

Product-specific Requirements (PSR) for Hydraulic Fluids

– A New Approach to User-centric Product Stewardship

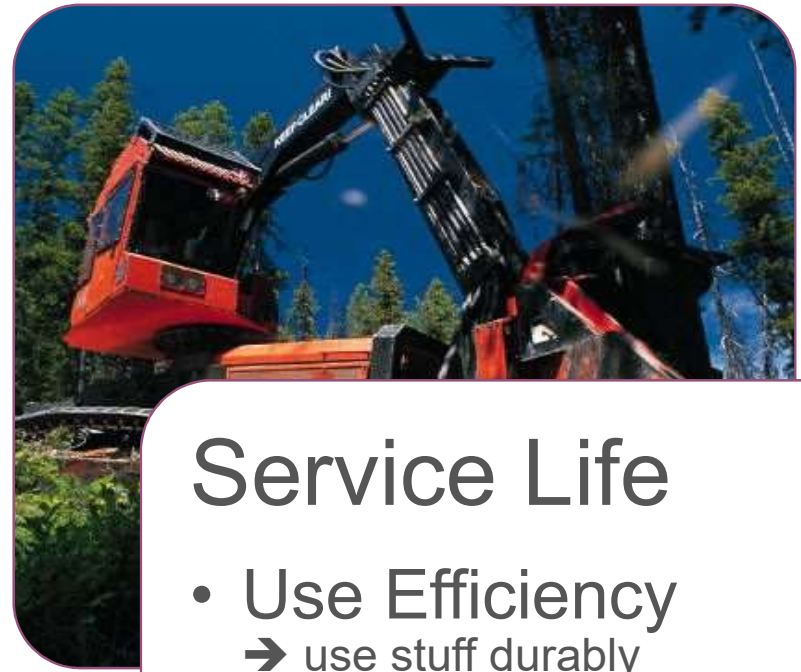
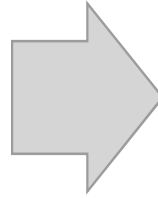
Christina Bocher
DEKRA Assurance Services
& **Dr. Ivo Mersiowsky**
Quiridium





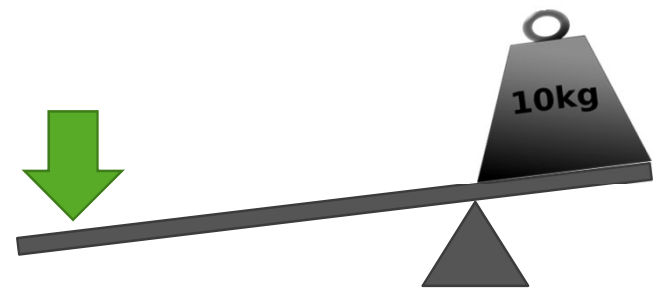
Production

- **Material Efficiency**
→ less input per product

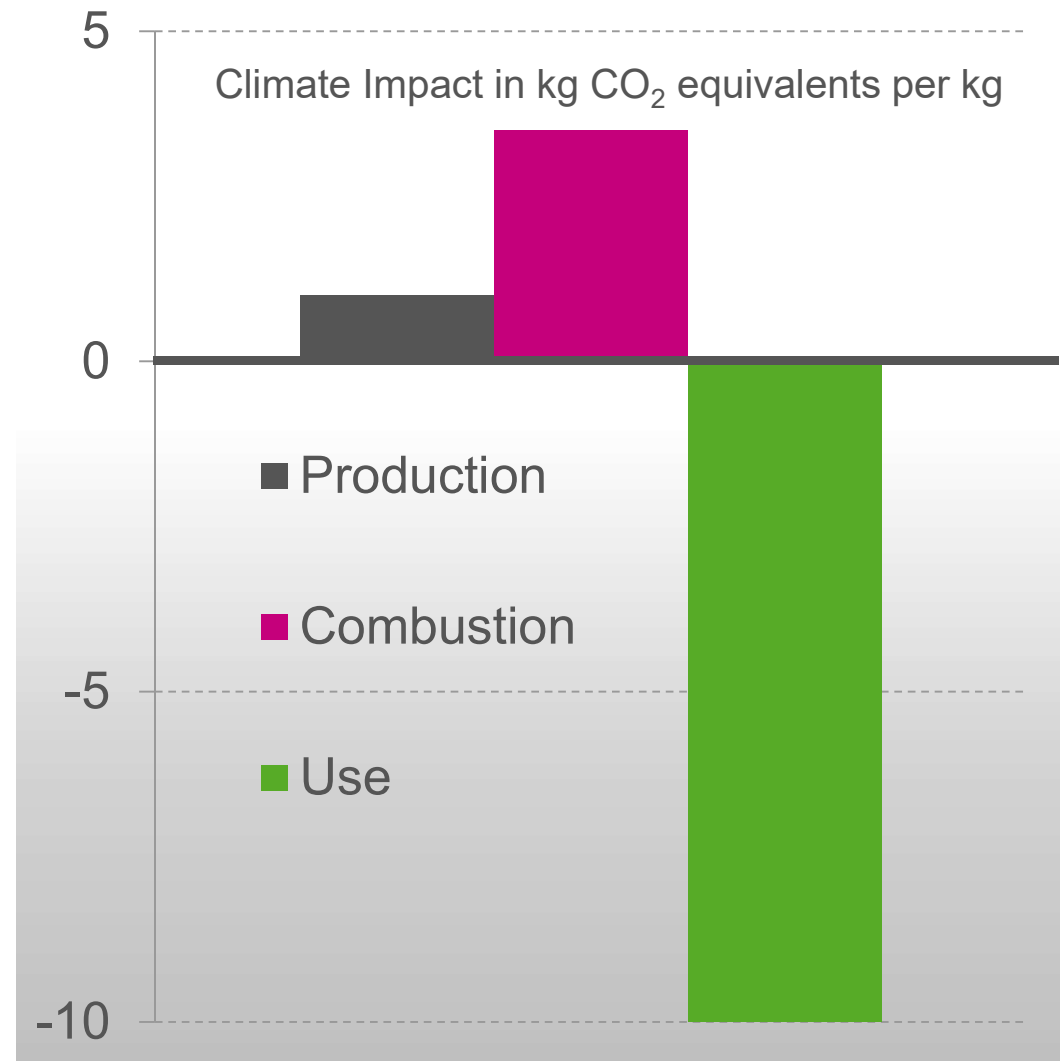


Service Life

- **Use Efficiency**
→ use stuff durably



Leverage of Lubricants



Commonly judged on the basis of HSE attributes

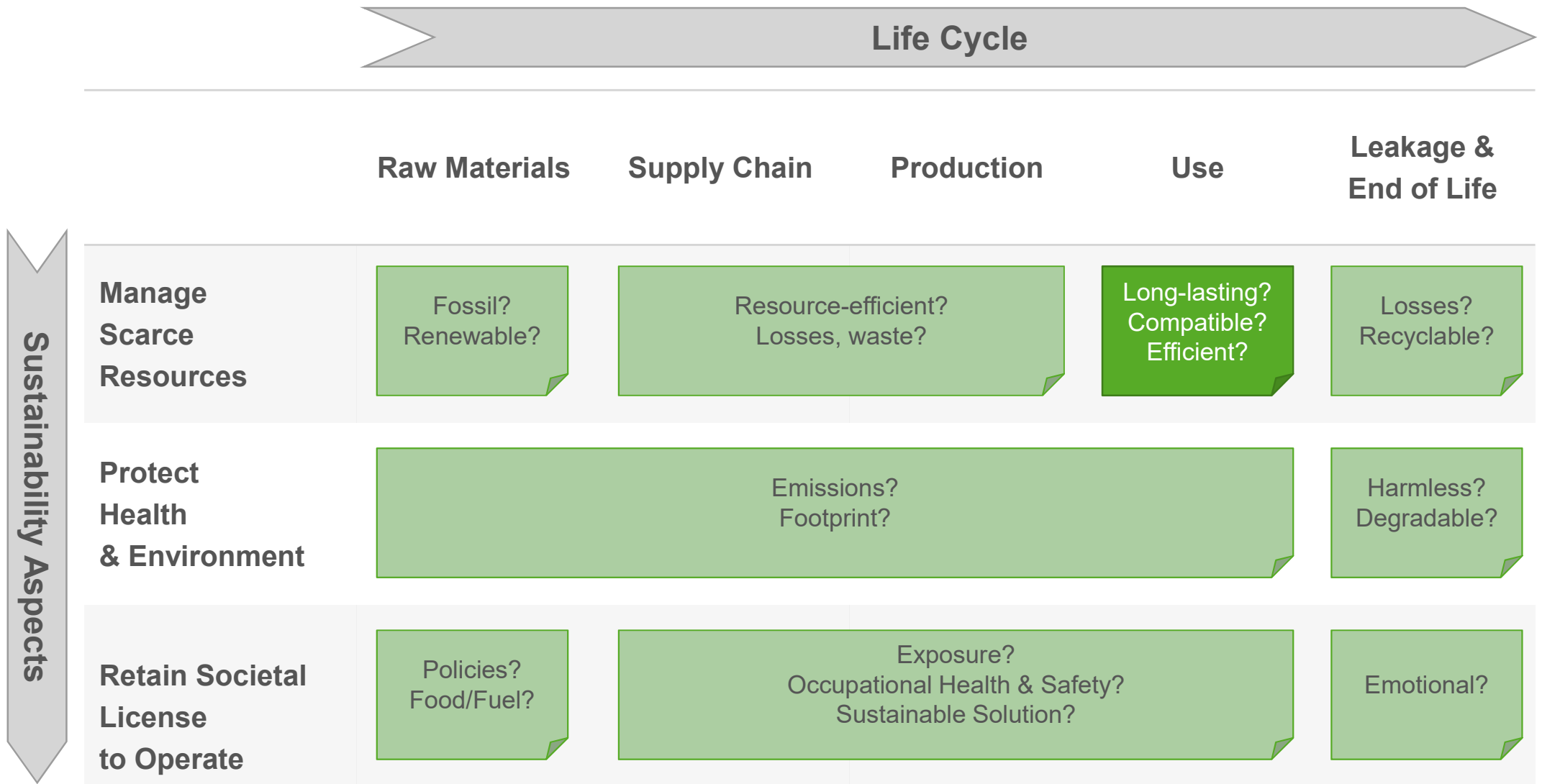
- ✓ Renewability
- ✓ Biodegradability
- ✓ Non-toxicity



BUT trade-offs if performance or lifecycle is worse;

PLUS users faced with multiple and contradictory product labels.

Qualitative Screening



Long-lasting?

- Ageing and Oxidation Stability
- Fluid Change Intervals
- TOST Test



Compatible?



- Corrosion & Compatibility
- Functioning of Tubes & Pumps
- Material and Component Tests

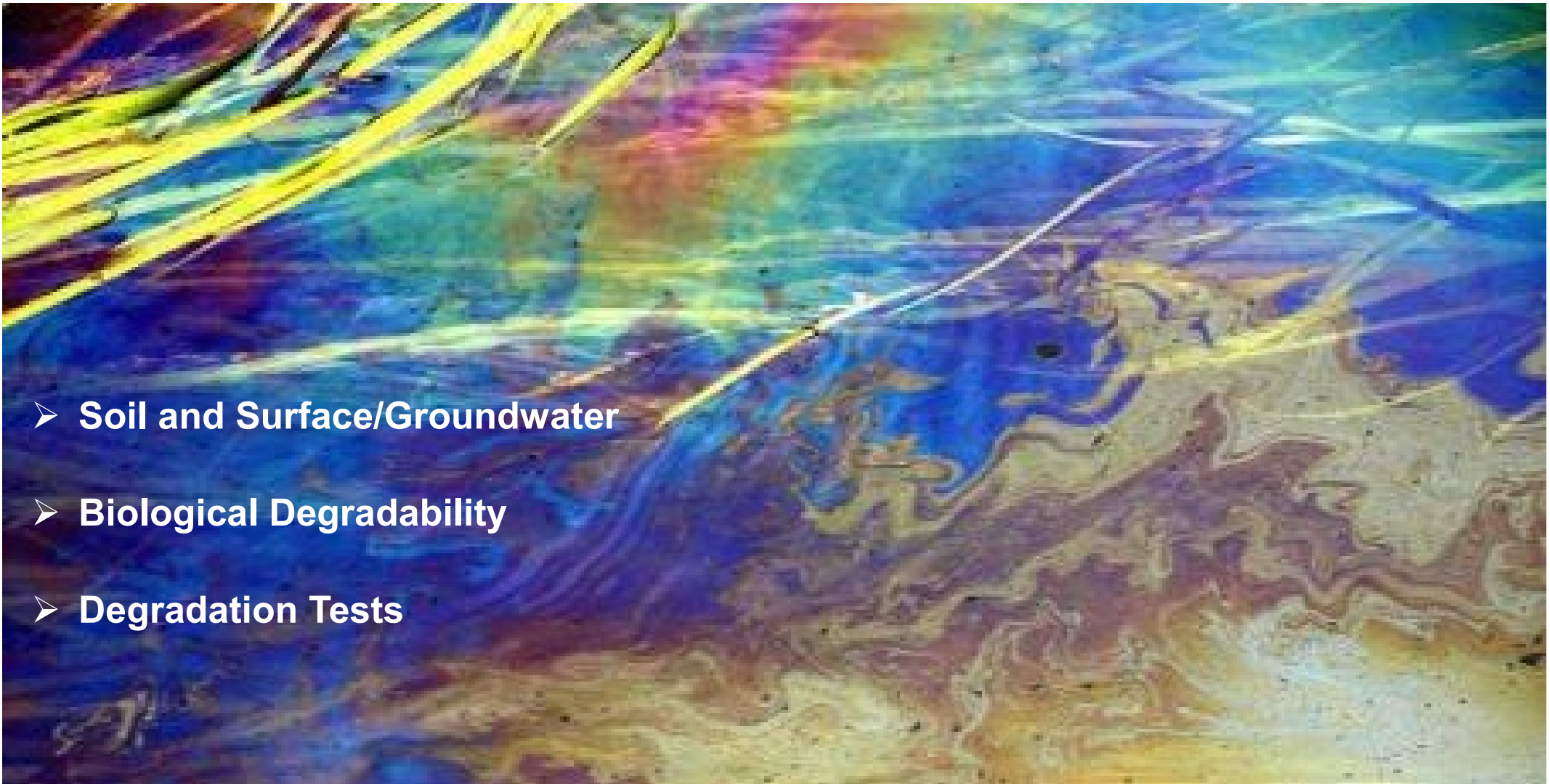
Picture 11A

Energy-efficient?

- **Lubrication Properties**
- **Fuel Savings**
- **Fleet Tests**



Degradable?

- 
- **Soil and Surface/Groundwater**
 - **Biological Degradability**
 - **Degradation Tests**

Harmless?

- Toxicity of Original/Degraded Fluid
- Plant Growth Inhibition
- Terrestrial Plant Tests (Cress)







Commit to Product Stewardship



Assess Product Risks (FMEA)



Integrate Management Systems (SHEQ)



Assess Suppliers



Train Product Users






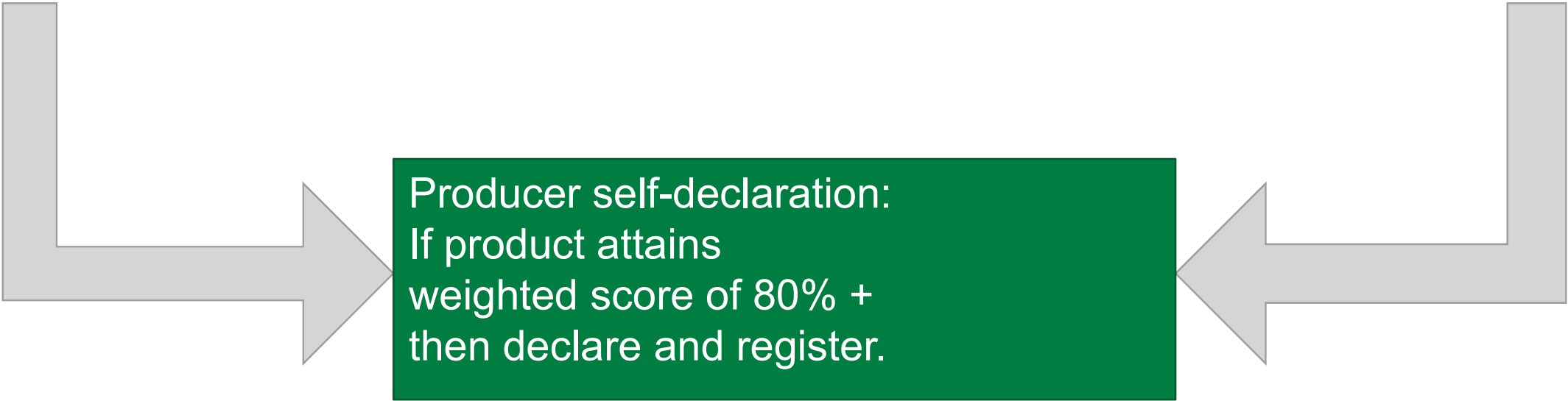
Provide Transparent Information

Framework of DEKRA PSR Hydraulic Fluids

Product-related Requirements	System-related Requirements
<ul style="list-style-type: none">▪ Ageing & Oxidation Stability	<ul style="list-style-type: none">▪ Product Stewardship
<ul style="list-style-type: none">▪ Material & Component Compatibility	<ul style="list-style-type: none">▪ Risk Assessment Process (FMEA)
<ul style="list-style-type: none">▪ Fuel Consumption	<ul style="list-style-type: none">▪ Integrated Management System (SHEQ)
<ul style="list-style-type: none">▪ Biological Degradation	<ul style="list-style-type: none">▪ Supplier Management
<ul style="list-style-type: none">▪ Eco-toxicity & Plant Growth	<ul style="list-style-type: none">▪ Product Safety Training
<ul style="list-style-type: none">▪ Life Cycle Assessment (LCA)	<ul style="list-style-type: none">▪ Transparent Product Information

	Below market average or benchmark
	Within market average or benchmark
	Above market average or benchmark

	Insufficient documentation, low data quality
	Internal documentation, average data quality
	Audited documentation, high data quality



Producer self-declaration:
If product attains
weighted score of 80% +
then declare and register.

- 1. Climate change and scarcity of fossil resources are interdependent.**
- 2. Solutions for industry are**
 - Material efficiency in production
 - Use efficiency in use
- 3. Lubricant industry has low contribution to problem — but potentially high contribution to solution.**
- 4. Lubricants have in-use leverage.**
- 5. Product-specific rules (PSR):**

- Long-lasting
 - Compatible
 - Fuel-saving
 - plus: degradable and harmless
- 6. PSR to be integrated in sustainable governance.**
- 7. Declarations to be provided to users based on auditable evidence.**