sanofi

LCA for Devices Eco-Design Circularity

IPAC-RS Webinar
Nov 2022

- Design owner of many of our Medical Devices (MD) and Drug Device Combination Products (DDC) → Owning and maintaining DHF
- Creates MD and DDC Platforms for various drugs
- Selling products across the world and compliant to all regional regulations

https://www.osram.de/os/company/intellectual_property_ip.jsp

Greenhouse gas emissions

2% are directly controllable by Sanofi

23% indirectly through influence on direct suppliers

75%

Direct

Tier 1
(direct suppliers)

Tier 2 and Tier 3 - ∞
(suppliers of suppliers)

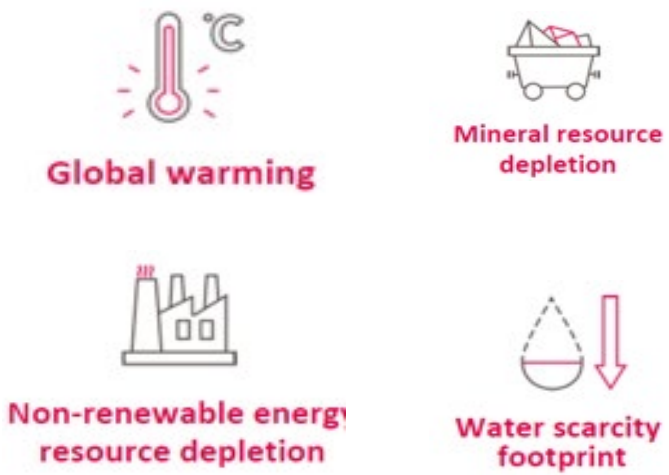
Source: WifOR Institute „Sozioökonomische und ökologische Wirkungsanalyse von Sanofi in Deutschland“ (Dezember 2020)

Life Cycle Assessment (LCA) as standardized methodology

- Recognized and Scientific based standard to assess Product Environmental Footprint (PEF)
- Identifying levers for eco-design measures
- LCA for Devices conducted since early 2020
  - Cross-Functional Sanofi team supported by ext. Consultant (2019-2022)
  - Own Expert team as of Q4/2022
  - Own LCA software in roll-out process in Q4/2022

Reusable system significantly *less impactful*, *Raw materials* drive *disposable system* impacts

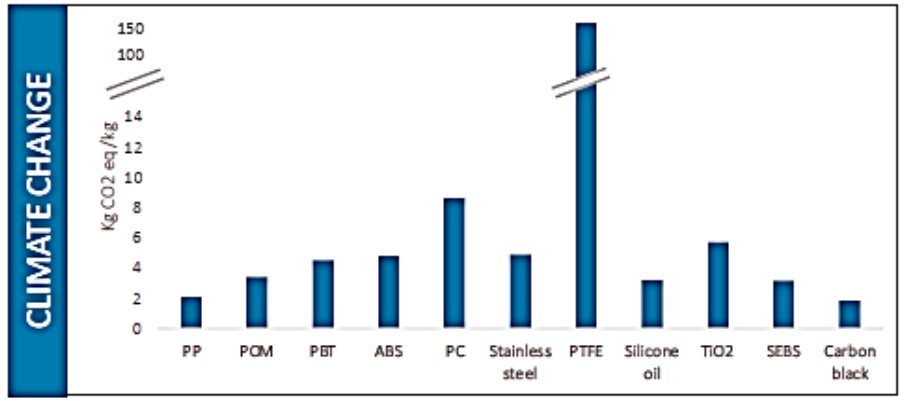
- Reusable system induces > 60% lower environmental impact than disposable system over full lifetime
- Tertiary Pack and cartridge packaging/distribution as main contributors
- impacts mainly caused at raw material stage and manufacturing, e.g. Component Transport trays

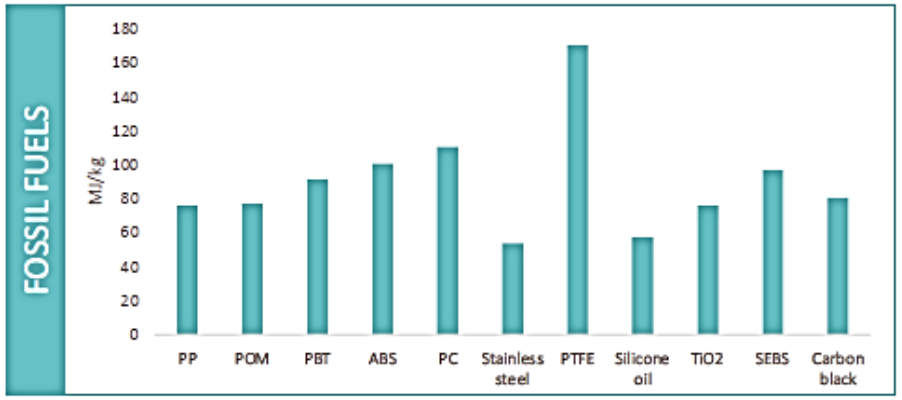


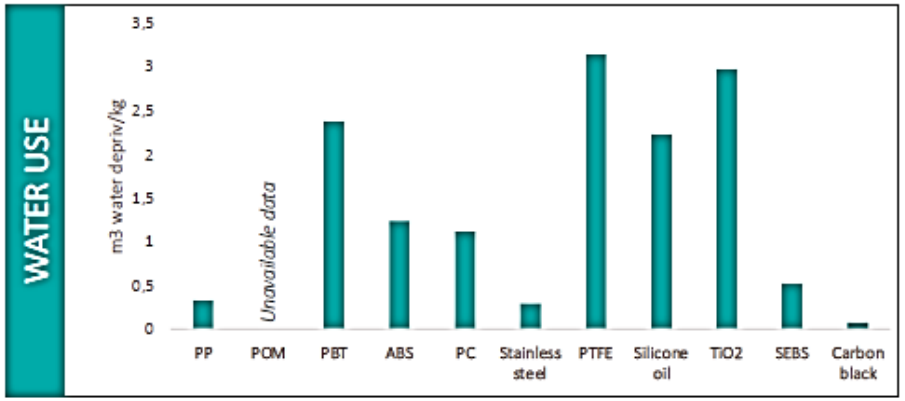
Impact of *raw materials* on Selected Environmental indicators

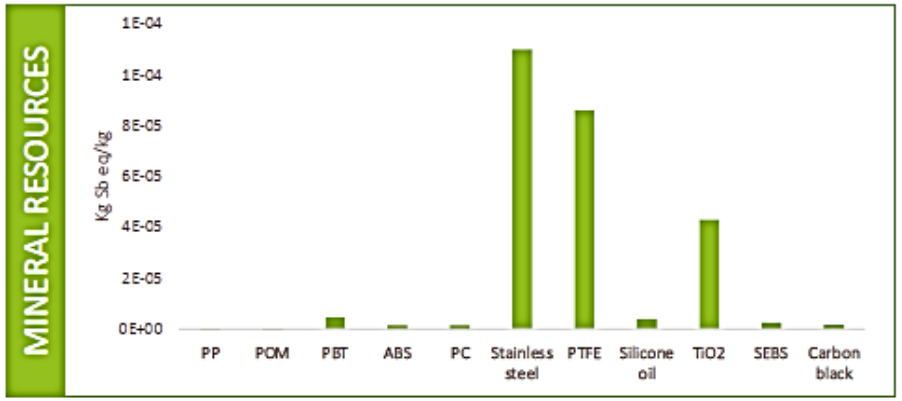
From plastics and additives currently used in devices these materials are the most problematic

- Polycarbonate (PC, BP(A) discussion)
- Polytetrafluorethylene (PTFE – Teflon, PFAS discussion)
- Titandioxide (TiO2, → SVHC)



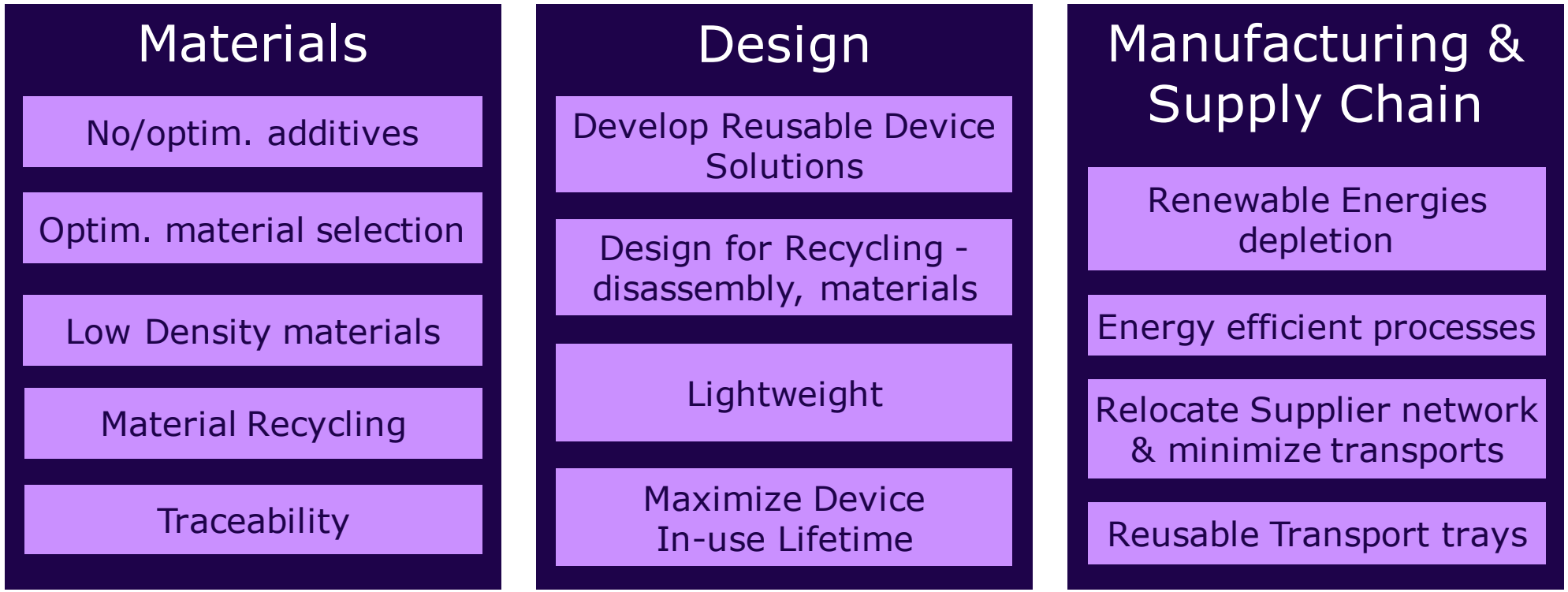






Eco-Design *opportunities*

Reducing environmental impact per dose of major contributors



Eco-Design Devices - Main *takeaways*

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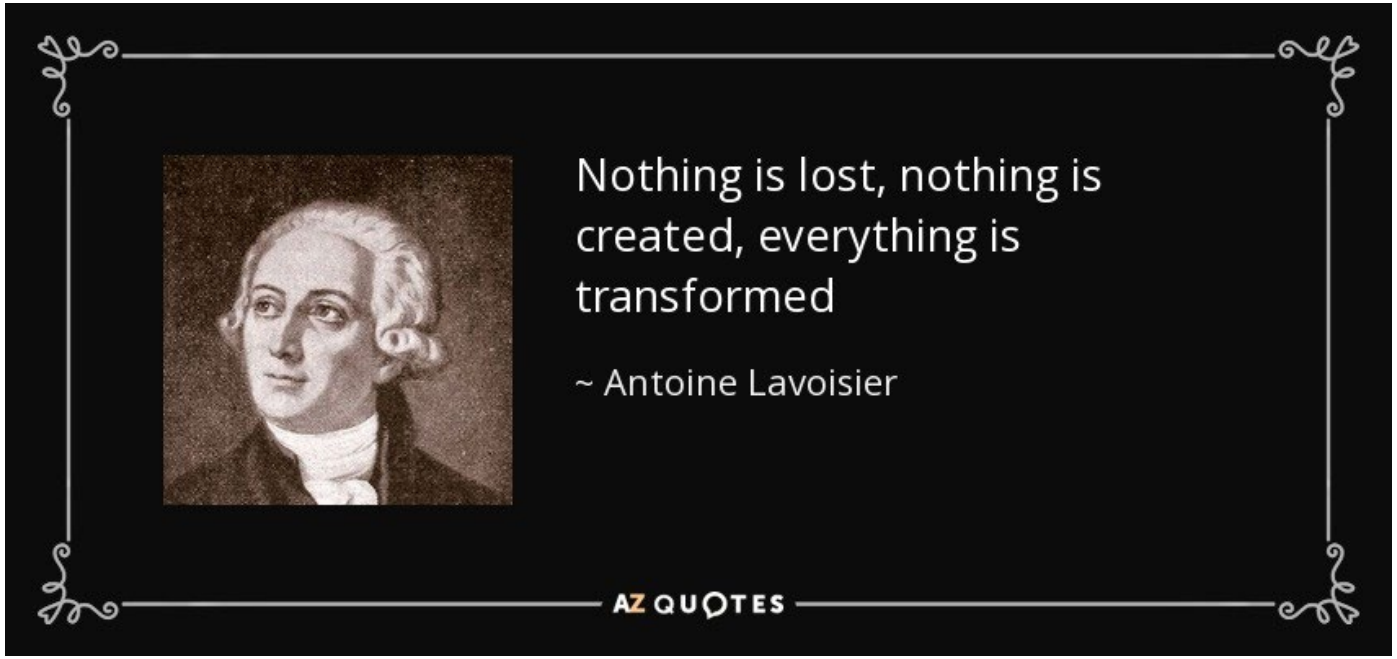
TRUE Circularity, no green-washing



Opportunities
Chemical recycling
No downcycling

Invent & produce new **valuable** products from our waste streams
Regulations and value propositions to be re-defined !

Appendices

EcoDesign & Sustainability *in Device Development*

Biggest impact made in early development Phase for both new and existing devices

Concept Design Consideration

- Understand user (patients, clinicians, HCPs), markets, and regulatory needs
- Environmental impact targets
- Current & Future Device Competition
- Investigate into device and manufacturing concepts
- Easy-to-manufacture
- Technical Feasibility

EcoDesign & Sustainability Considerations

- Aware of components life cycles
- What resources needed
- Materials globally scarce, or problematic (conflict, SVHC)
- Materials & components recyclable
- Drug units & Doses per Device
- Single or multiple use Device ?
- Disposable or Reusable Device ?
- In-use lifetime impacting both cost and emissions-per-dose
- Device enabling @Home use

Initial Life cycle Assessment

- Identify improvement potentials
- Where and how components, and devices can be manufactured
- Logistics impact
- Non-renewable energy depletion
- Emissions during use phase
- Waste generated over LC
- Circular economy approach

Sanofi's renewed contract with society

Affordable access

- Create a **Global Health Unit that gives access and supply continuity to 30 essential life-changing medicines**[1] at no-profit to the world's 40 poorest countries
- **Donate 100,000 vials to treat Rare Disease patients every year free of charge**[2]
- **Develop a global access plan for all new products** with the goal to make available our new innovation within 2 years of the launch in the U.S.

R&D for unmet needs

- Vulnerable communities
- **Eradicate Polio**
- **Eradicate Sleeping disease in humans** by 2030
- **Develop innovative medicines to eliminate cancer deaths in children**

Efficiency &Sustainability

- Healthy planet
- **100% blister-free vaccines** by 2027
- **100% eco-design for all our new products** by 2025
- **100% renewable energy for our electricity in all our sites** by 2030
- **100% carbon neutral car fleet** in 2030[3]

Beyond the work place

- An inclusive work place
- **A senior leadership community representative of society** by 2025
- **Social & economic engagement in all communities** where we operate
- **From leaders to citizens – CSR** is embedded in our leaders' career development path

1.As defined by the World Health Organization
2.Donation with no commercial intent
3.Scope: Vehicles fleet directly controlled (leased/acquired) by Sanofi and during the usage phase by Sanofi