

Cascading use of wood in Germany: A status report and proposals for reform

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Starting point: Closing of Material Cycles within the Bioeconomy

- Only a bioeconomy which pursues sustainability goals, may contribute to solve the big ecologic and economic challenges of the future
- Political objective is the closing of material cycles by the recovery of residues and cascading use
- In this way, resource productivity increases



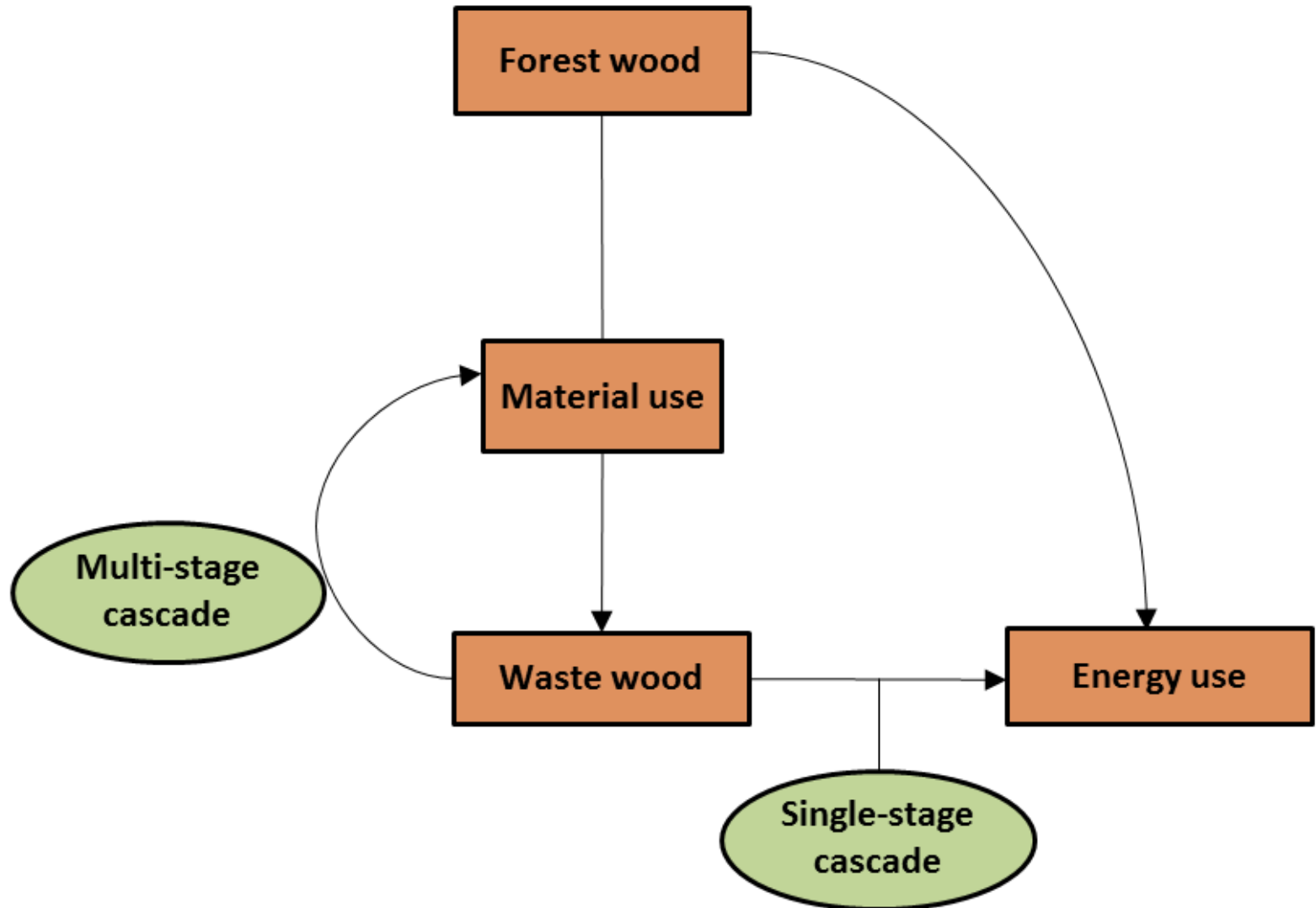
Hagemann, N., Gawel, E., Purkus, A., Pannicke, N., Hauck, J., Köck, W. und Ludwig, G. (2016): Possible futures towards a wood-based bioeconomy: A scenario analysis for Germany. Brochure.

Cascading Use - Definition

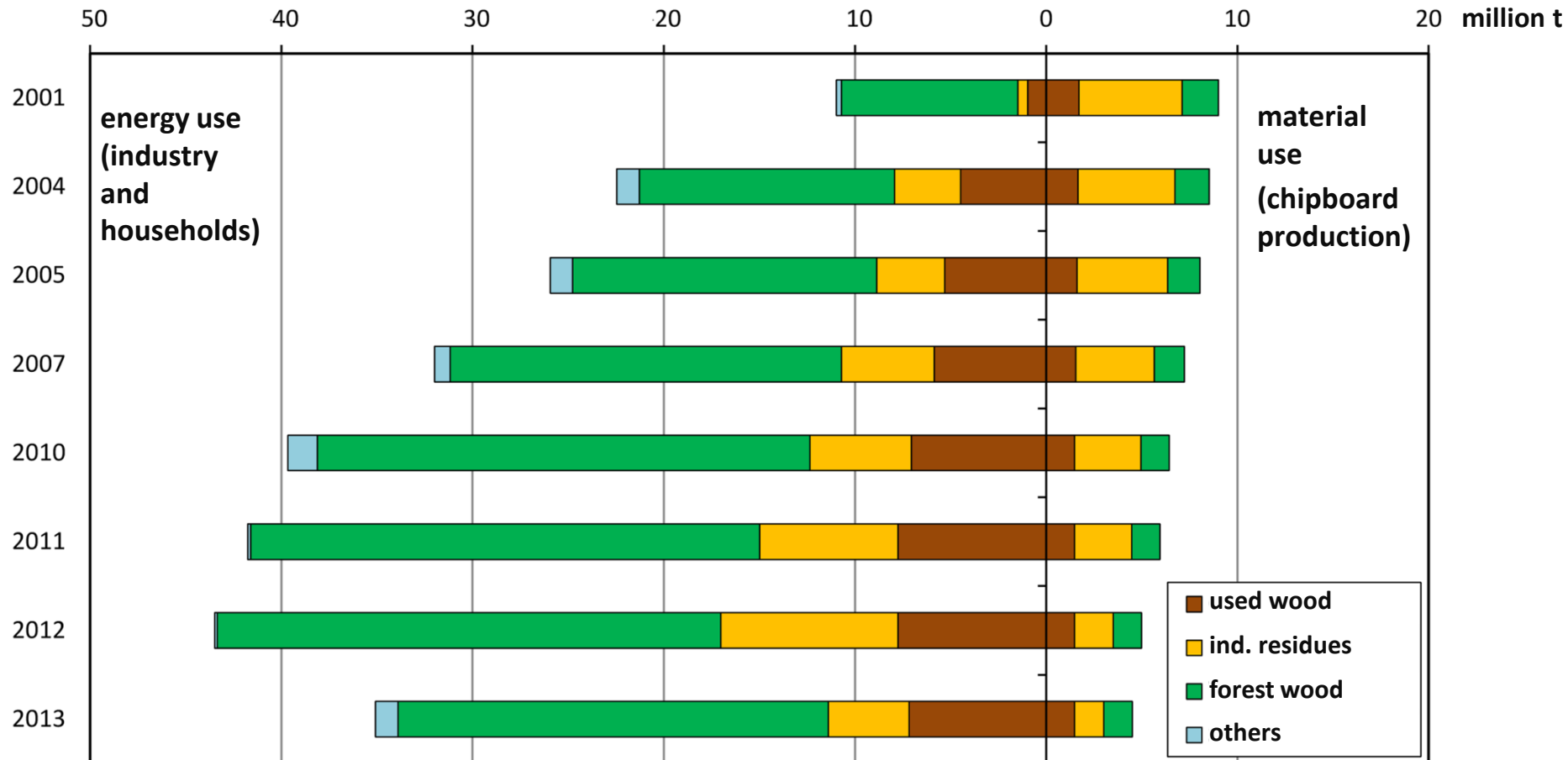
- Cascading use of biomass takes place when it is processed into a bio-based final product and this final product is utilised at least once more either for material use or energy

(Carus et al. 2014)

The Wood Cascade

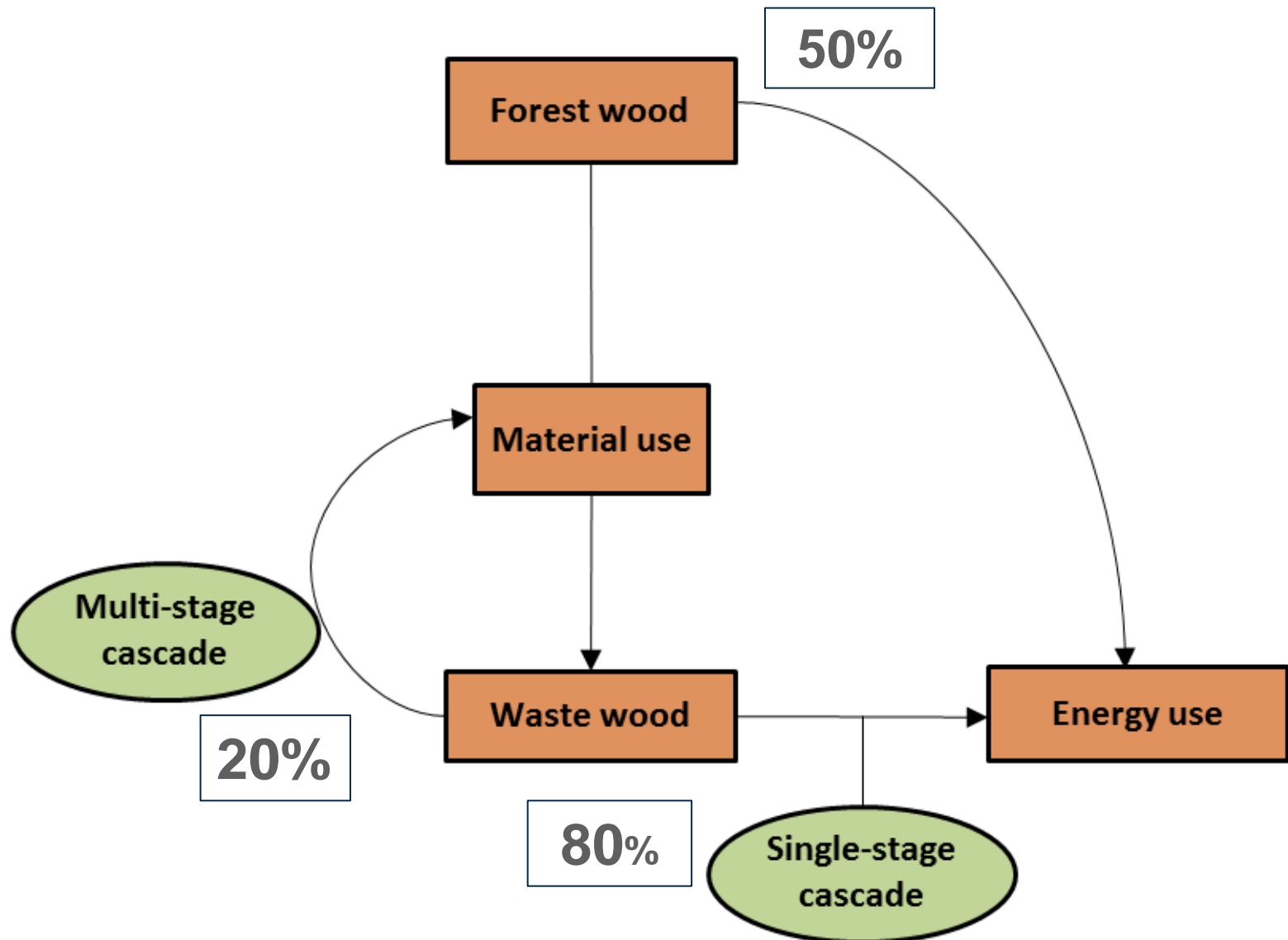


Material and Energy Use of Forest Wood and Waste Wood in Germany 2001-2013

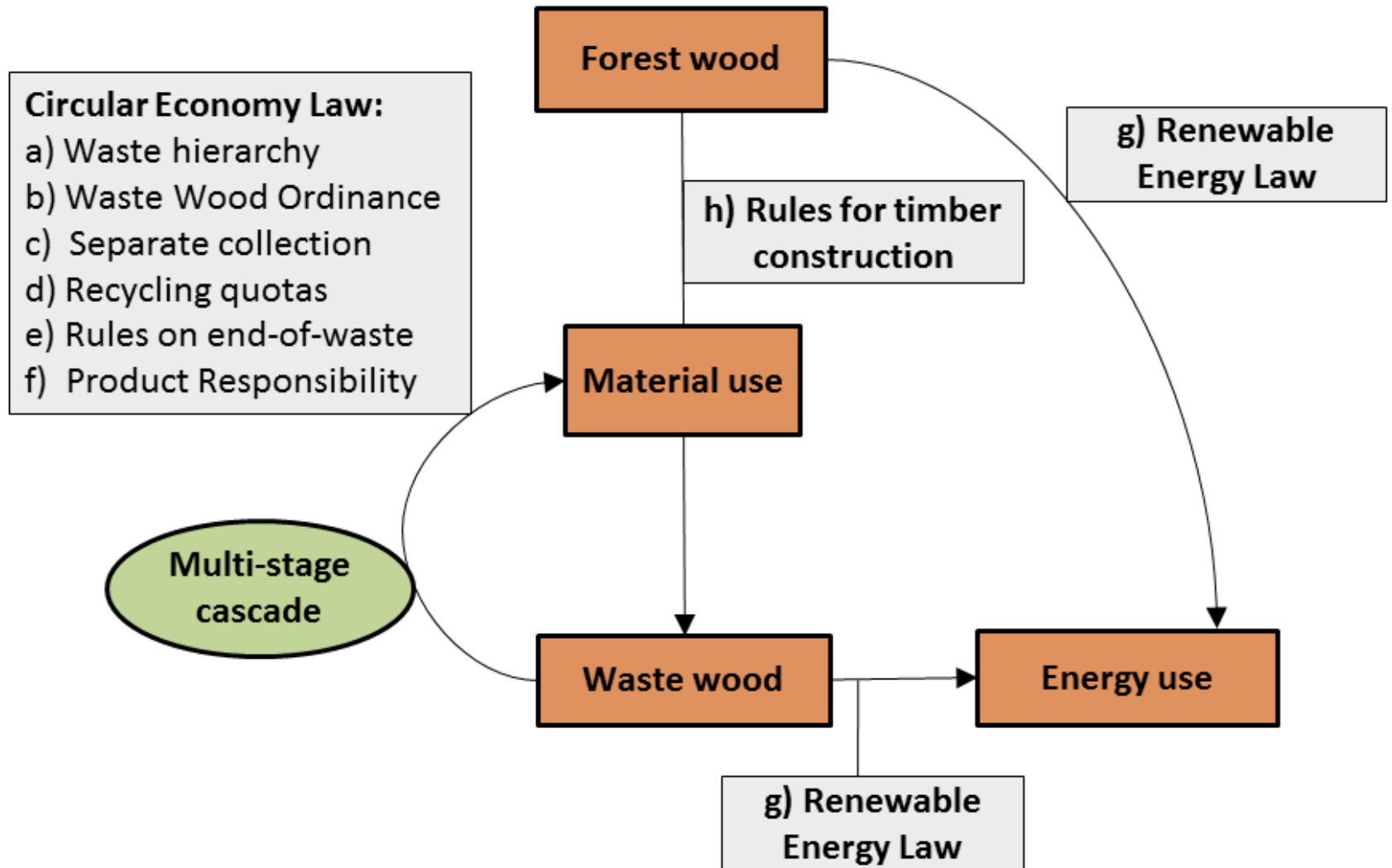


Base data: Weimar/Mantau 2006; Mantau/Sörgel/Weimar 2007; Mantau 2012; Weimar/Döring/Mantau 2012; Mantau 2013; Weimar 2015.

The Wood Cascade



Governance of Cascading Use of Wood



a) Waste Hierarchy according to Article 4 WFD

1. Prevention

- Requirements for **choice and optimization** are **complex**

2. Preparing for Re-Use

- German Circular Economy Act opens up **possibility for ordinances** which concretise the waste hierarchy for specific material flows

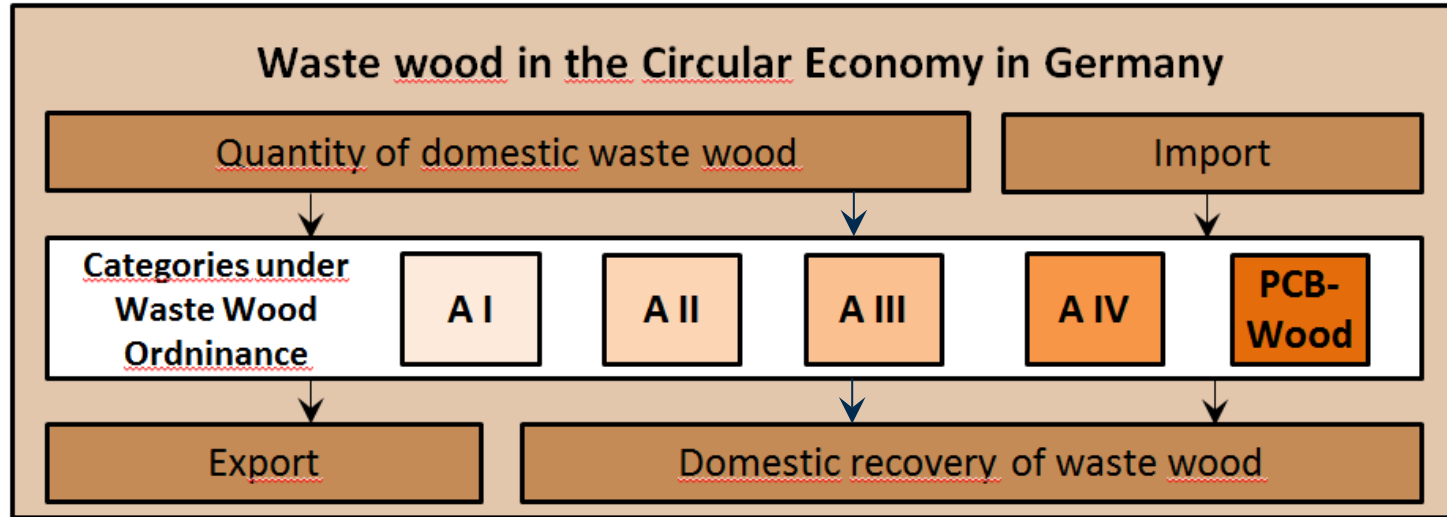
3. Recycling

4. Recovery

5. Disposal

- German government did **not yet** make use of this enabling clause

b) Waste Wood Ordinance 2002 (AltholzV)



- **Material and energy recovery equally** recognized as high-value recovery
- **Adjustments** in the classification system are **necessary**

c) Separate Collection and d) Recycling Quotas

- **Separate collection** demanded by EU-WFD for at least: paper, metal, plastic, glass and bio-waste
- **Recycling quotas** of 50% for paper, metal, plastic, glass
- 70% for construction and demolition waste by 2020
- **New Ordinance on Commercial Waste:**
 - Separate collection also for waste wood
 - Recycling quota in § 6 par. 5 (30%)

e) Rules on End-of-Waste

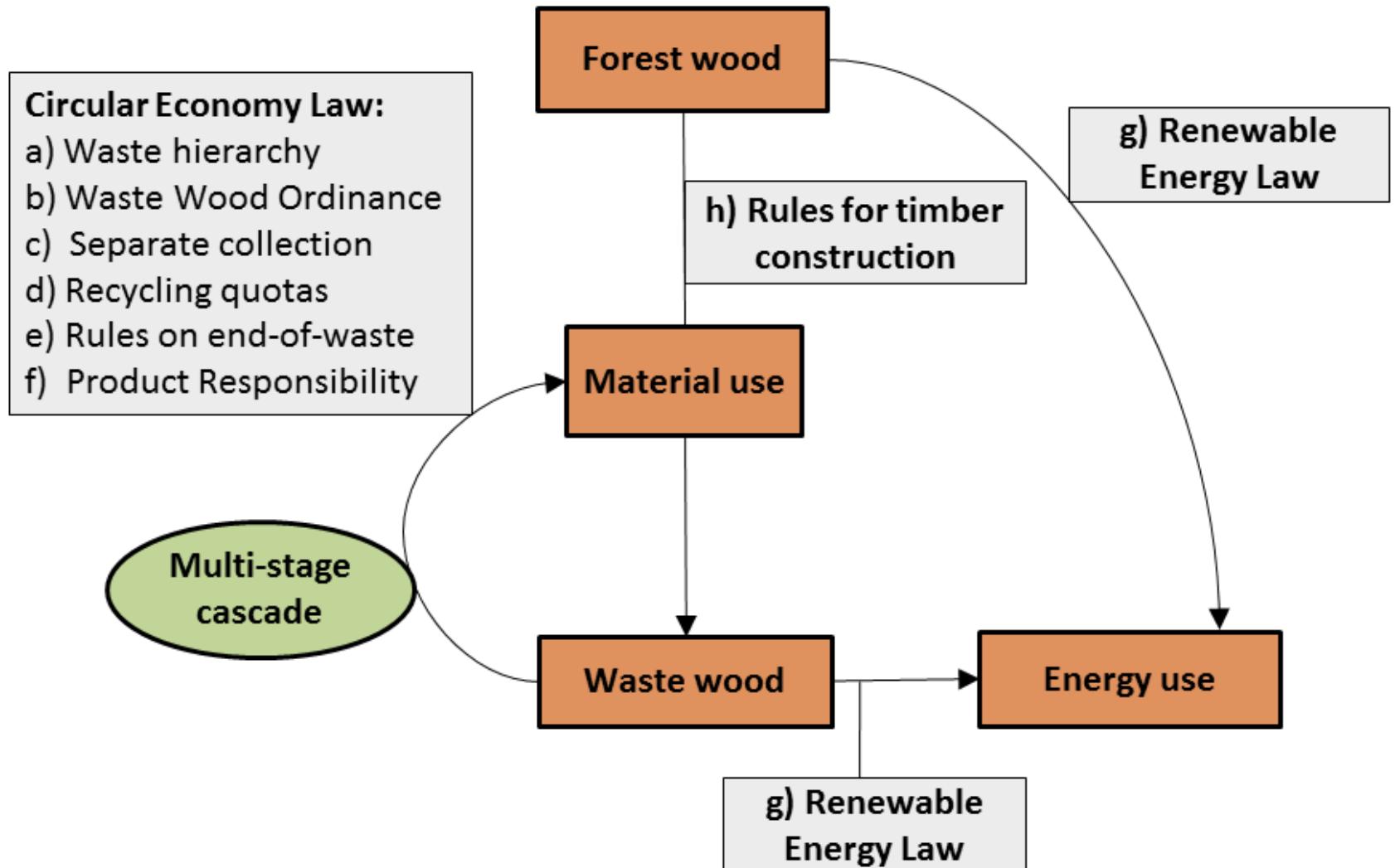
- Identification of end-of-waste is **important** for **market entry** of products
- Any **declaration** of any authority is **not required**
- This may lead to **legal uncertainties**
- **Amendment** of the law should be considered

Ludwig, G., Gawel, E. und Pannicke, N. (2015): Ende der Abfalleigenschaft – am Beispiel von Brennstoffen aus der hydrothermalen Karbonisierung. Ein Beitrag zur Ressourceneffizienz in der Bioökonomie. In: Zeitschrift für das Recht der Abfallwirtschaft (AbfallR) 6:287-295.

f) Product Responsibility

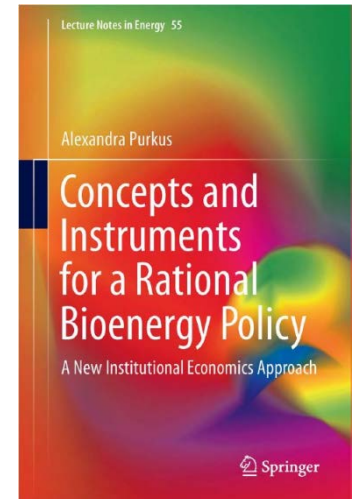
- Pre-condition for the repeated material use is a product design that supports **separability** and **low pollution loads**
- **Take-back-obligations** may help to secure a recyclable design of wood products
- **Exist in France for furniture**, financed by a declared charge on the product price

Governance of Cascading Use of Wood

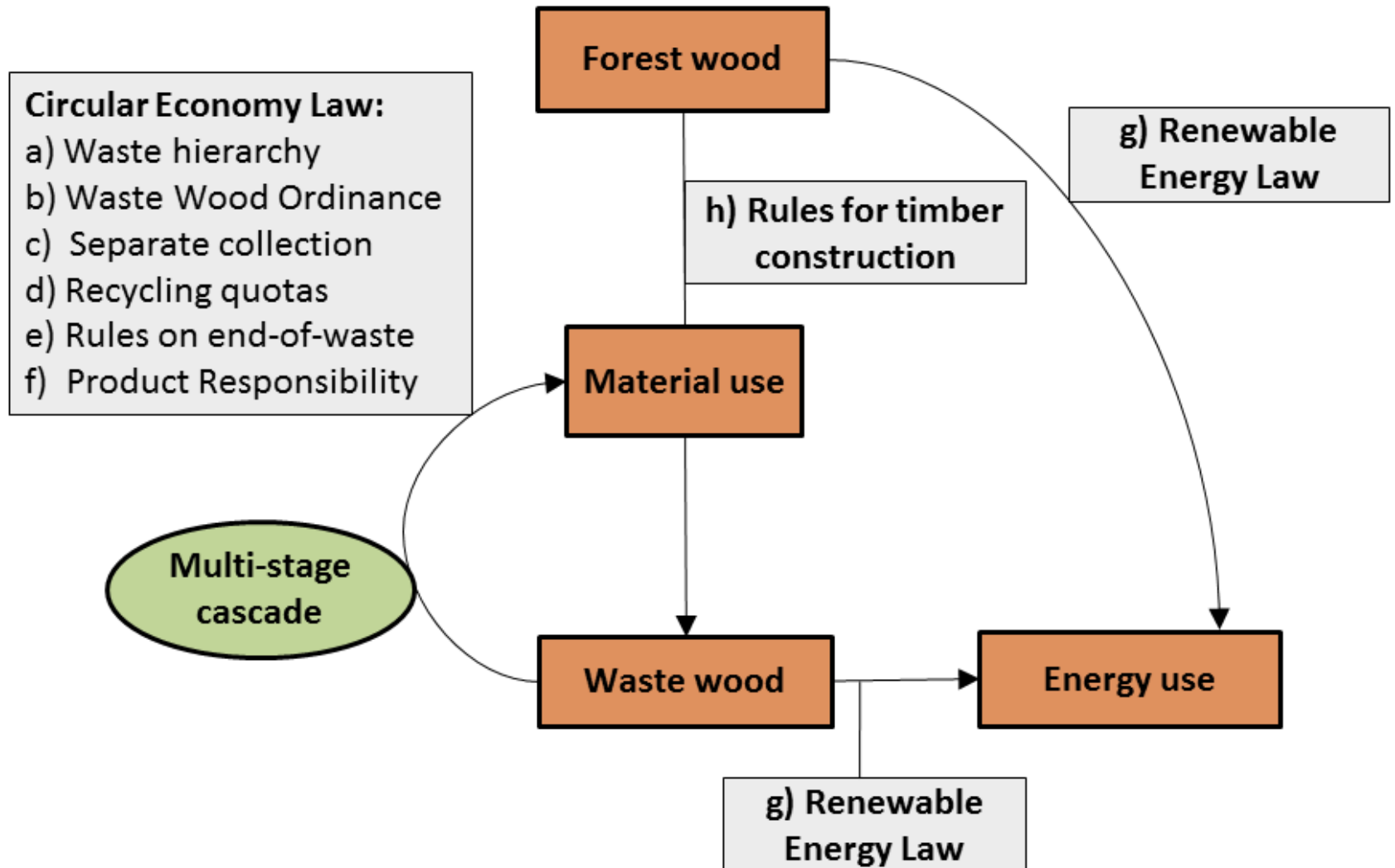


g) Promotion of Bioenergy

- **Support of energy use of wood by**
 - Renewable Energy Sources Act (EEG)
 - Renewable Energies Heat Act (EEWärmeG)
 - **Market support programme** incentivising wood based firing in households
- **Reduced value added tax (VAT) rate of 7% instead of 19% for wood pellets and firewood**
- **Decrease of support within new EEG 2017, but still competition of material with energy uses**



Governance of Cascading Use of Wood



h) Legal Framework for Timber Construction

- **Building law:**
 - Adapt rules on stability for multi-storey buildings and on fire protection

- **Building products law:**
 - Push standardisations
 - Reward sustainable building products

- **Promote wood constructions**
 - Support programmes

Proposals for Redesigning the Legal Framework

- **Revise Waste Wood Ordinance**
 - Adjust to waste hierarchy and to technological innovations
 - Clause on end-of-waste
- **Further reduce competition with energy uses** - esp. for wood-fired power stations
- **Promote timber construction**
 - Adapt building law
 - Push standardisation
 - Market support programme



Ludwig, G., Gawel, E., Pannicke, N. (2016): Kreislaufwirtschaft im Bereich Holz – Rechtliche Bestandsaufnahme und Reformvorschläge für Kaskadennutzungen, Zeitschrift für das Recht der Abfallwirtschaft (AbfallR), S. 170-178

**Thank you for your
kind attention!**



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