Hantera biobränslenas hållbarhet - idag och i framtiden

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Värme- och kraftkonferensen Hållbara energisystem 10 nov, 2010, Näringslivets hus

Hantera biobränslenas hållbarhet

Innehåll

- Rollen för biobränslen i Europa och framtida marknader
- Hållbarhetsaspekter att hantera
- Rationell hantering av hållbarhet – idag och i framtiden

Bilderna är på engelska,

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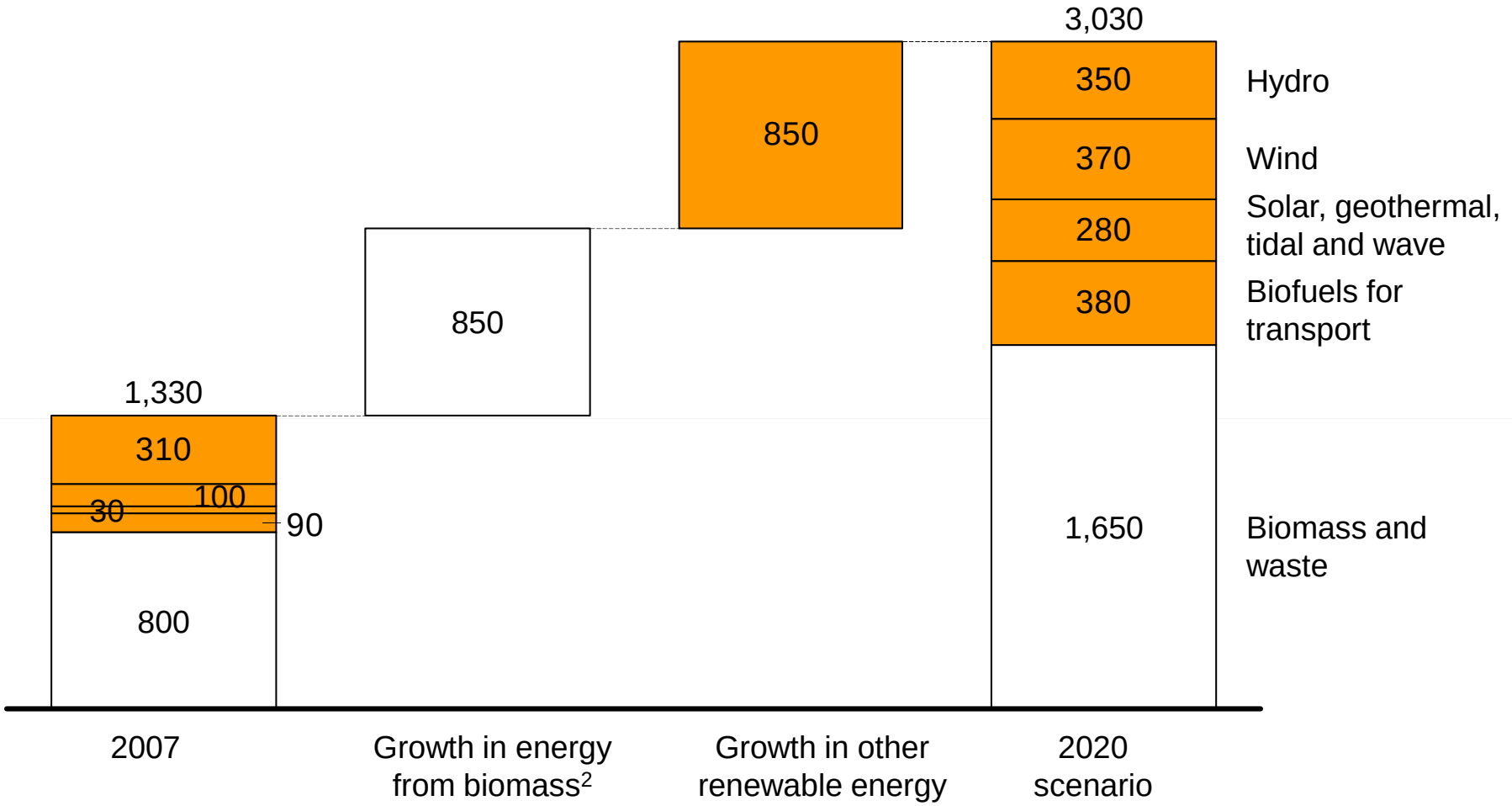
Role of biomass in meeting Europe's renewable energy targets – European Commission scenario

EU-27 final energy consumption[1]; TWh



1 Average of the "EC proposal with RES trading" and the "EC proposal with CDM and RES trading" scenarios
2 Varies between 839 and 886 TWh depending on scenario

SOURCE: Capros et al (2008):*Model-based Analysis of the 2008 EU Policy Package on Climate Change and Renewables*; IEA

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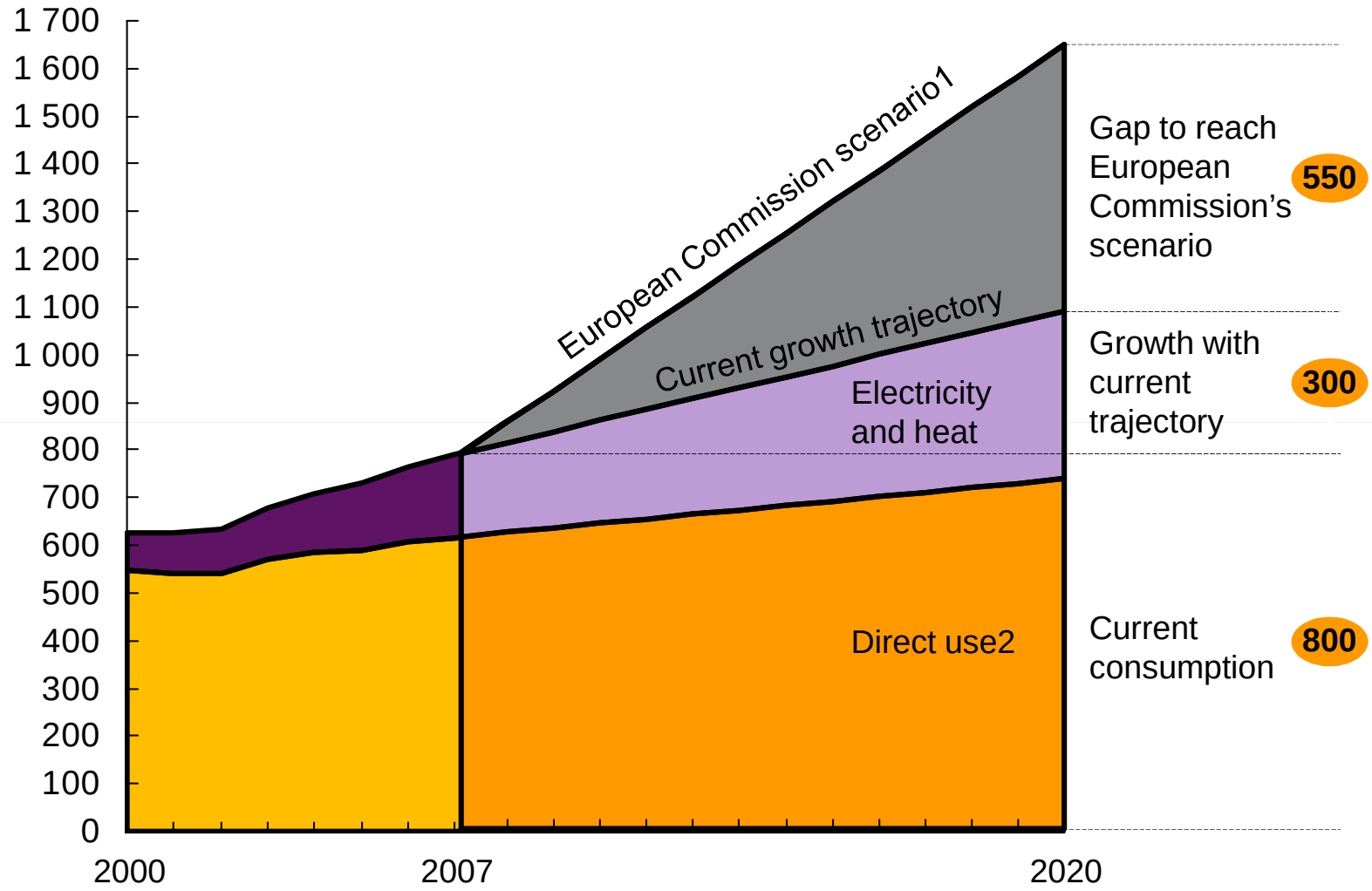
Current biomass energy growth compared to the growth required to reach the European Commission scenario

Final energy consumption from biomass (excluding biofuels); TWh



1 Average of the "EC proposal with RES trading" and the "EC proposal with CDM and RES trading" scenarios
2 Consumption in private households or industries producing heat or electricity for their own use, i.e. not for sales

SOURCE: Capros et al (2008): *Model-based Analysis of the 2008 EU Policy Package on Climate Change and Renewables*; IEA

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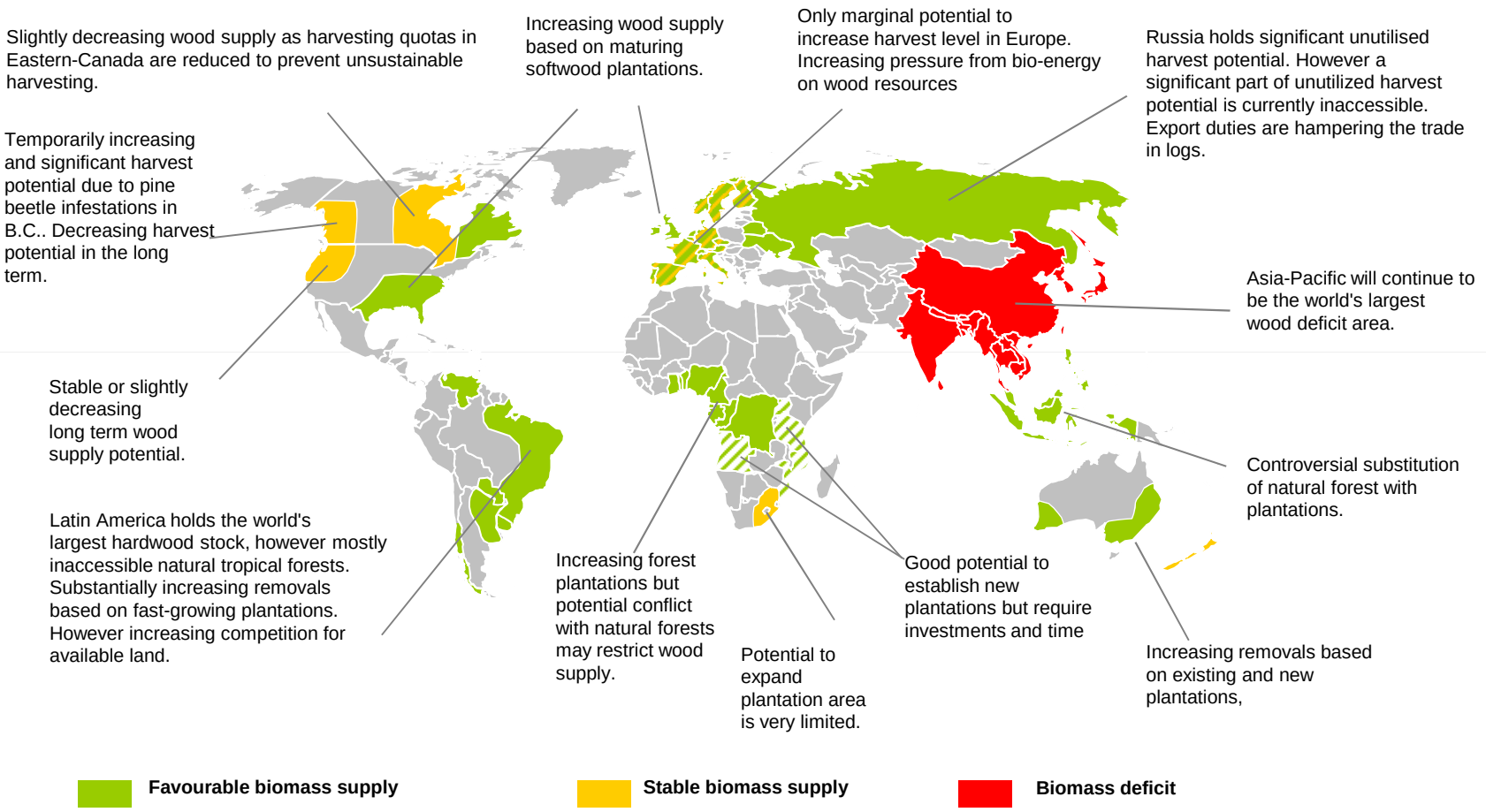
Global view on future biomass harvesting potential



Source: Pöyru

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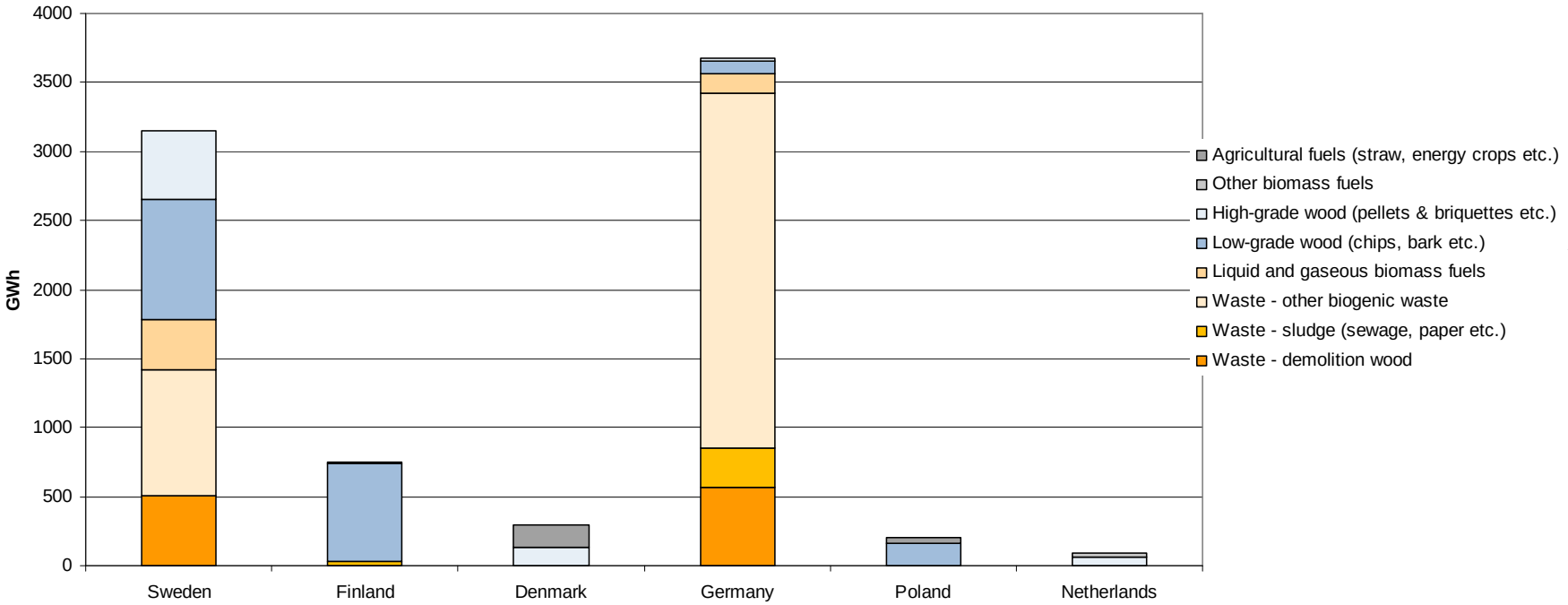
Vattenfall biomass use 2009



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Sustainable supply of biomass to Europe

Global sourcing **Local sourcing**

- → In order to meet Europe's need for biomass, global and local sourcing of different biomass fuels is needed
- → A global market is developing and biomass is becoming an internationally traded fuel
- → Sourcing from countries with less solid legal framework regarding sustainability issues makes it necessary to manage sustainability aspects of biomass

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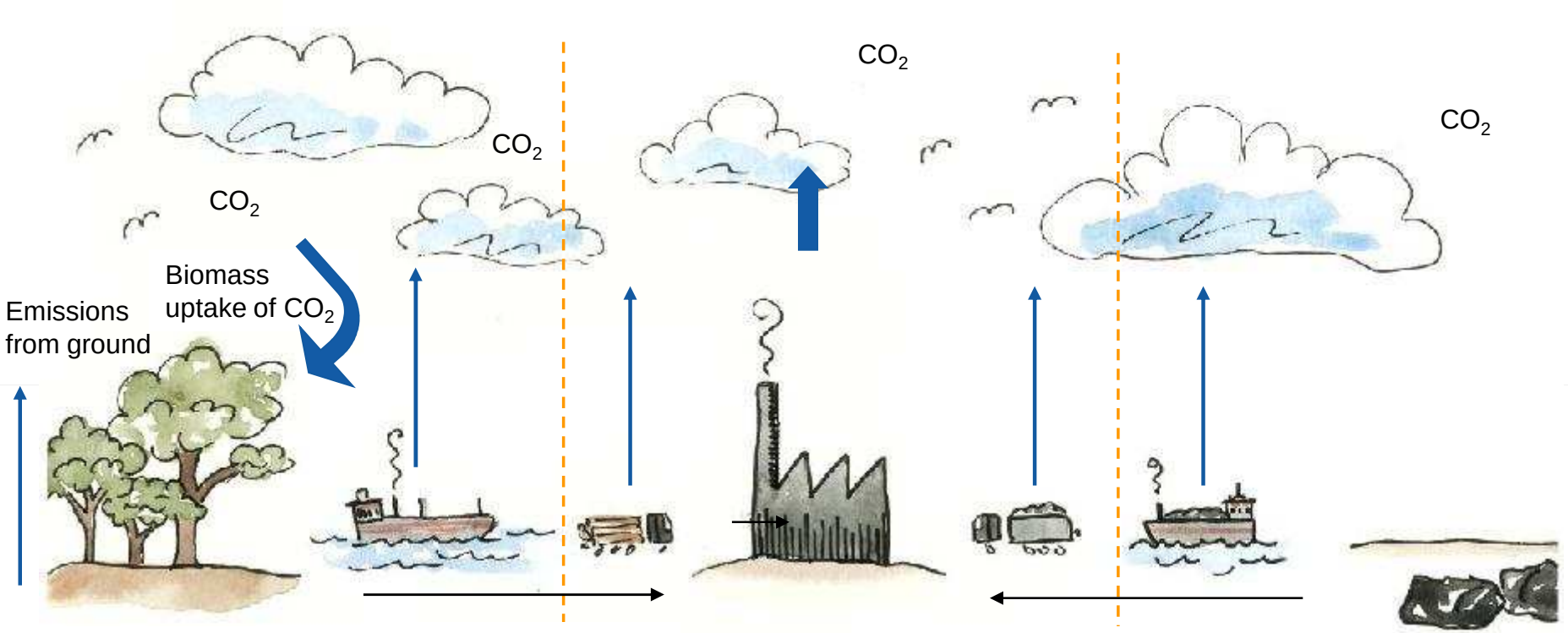
CO_2 balance – biomass vs. coal



”Real emissions” from plants are the same but biomass counts as zero due to assumed uptake equal to emissions

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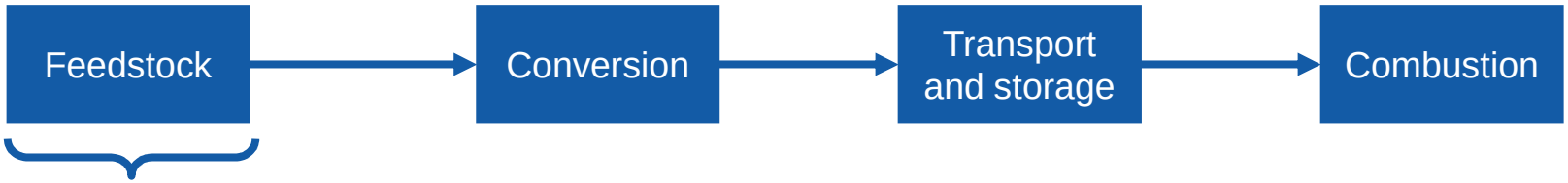
EU framework: biomass specific criteria*



Sustainable production:
- Protect high biodiversity values
- Ensure carbon stock (no land-use change if high carbon stock)

→ NO-GO areas for biomass production

GHG balance
- LCA analysis of GHG emissions across the fuel chain
- GHG savings calculated compared to fossil fuel

→ Requirements set on minimum GHG savings

Vattenfall supports the development of binding EU criteria for solid biomass that focus on the most critical sustainability aspects of increased biomass use. (Lack of EU criteria lead to different national criteria, which cause hinder to trade and limit biomass development.)

*from the RED criteria for liquid biofuels and the EC report on solid biomass sustainability criteria

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Biomass sustainability criteria

General supplier criteria for all fuel procurement + **Biomass specific criteria** = **Biomass sustainability aspects to cover**

Biomass specific criteria are needed to ensure that biomass:

- Leads to reduced climate impact compared to fossil fuel
- Does not cause a problem shift, i.e. lead to other unacceptable environmental or social impacts

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Aspects to consider

- Outtake less than growth
- System boundaries
- Rotation time

- Sustainability criteria
  - Assessment criteria
  - Binding criteria

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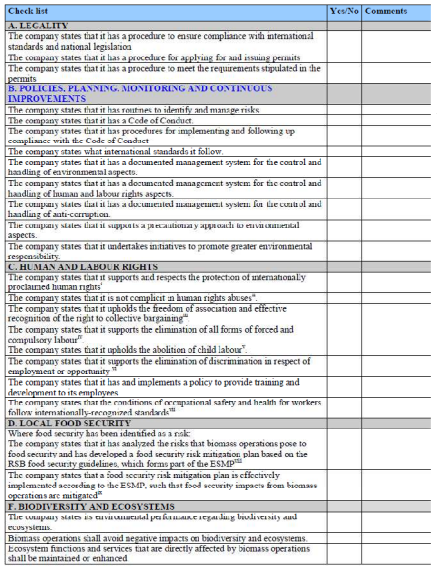
Areas to consider in sustainability assessment

- General
  - Legality
  - Policies, planning, monitoring and continuous improvement
  - Supplier controls

- Environmental
  - Green house gas (savings and carbon stock)
  - Biodiversity and ecosystem
  - Soil, water, air
  - Resource efficiency (e.g. water and waste management)
  -

- Social
  - Human and Labour rights
  - Food security
  - Land rights and land use rights
  - Anti-corruption



Check list	Yes/No	Comments
A. LEGALITY		
The company states that it has a procedure to ensure compliance with international standards and national legislation		
The company states that it has a procedure for applying for and issuing permits		
The company states that it has a procedure to meet the requirements stipulated in the permits		
B. POLICIES, PLANNING, MONITORING AND CONTINUOUS IMPROVEMENTS		
The company states that it has routines to identify and manage risks.		
The company states that it has a Code of Conduct.		
The company states that it has procedures for implementing and following up compliance with the Code of Conduct		
The company states what international standards it follow.		
The company states that it has a documented management system for the control and handling of environmental aspects.		
The company states that it has a documented management system for the control and handling of human and labour rights aspects.		
The company states that it has a documented management system for the control and handling of anti-corruption.		
The company states that it supports a precautionary approach to environmental aspects.		
The company states that it undertakes initiatives to promote greater environmental responsibility.		
C. HUMAN AND LABOUR RIGHTS		
The company states that it supports and respects the protection of internationally proclaimed human rights[7]		
The company states that it is not complicit in human rights abuses[8].		
The company states that it upholds the freedom of association and effective recognition of the right to collective bargaining[9].		
The company states that it supports the elimination of all forms of forced and compulsory labour[10].		
The company states that it upholds the abolition of child labour[11].		
The company states that it supports the elimination of discrimination in respect of employment or opportunity.[12]		
The company states that it has and implements a policy to provide training and development to its employees		
The company states that the conditions of occupational safety and health for workers follow internationally-recognized standards[13]		
D. LOCAL FOOD SECURITY		
Where food security has been identified as a risk: The company states that it has analyzed the risks that biomass operations pose to food security and has developed a food security risk mitigation plan based on the RSB food security guidelines, which forms part of the ESMP[22]		
The company states that a food security risk mitigation plan is effectively implemented according to the ESMP, such that food security impacts from biomass operations are mitigated[23]		
E. BIODIVERSITY AND ECOSYSTEMS		
The company states its environmental performance regarding biodiversity and ecosystems.		
Biomass operations shall avoid negative impacts on biodiversity and ecosystems.		
Ecosystem functions and services that are directly affected by biomass operations shall be maintained or enhanced		

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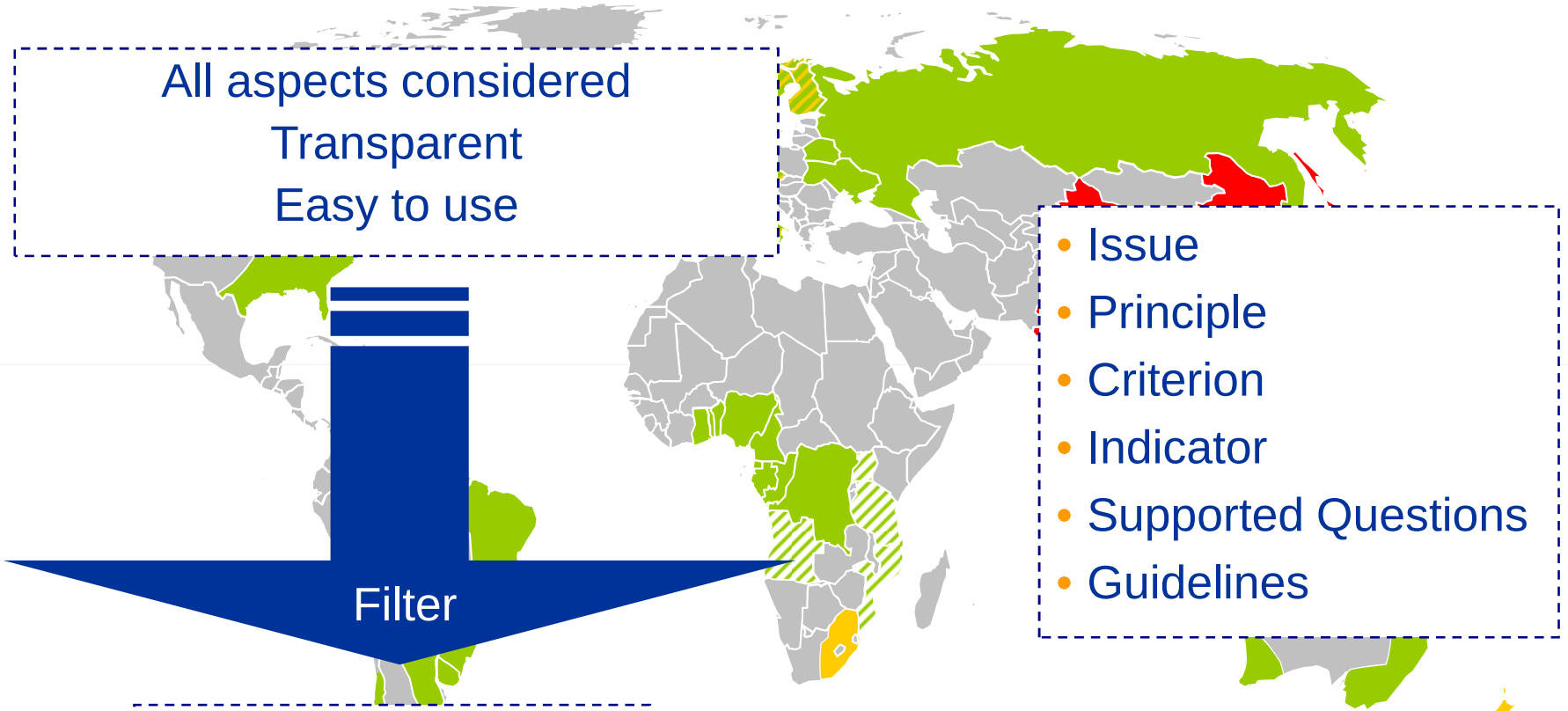
General “Biomass tool” for assessment



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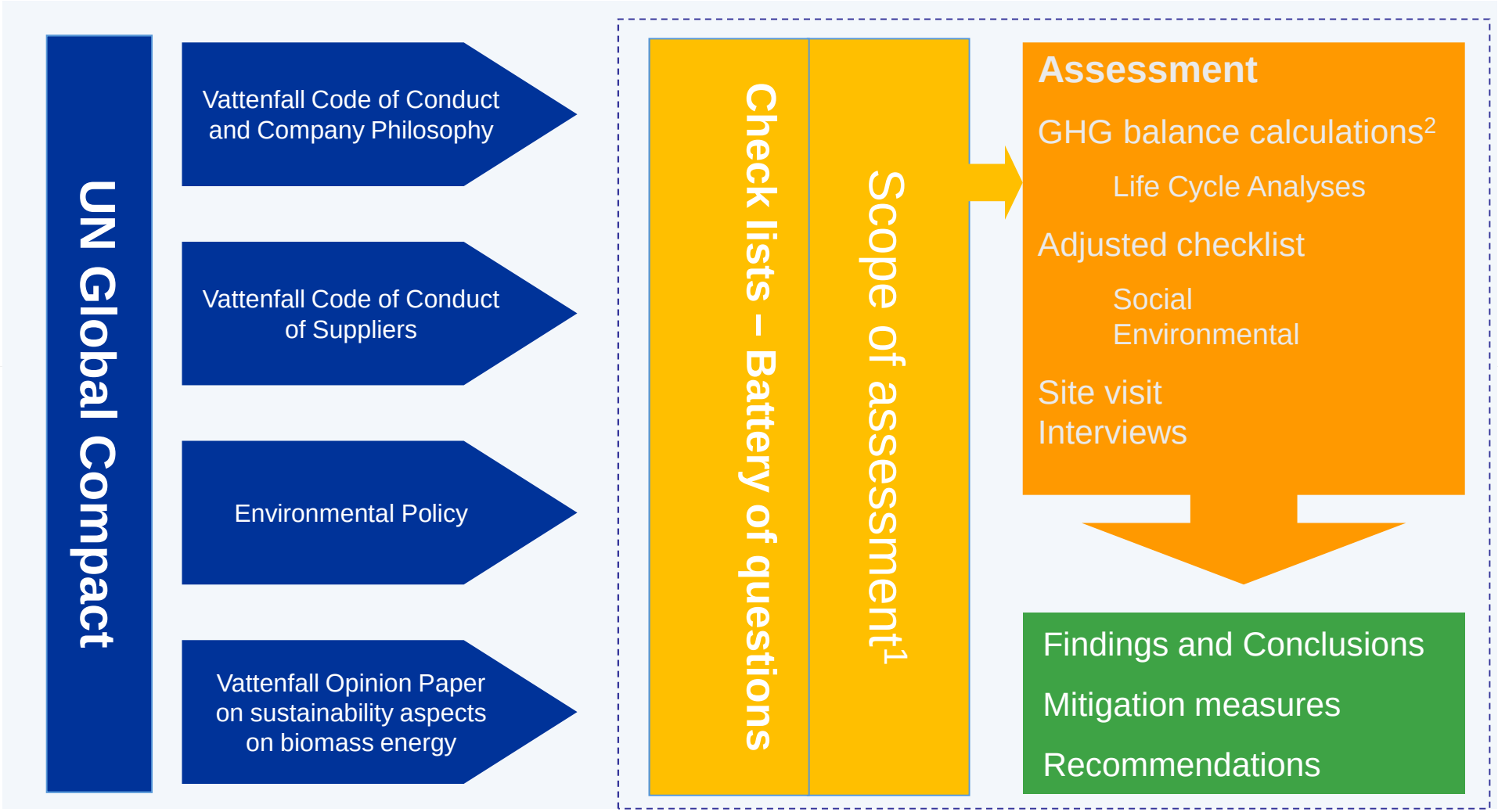
Methodology



[1] Based on e.g. country risks, can be simplified if country risks are low
[2] Calculations are made for all cases (either rough or LCA)

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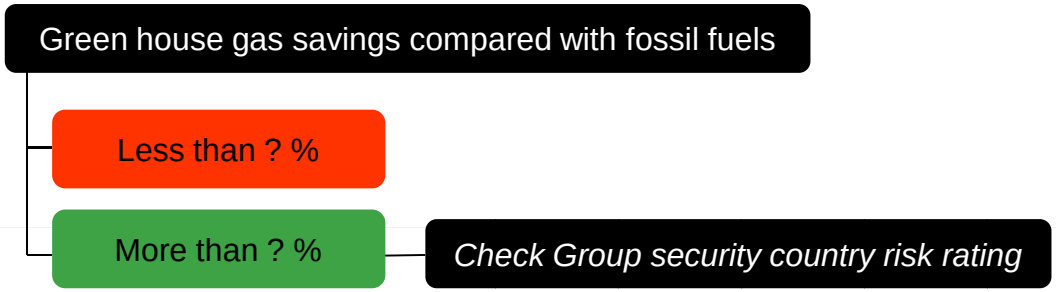
First check



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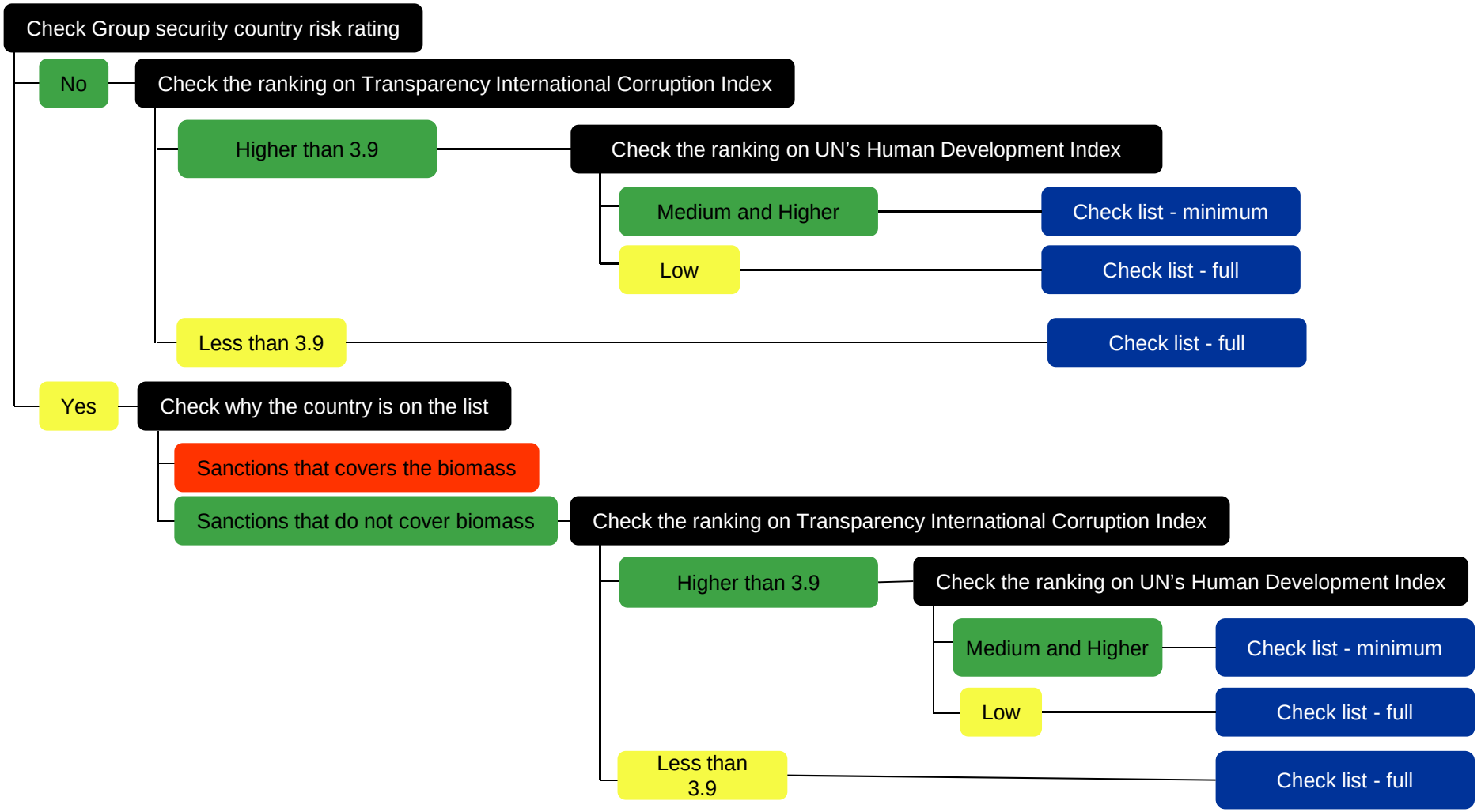
First check - continue



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Biomass sustainability in the future

- The industry must jointly act to develop rational and implementable sustainability criteria are established
- Sustainability must be ensured, but administratation kept reasonable – or the sustainable biomass fuels will not reach the market
- Certification schemes are needed!
  - ISO PC 248 – Sustainable bioenergy
    - WG 1: Cross cutting issues (including terminology and verification and audit)
    - WG 2: Greenhouse gases (calculation issues)
    - WG 3: Environmental, economic and social aspects
    - WG 4: Indirect effects
  - Swedish mirror committee SIS TK 526

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TACK!