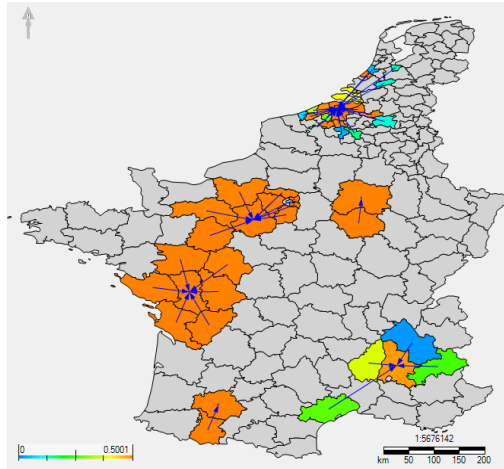
Von kleinen zu großen Mengen



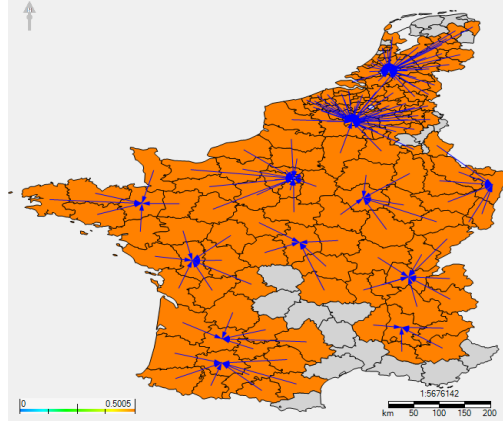
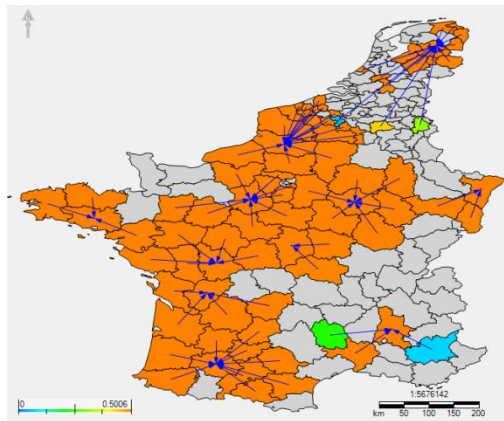
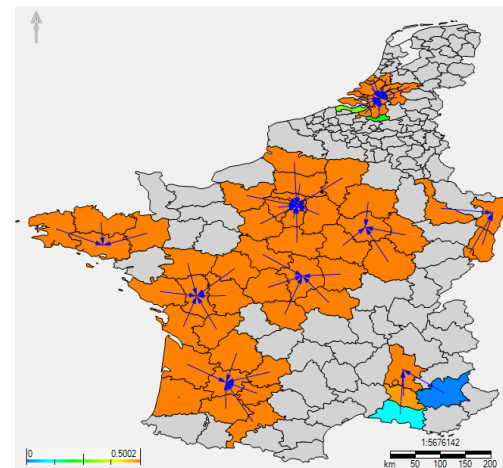
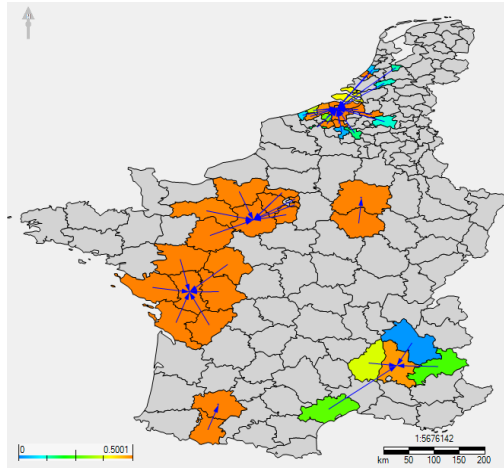
Von kleinen zu großen Mengen



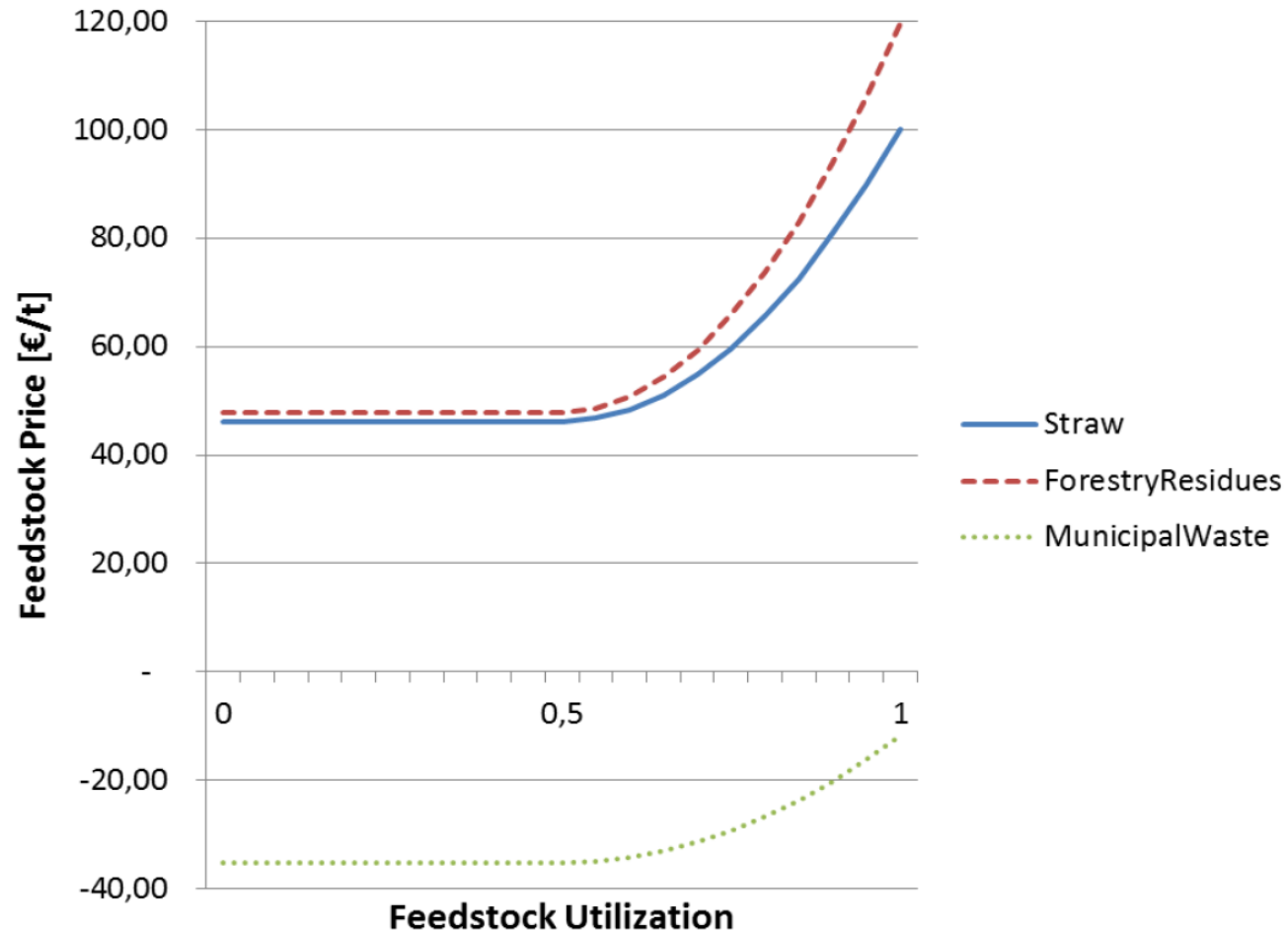
Von kleinen zu großen Mengen



Von kleinen zu großen Mengen



Preismodell für Rohstoffe



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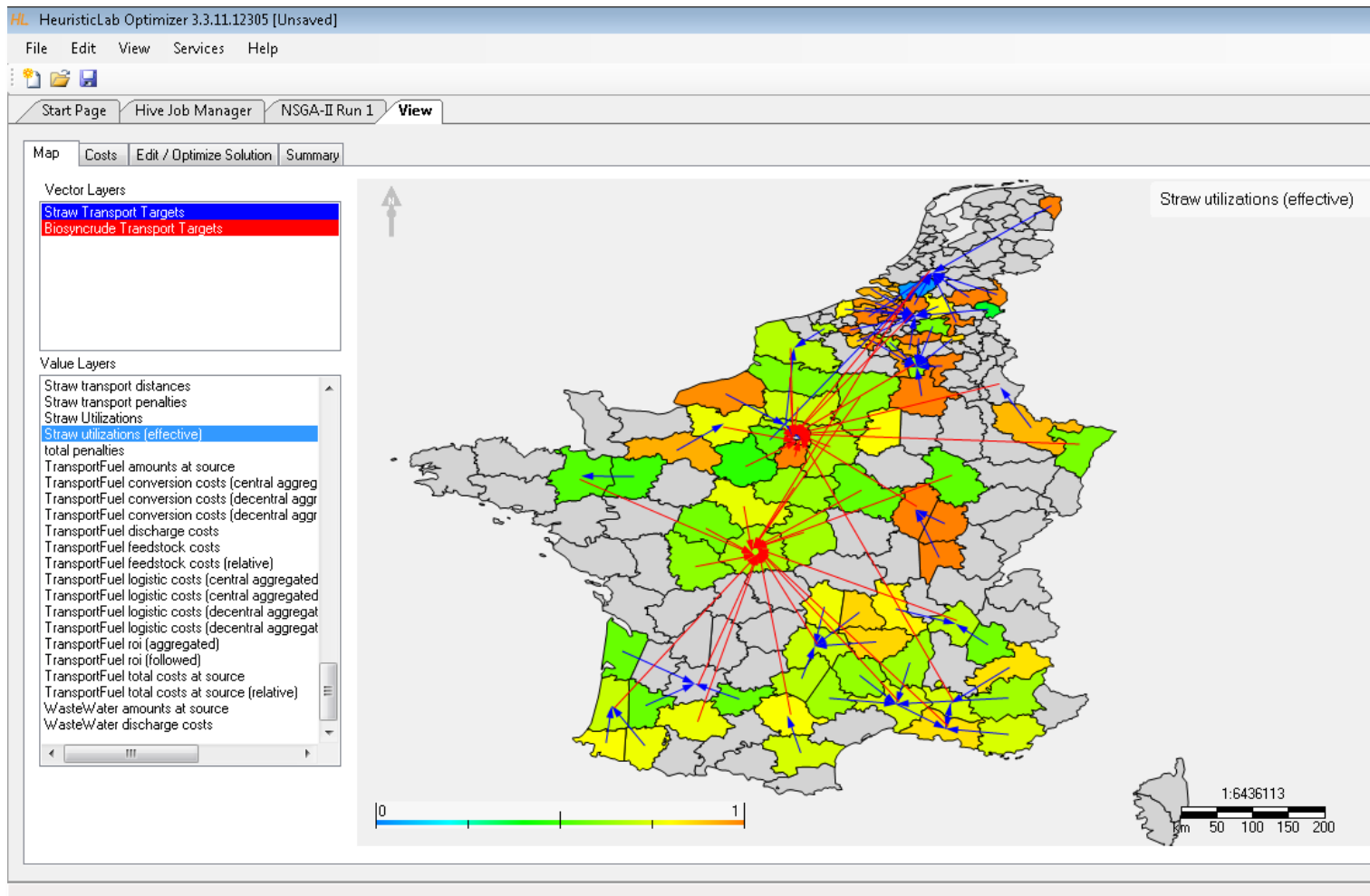
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gabriel.kronberger@fh-hagenberg.at

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A European R&D project funded
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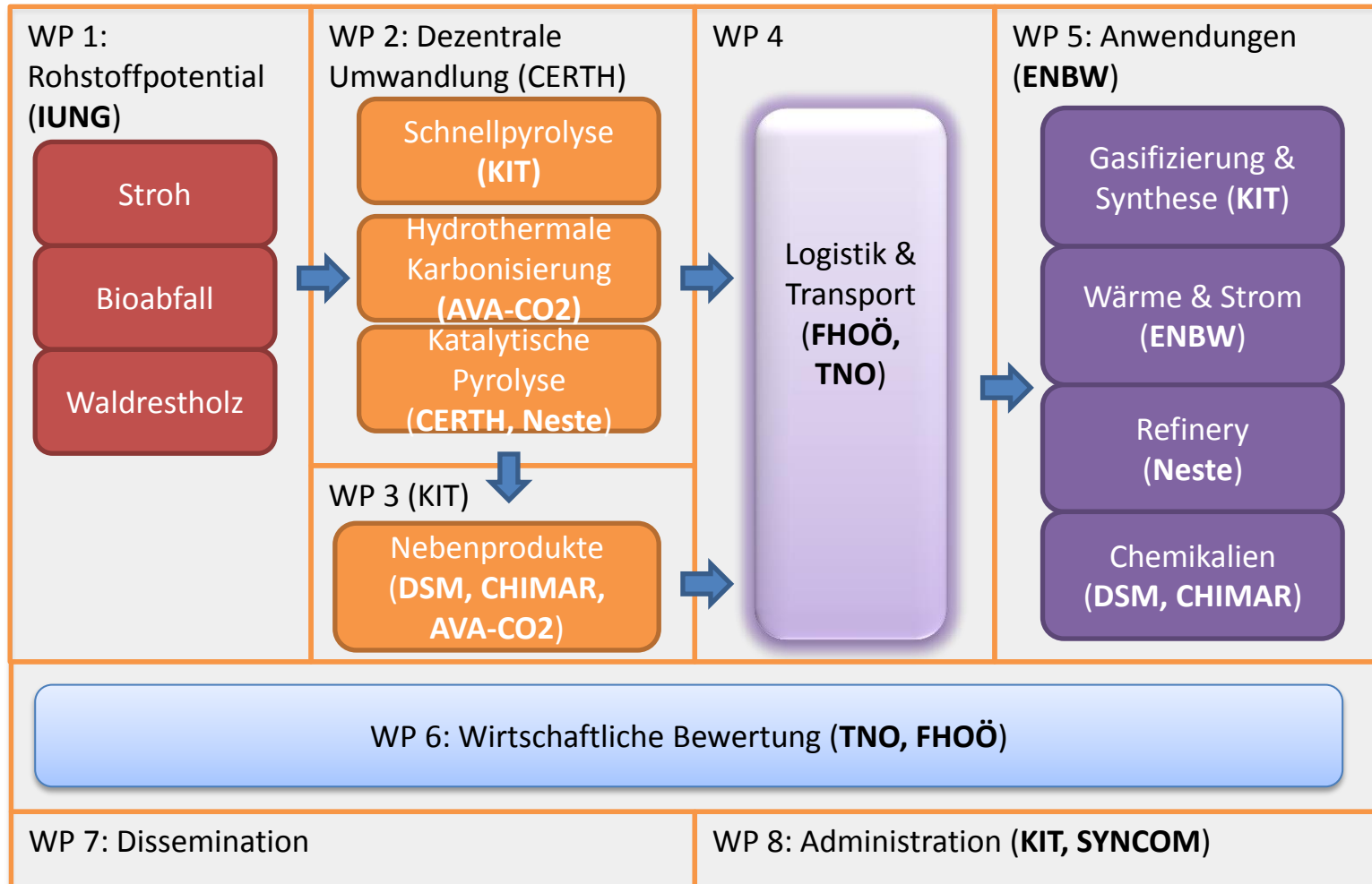


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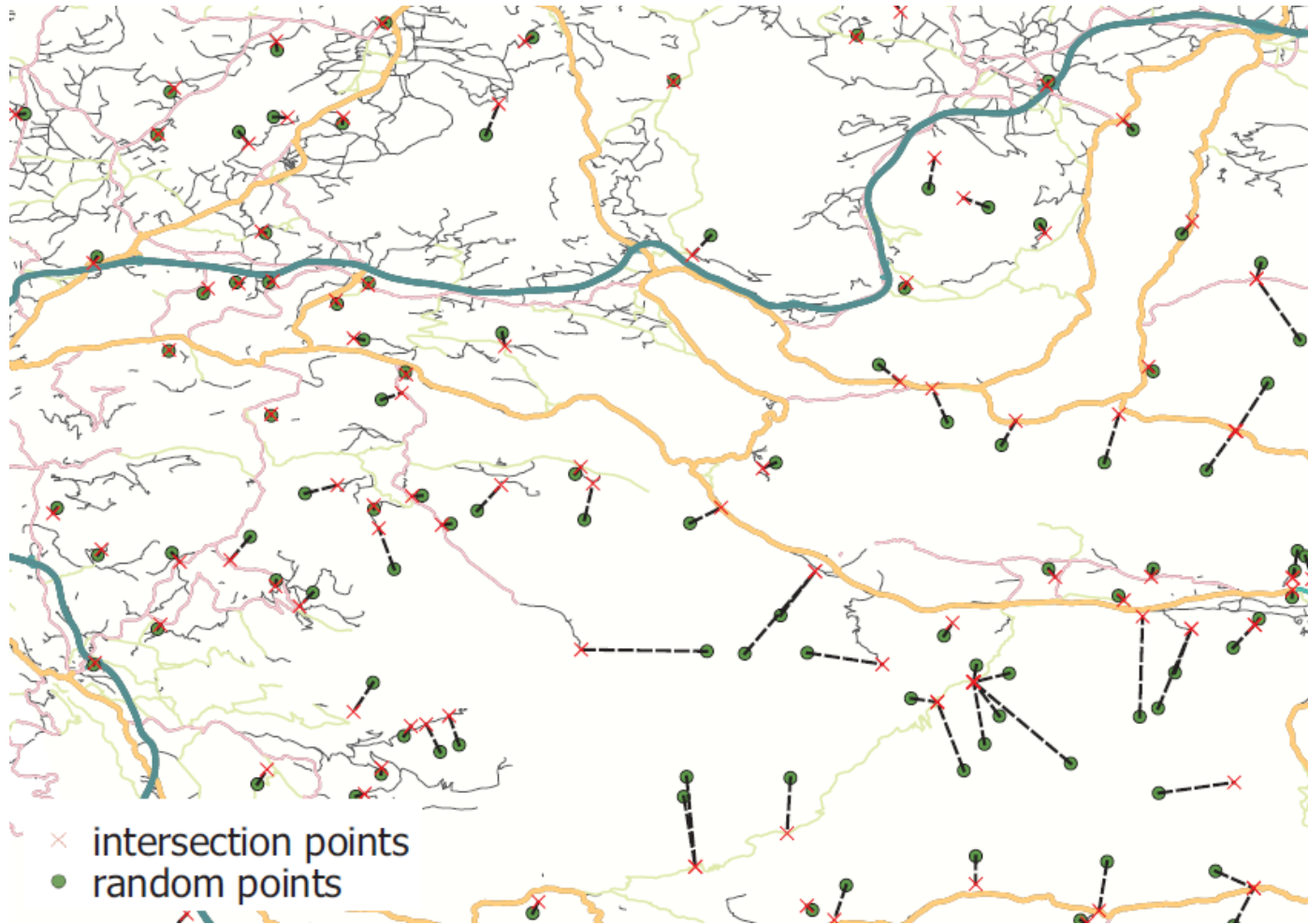


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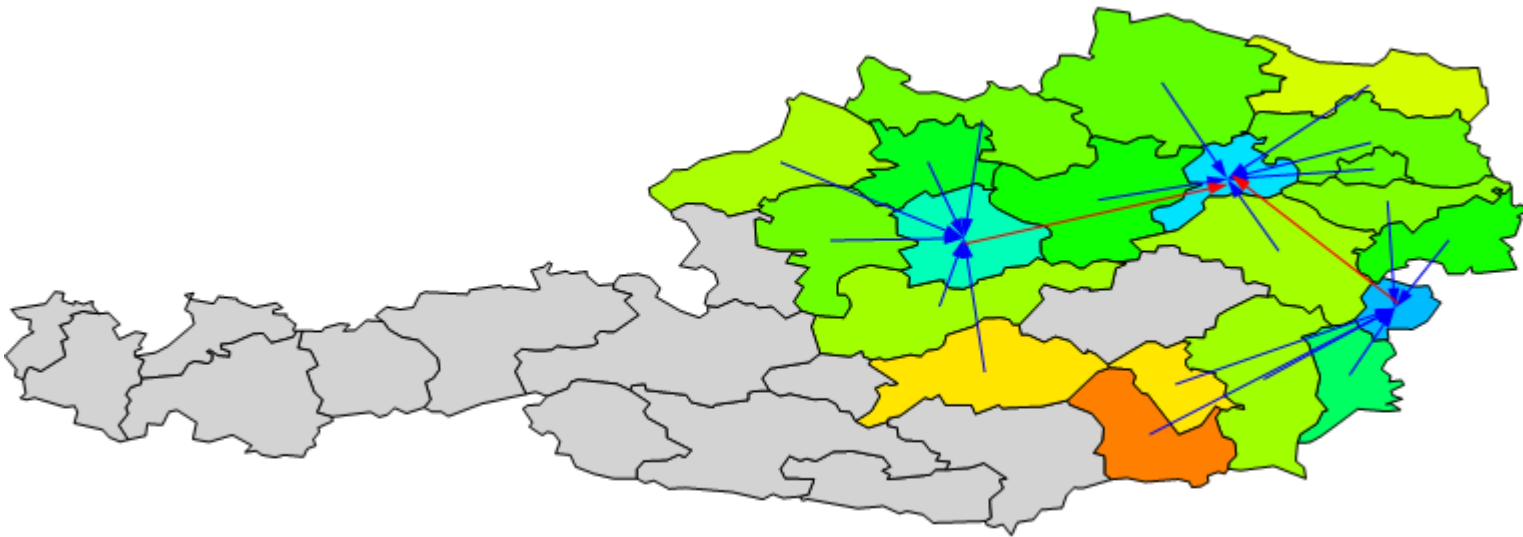
Projekt BioBoost



Abschätzung von Transportdistanzen



Beispiel Österreich (Stroh → Bioöl → Biodiesel)



Farbe zeigt
Transportkosten