

Biomass in RESolve

Energy modeling approach and draft results

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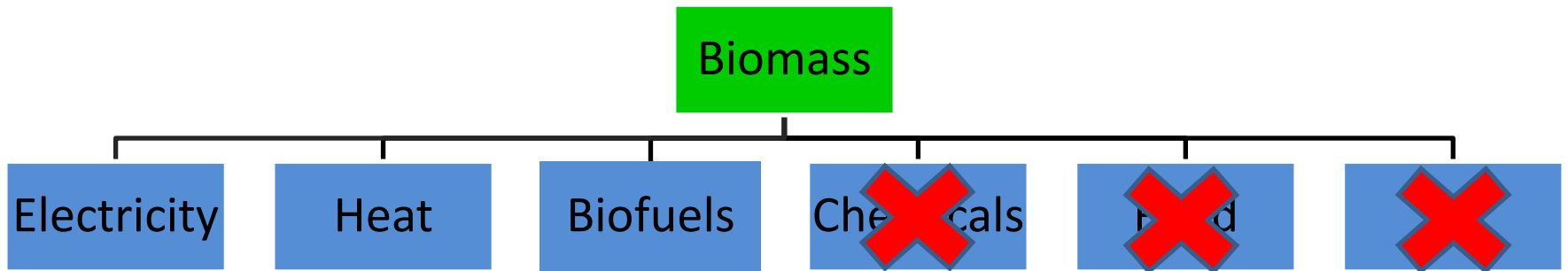
*Workshop 'Biomass role in the RED 2020 energy futures'
at 2nd AEBIOM conference
June 29th 2011, Brussels*

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- Biomass allocation in RESolve
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Objective

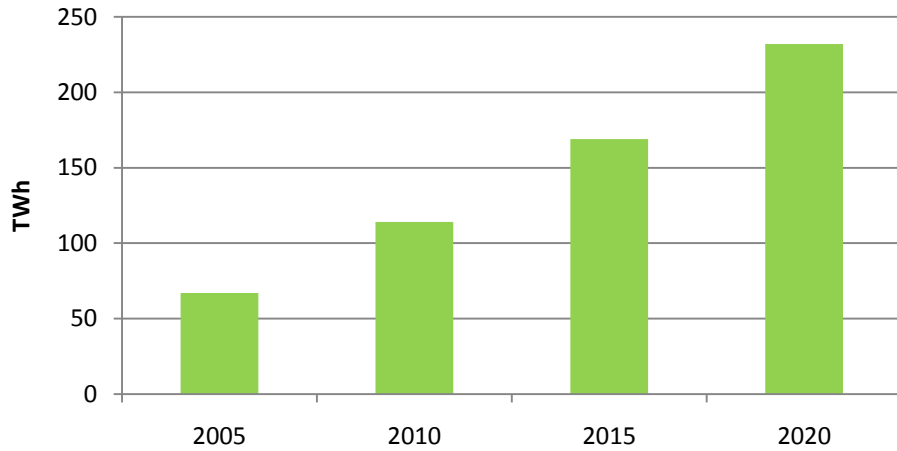
“Assess the role of bioenergy in different sectors”



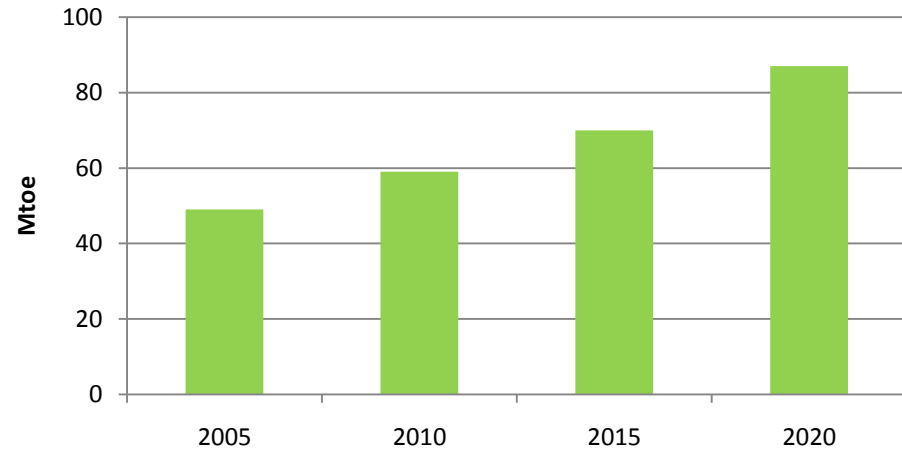
- Develop a model that allows for biomass allocation over different sectors
- Scenario analysis
- Interaction with PRIMES

NREAP figures

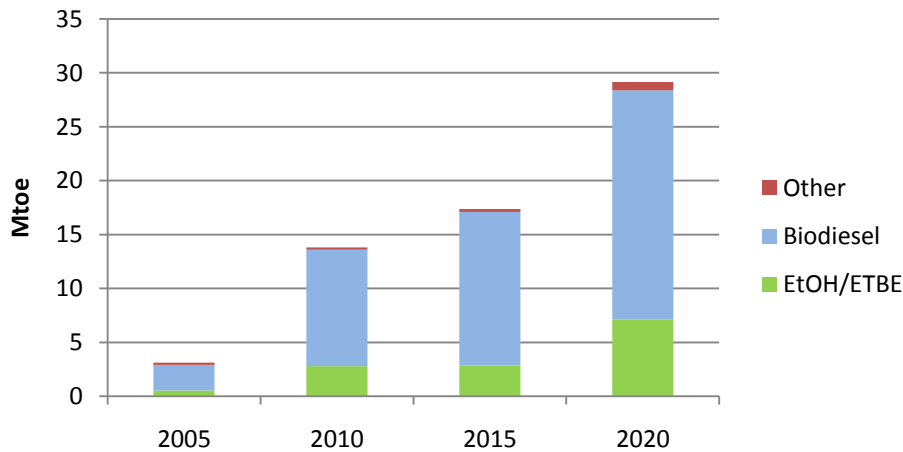
RES-E



RES-H



Biofuels



Biomass allocation in RESolve-T

*Find the **minimal additional cost allocations** along the bio-energy supply chain in the EU, given projections of demand, potentials and technological progress*

Biomass allocation in RESolve-T

Find the **minimal additional cost allocations** along the bio-energy supply chain in the EU, given projections of demand, potentials and technological progress

with respect to reference commodities

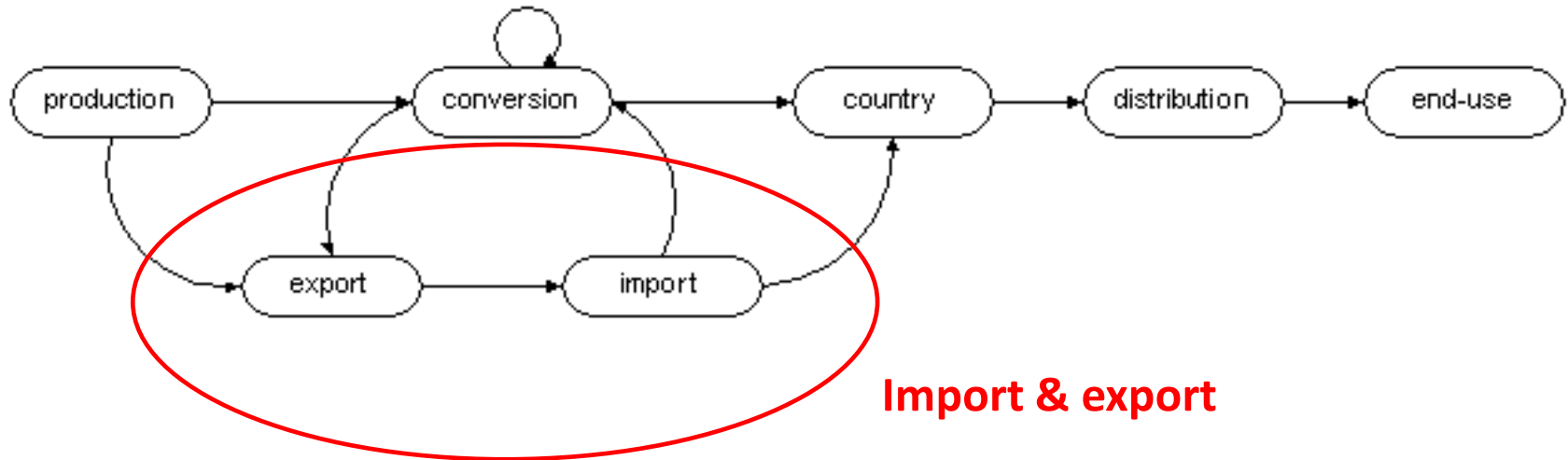
Biomass allocation in RESolve-T

Find the **minimal additional cost allocations** along the bio-energy supply chain in the EU, given projections of **demand**, potentials and technological progress

with respect to reference commodities

biofuel target, bio-electricity and -heat

How does it work?

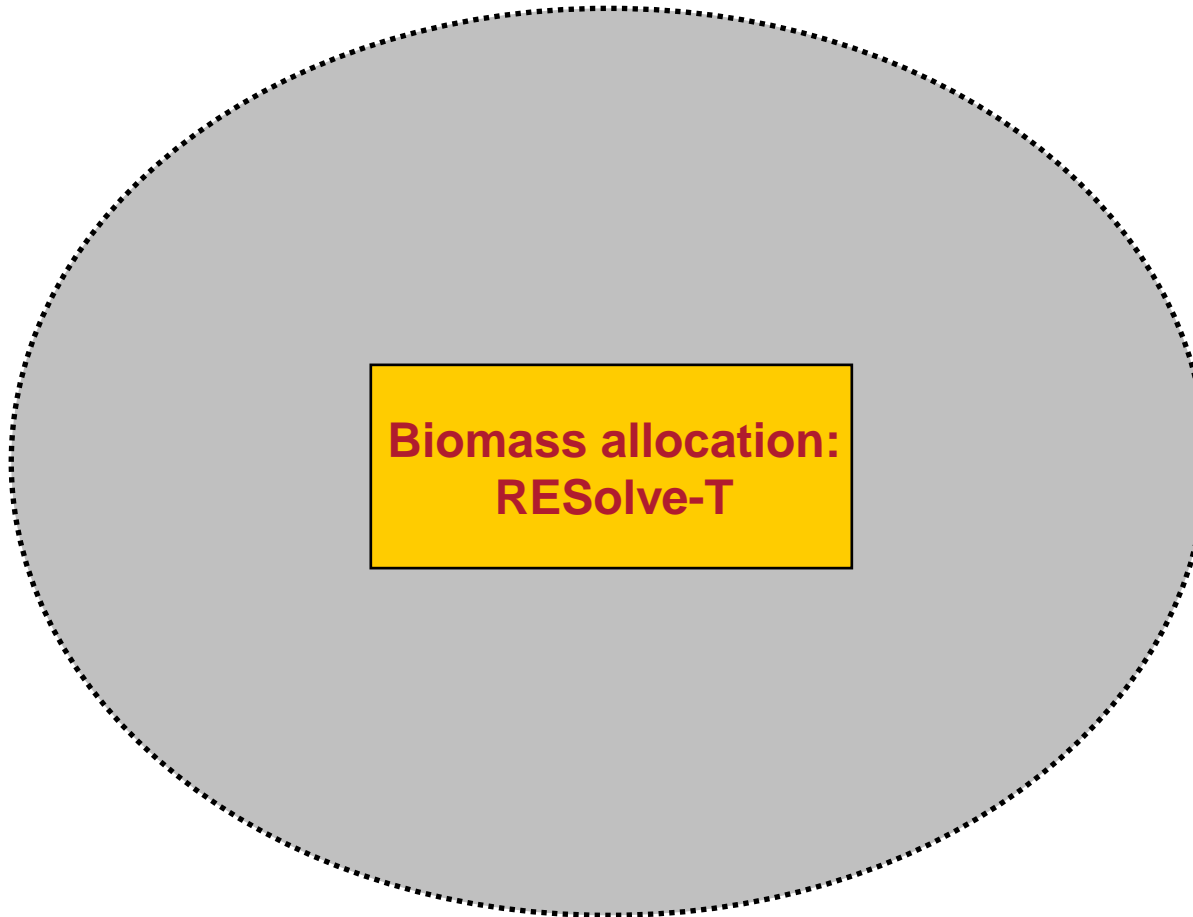


Demand - NREAPs

Biofuels	10% target, part of cars EtOH
RES-E	Solid biomass Bioliquids Biogas
RES-H	Solid biomass Bioliquids Biogas

Biomass allocation: static & dynamic

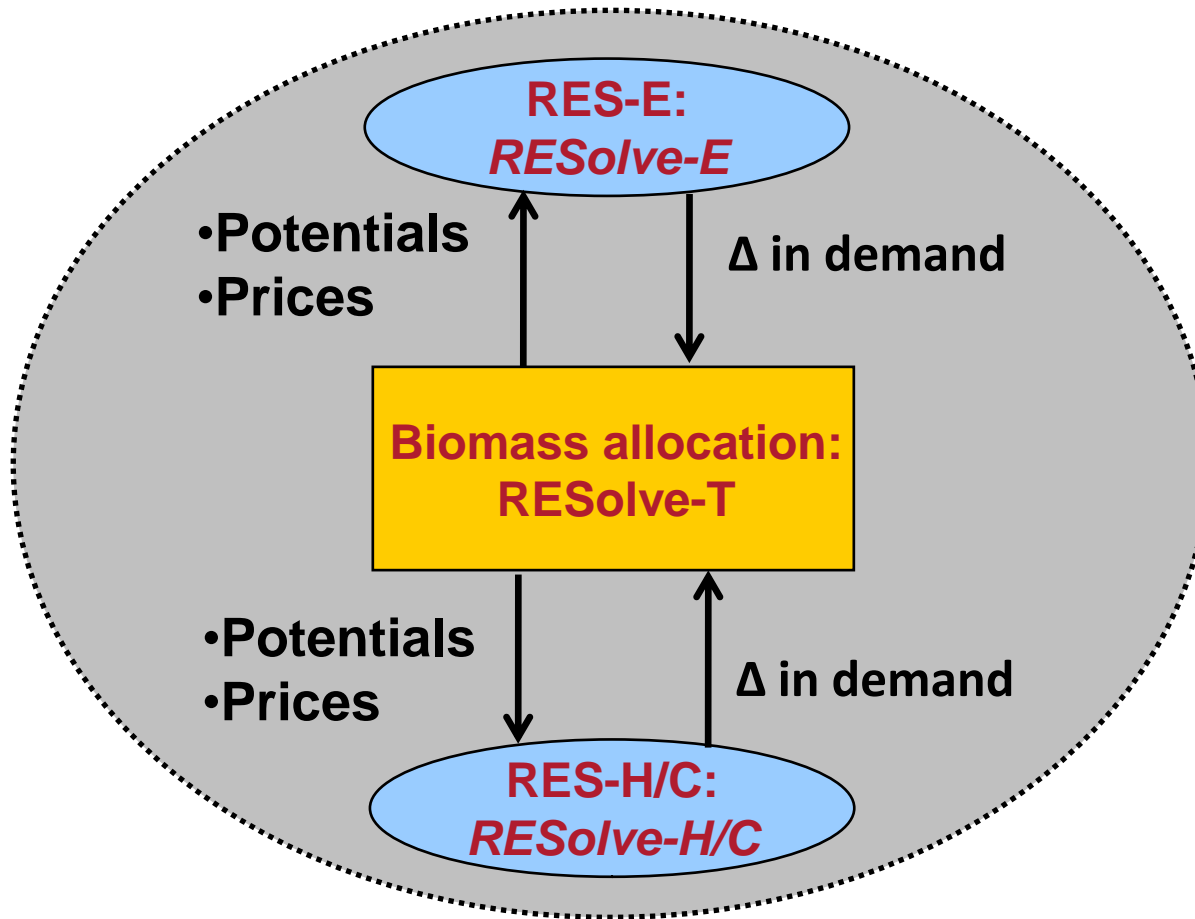
RESolve



STATIC

Biomass allocation: static & dynamic

RESolve



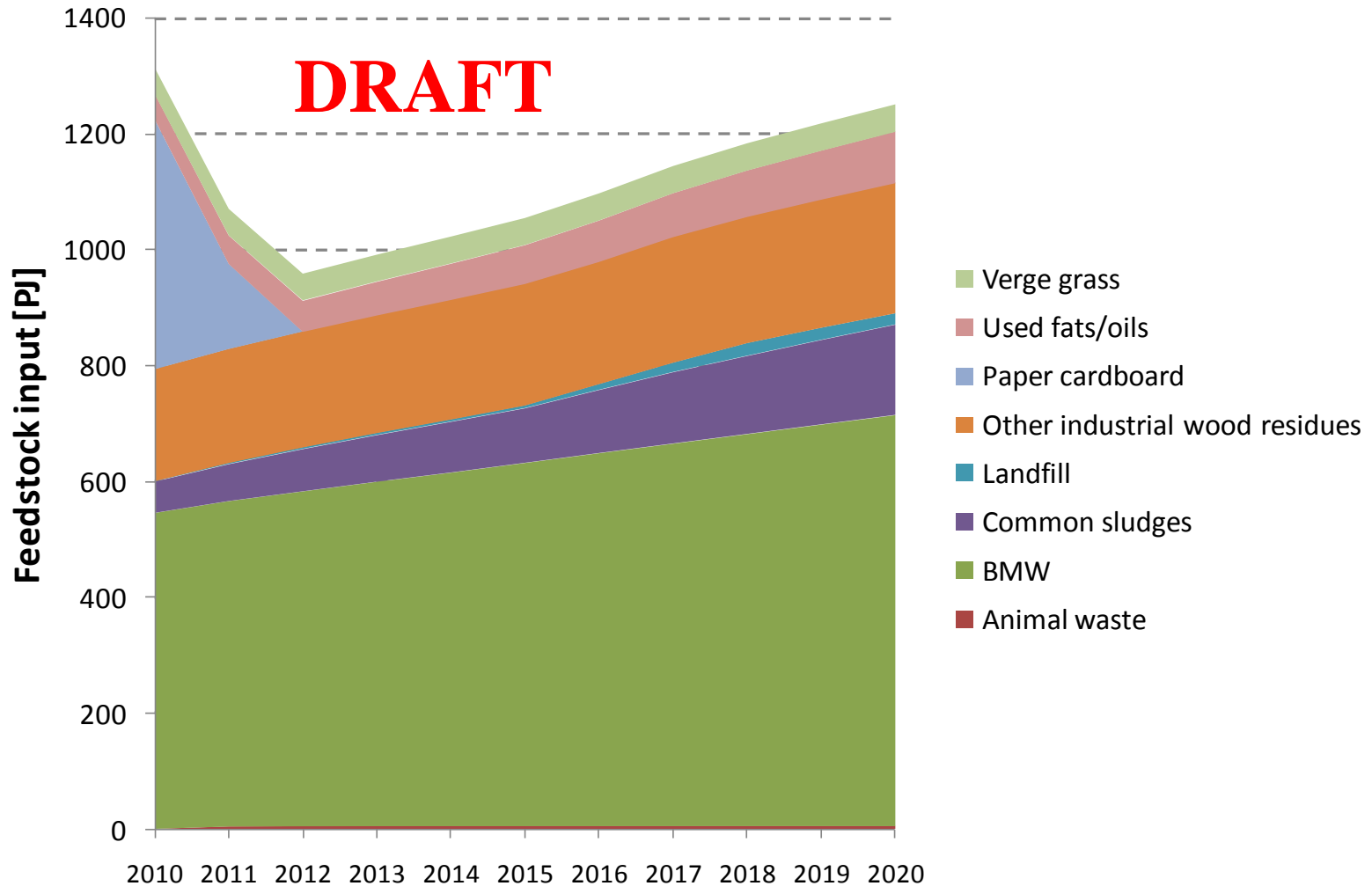
Dynamic

Results

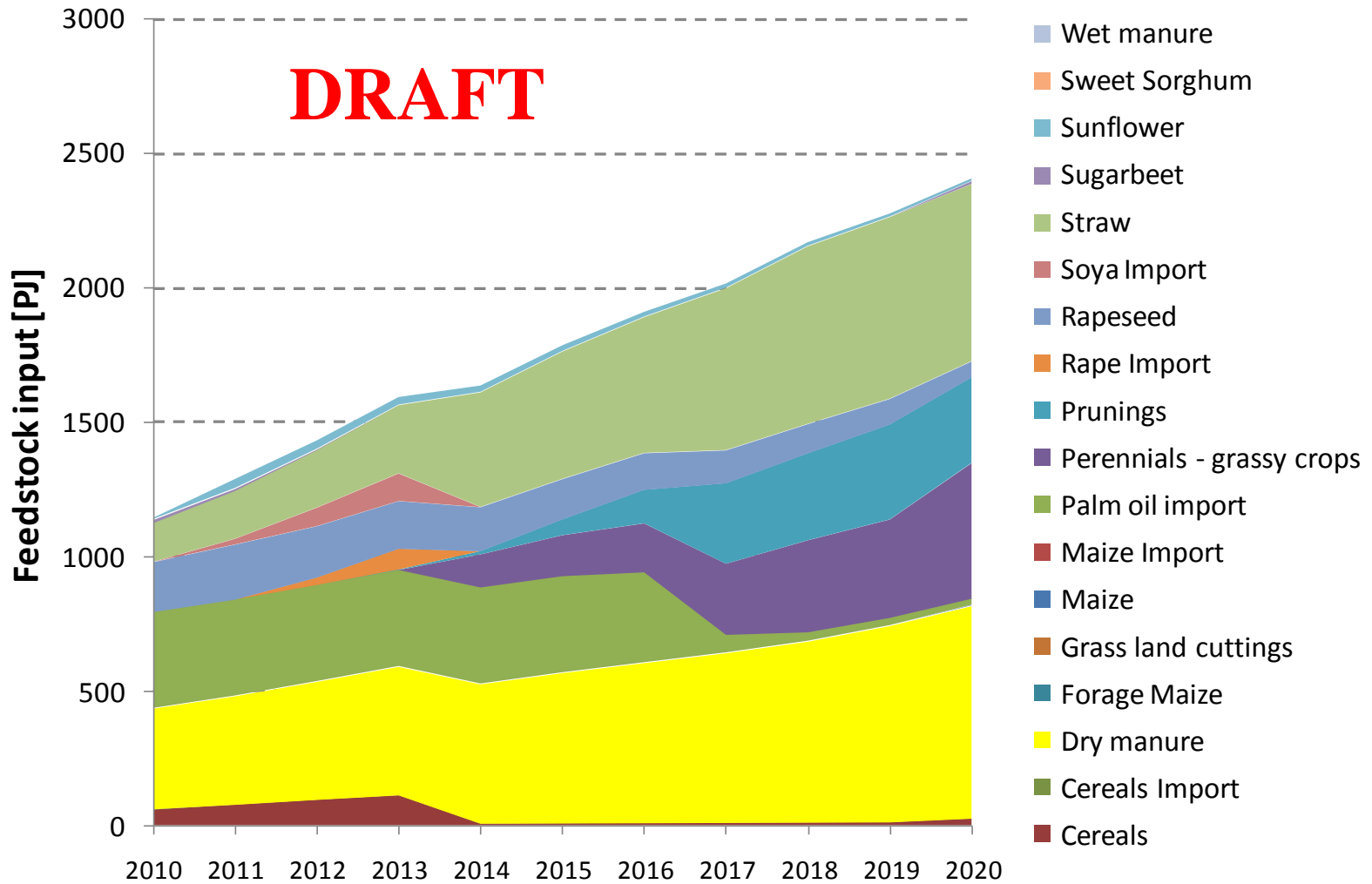
Approach

- Reference scenario
- Biomass allocation: **static** (NREAP demand)
- EU biomass cost supply: Alterra (WP3)
- Import outside EU cost supply: IIASA (WP3)
- No MS policies, only EU policies

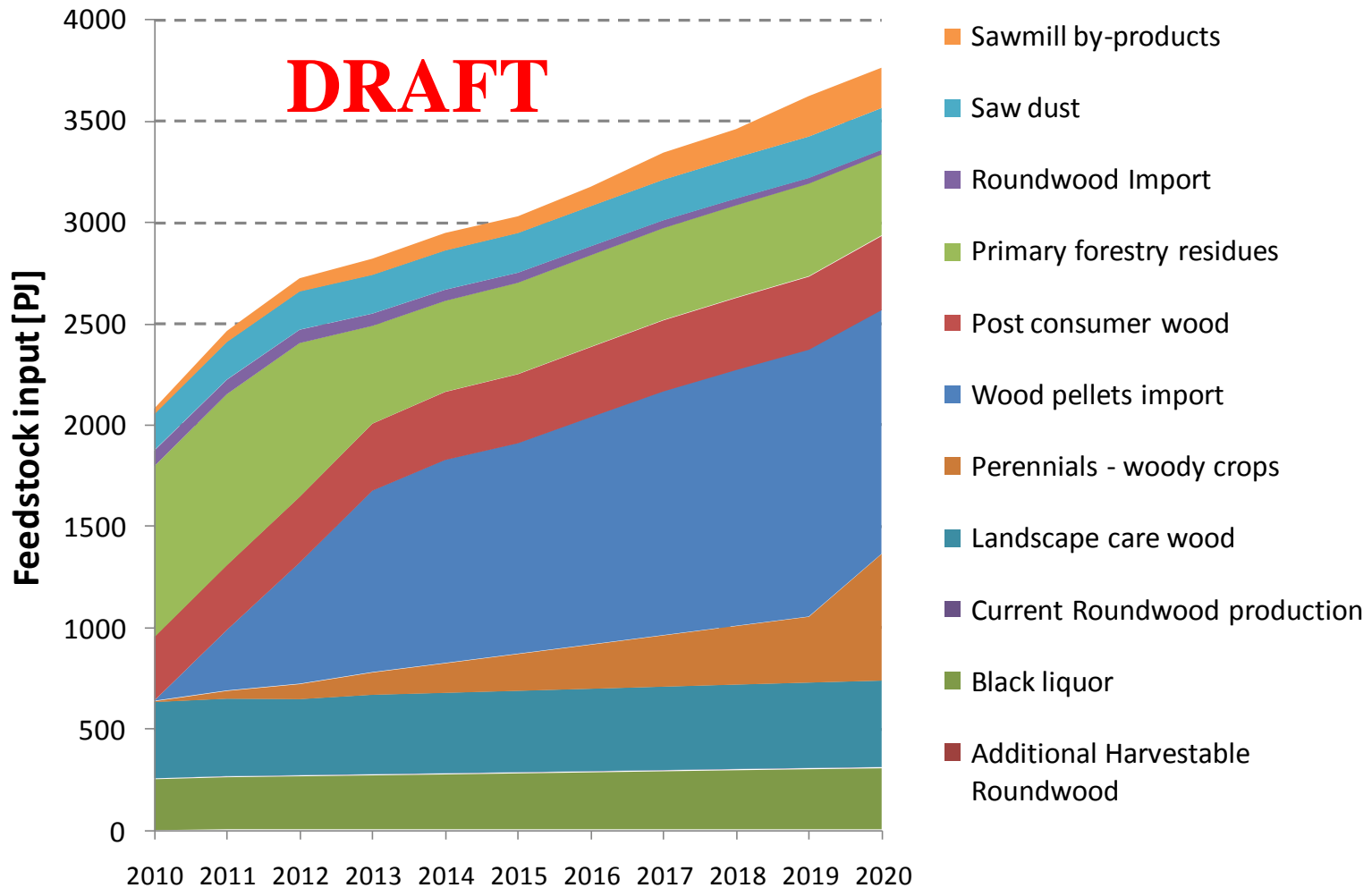
Results – Waste



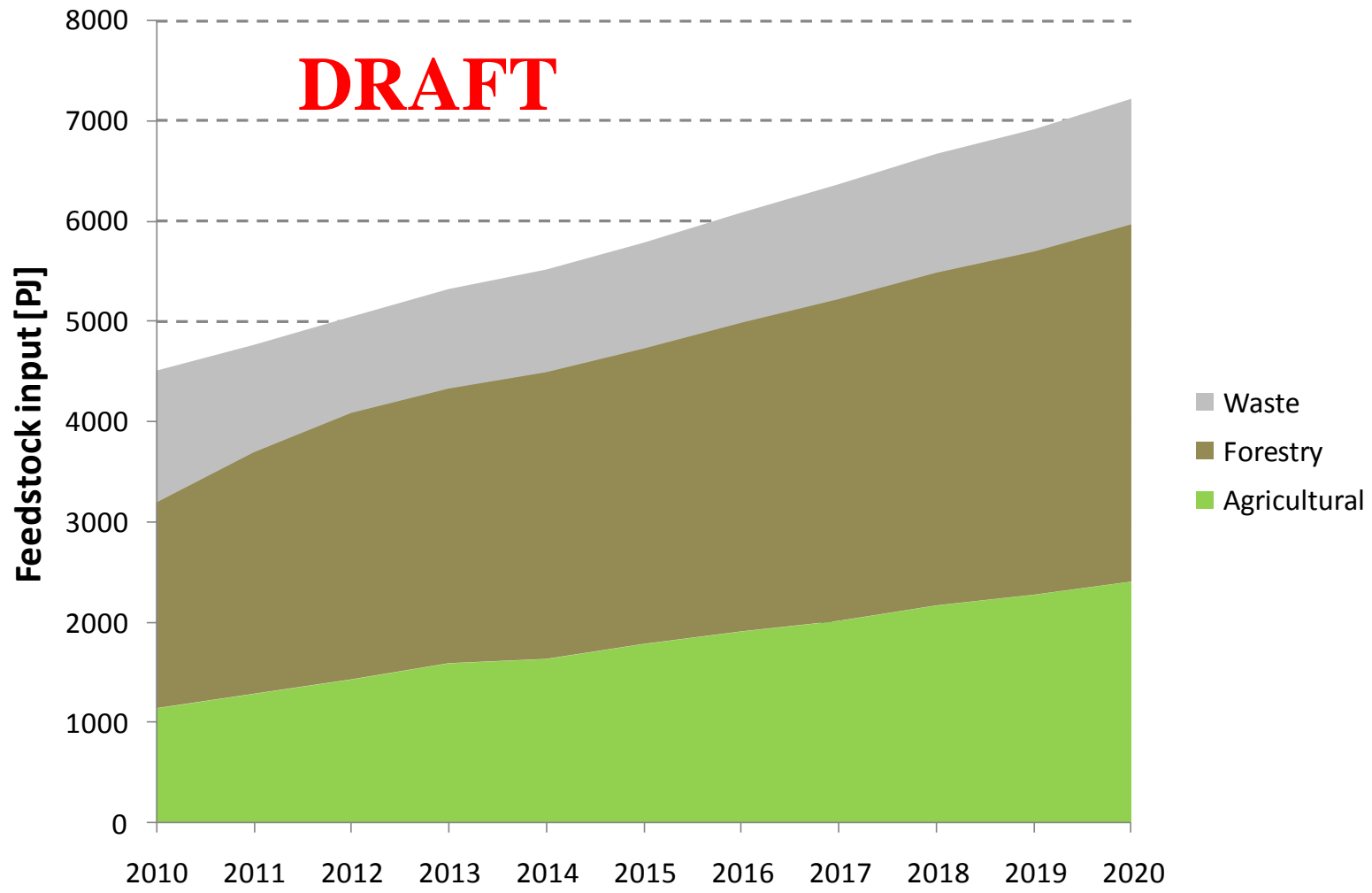
Results – Agricultural feedstocks



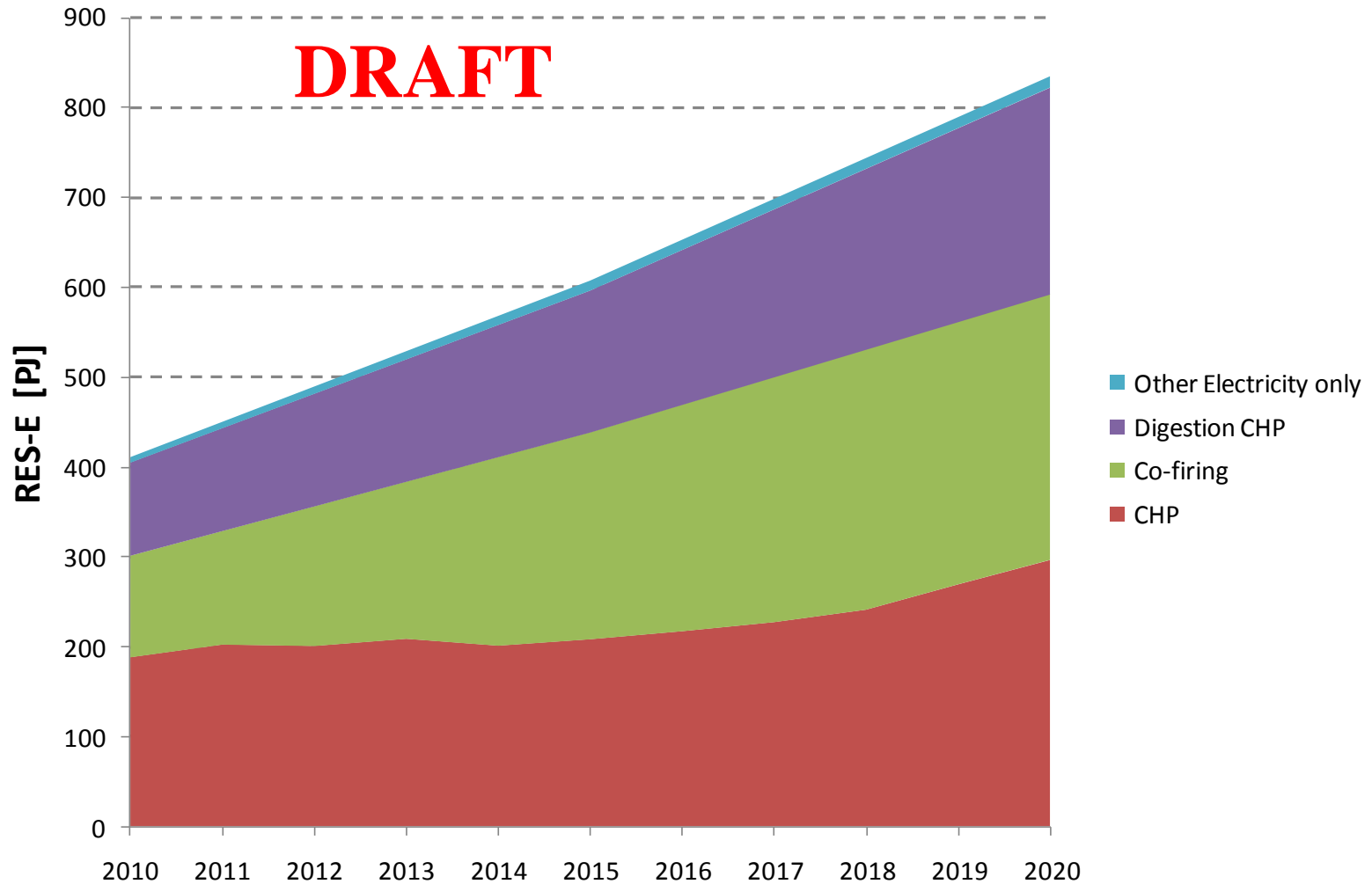
Results – Forestry feedstocks



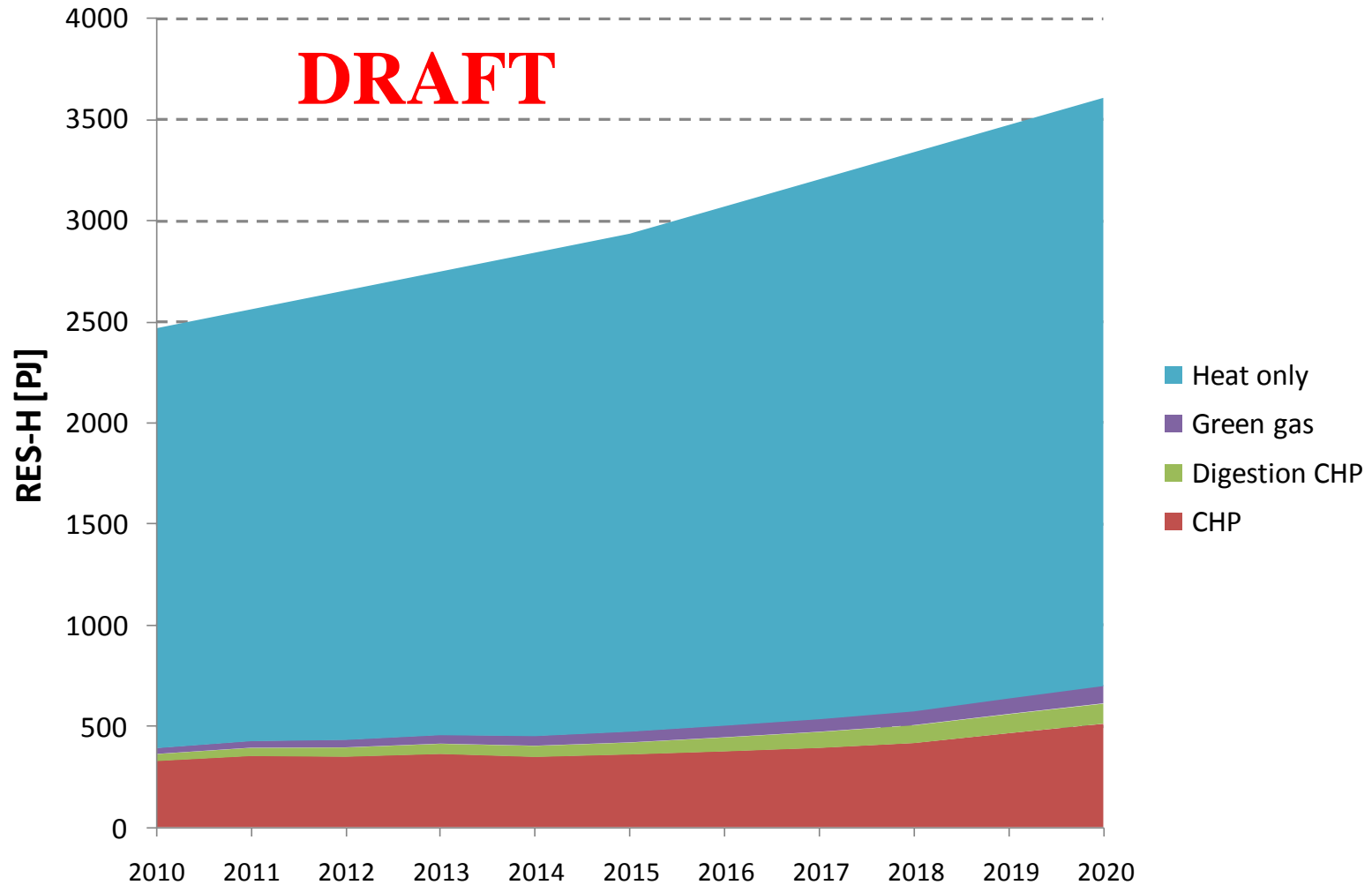
Results – Overview feedstocks



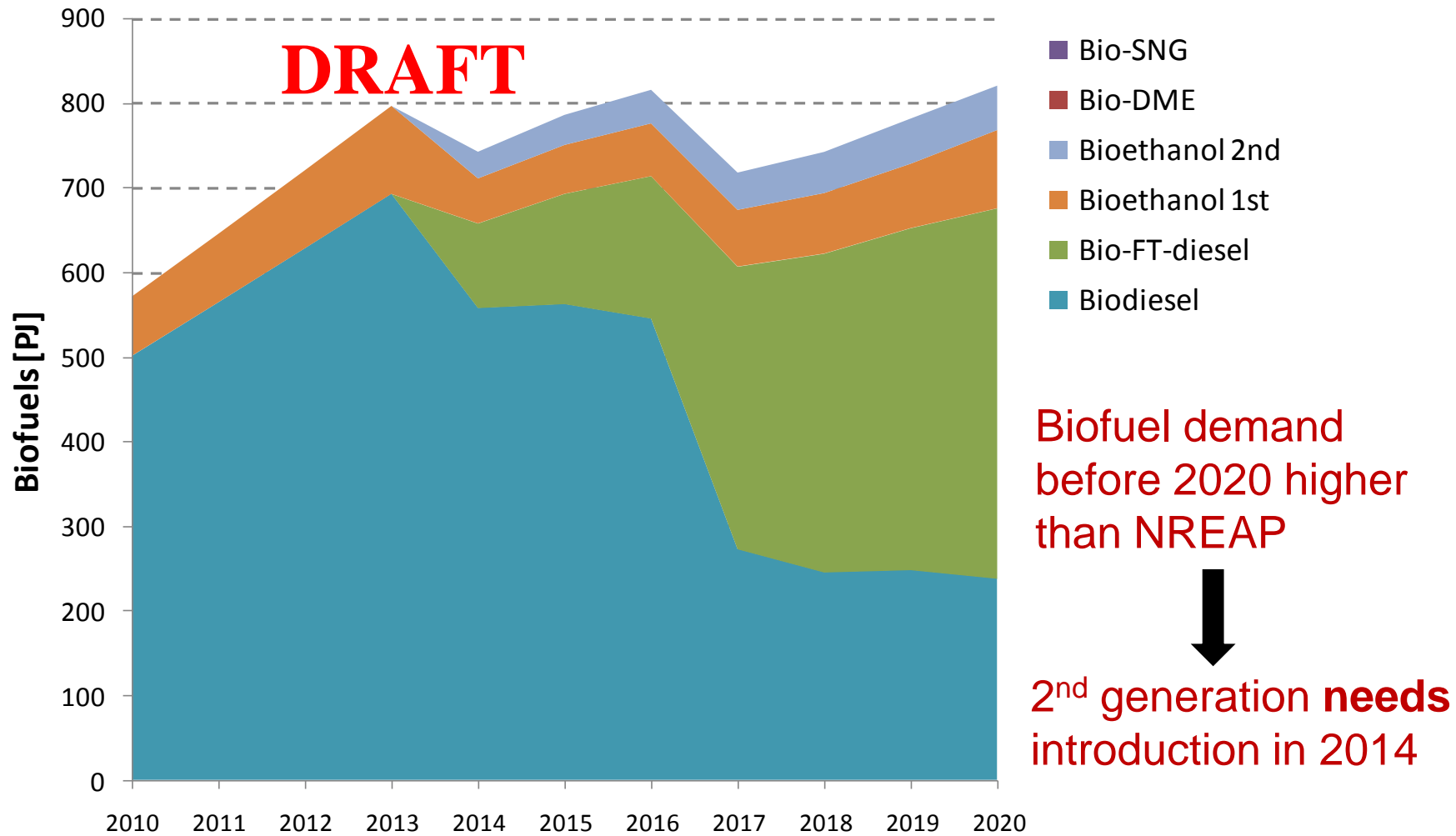
Results – RES-E technologies



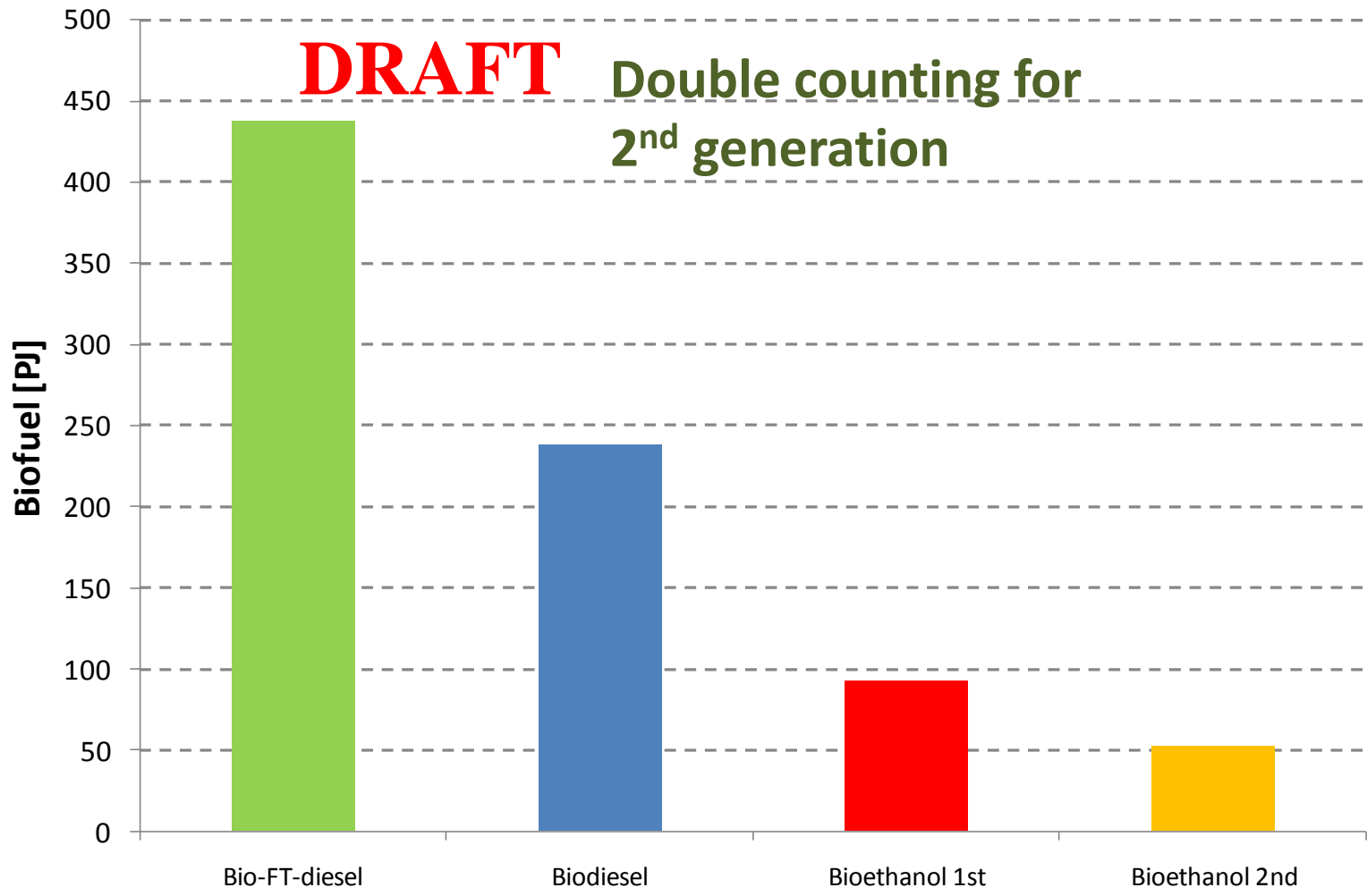
Results – RES-H technologies



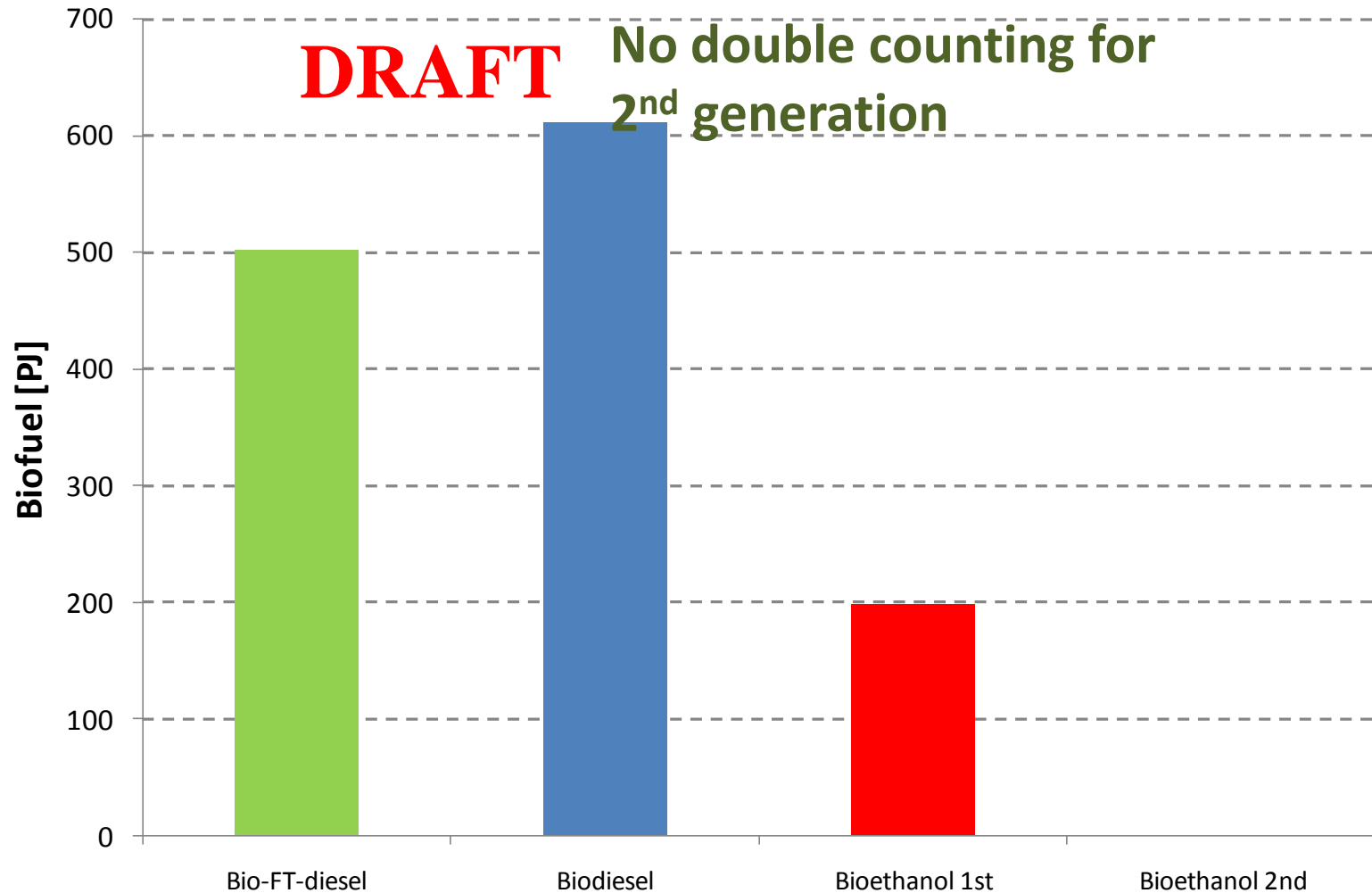
Results – Biofuels



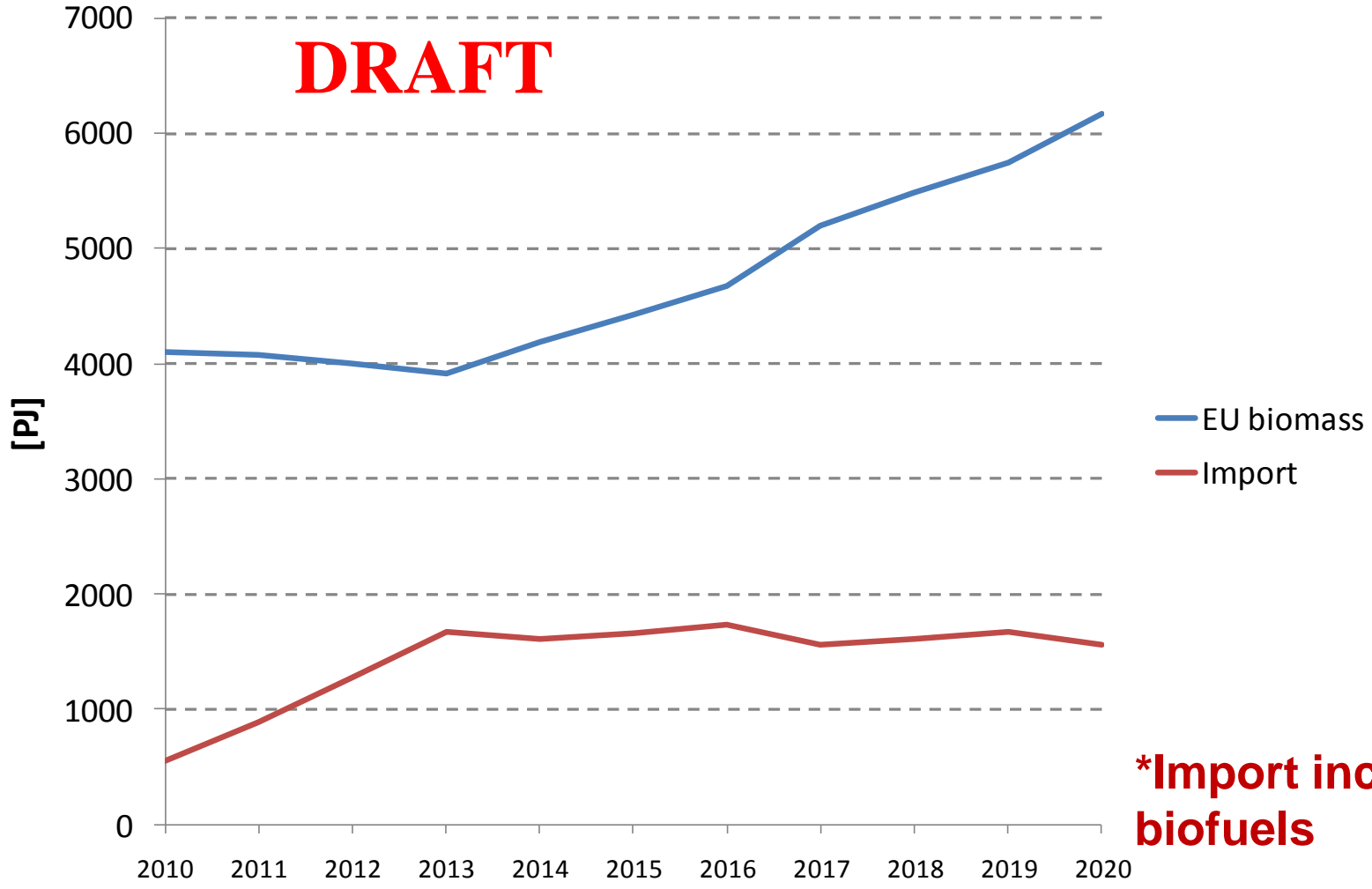
Results – Biofuels in 2020



Results – Biofuels in 2020



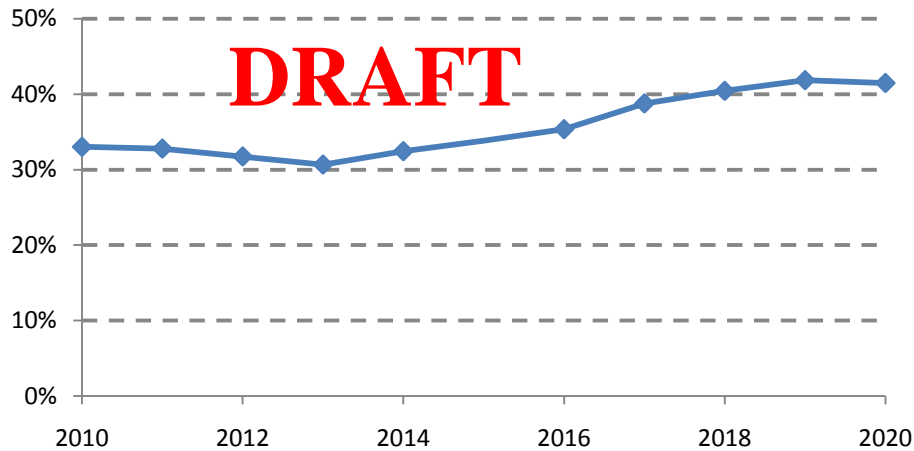
Results – Feedstock use domestic vs non-EU Import



***Import including biofuels**

Results – Domestic Feedstocks

Fraction EU potential used



Unexploited:

- Roundwood
- Manure
- Paper cardboard
- Perennials – grassy crops
- Straw

Conclusions

- **Preliminary** results for Reference scenario
- Critical look at some biomass prices needed!
- Large unexploited domestic potential
- Commercialization stage of 2nd generation requires careful analysis
- Double counting of 2nd generation biofuels has a big impact
- Static results. Interaction with other RES options in progress

Questions?