

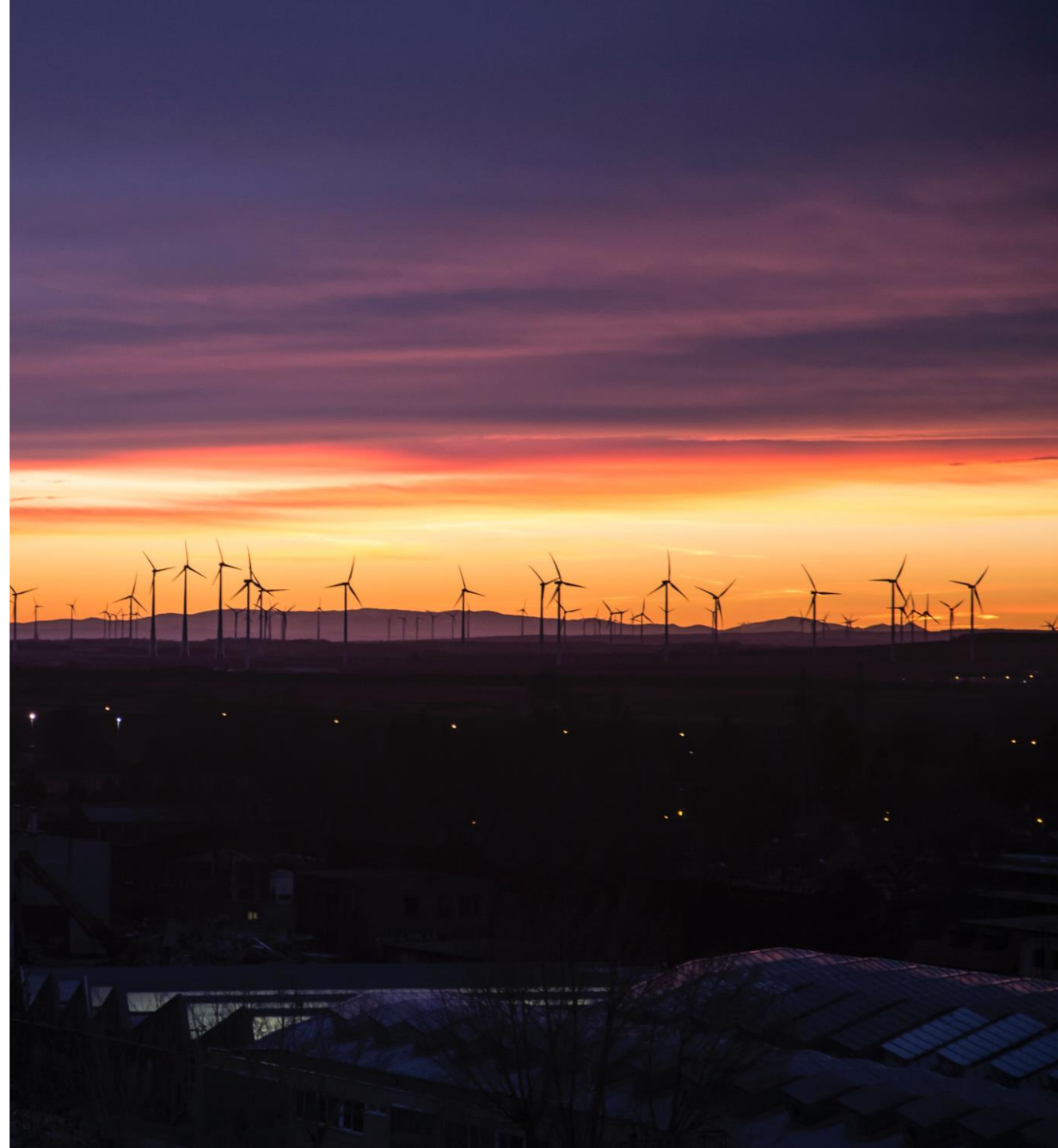
Green manufacturing

Green Circular Economy Conference

September 2020



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For companies, sustainability/green is an opportunity but also a risk

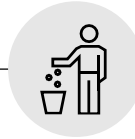


Opportunities



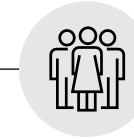
New products & services

- Sustainability marketed CPG products **growing 5.6x faster**
- **69% higher growth** in Unilever's Sustainable Living brands vs. rest of portfolio



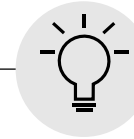
Resource efficiency

- Since 2010, Unilever has saved **\$680M** in energy efficiency and **\$260M** from waste reduction
- Walmart saves **\$1 billion** p.a. through freight efficiency



More loyal employees

- A purpose-driven organization drives **3x employee engagement**
- **64%** of millennials **won't take a job** if a company isn't strong on CSR



Reinvention of existing products

- **\$60Bn profit-pool** growth in plastics reuse & recycling for the chemicals industry by 2030
- Fashion resale **growing 21x faster** than retail



Risks



Value pools are drained

- **92%** market value of US coal companies lost from 2011-2016



Capital dries up / capital costs increase

- **38% of assets** are managed by ESG investors, growing at 16% p.a. (for US, UK, AUS, JAP, CA)
- Sustainable debt market reached **\$247bn** in 2018, making up **~7%** global debt issuance



Products or inputs are banned or dry up

- Over **70 countries** have plastics legislation; over half came into force since 2015
- **30-50%** of CPG majors' revenue depends on crops from water stressed regions



Input costs increase massively

- **20% of earnings** of listed global companies lost at carbon prices of \$100/tCO2
- At 1.5 degrees global warming, productivity forecast to **decline 15% for maize, 12% for wheat**

Unilever placed sustainability at the heart of the strategy with relentless portfolio view– and captured significant economic rewards

“My decisions are made in the long-term interests of the company”

Declared no quarterly annual reports or earnings guidance for the stock market



Unilever’s sustainability strategy:

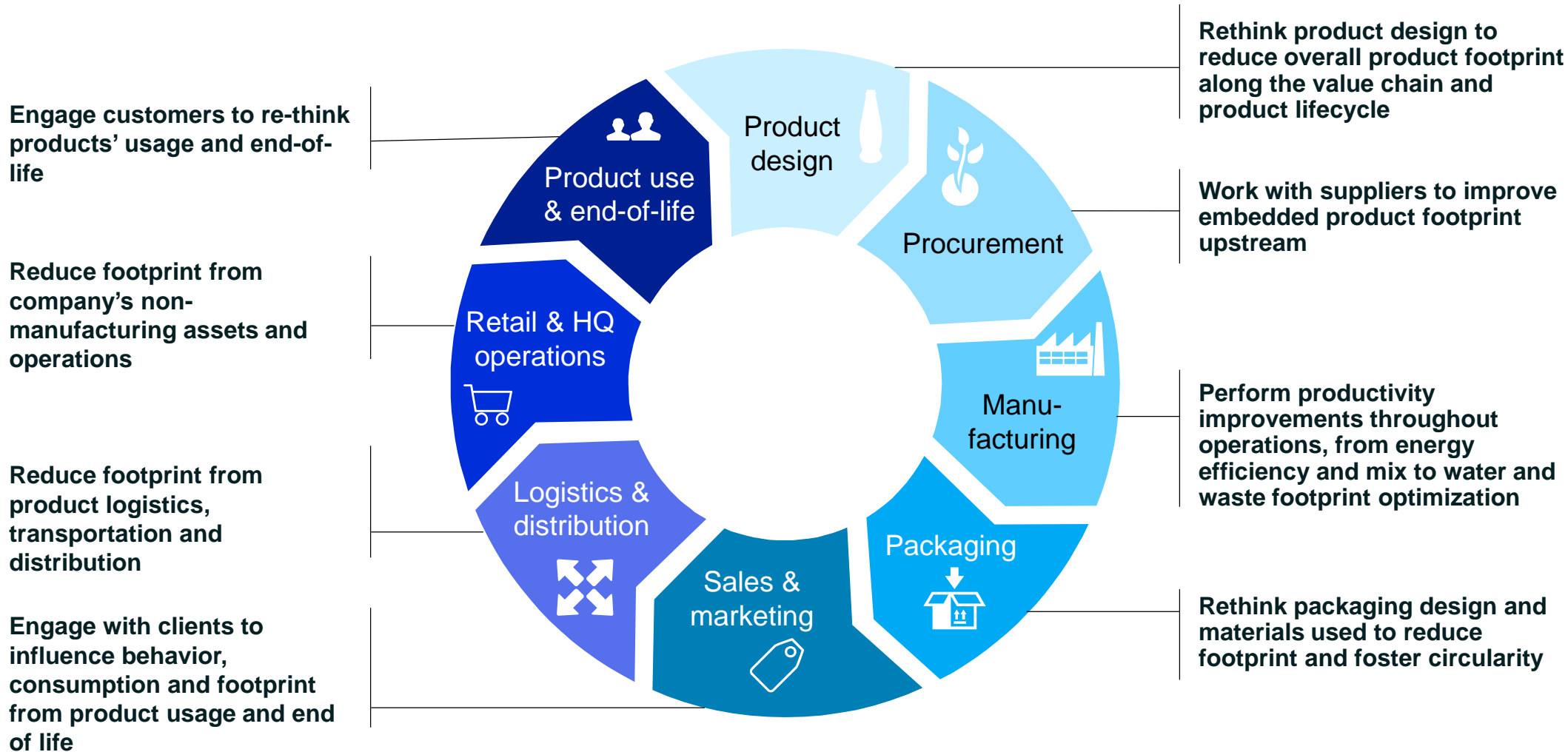
- In 2016, Unilever announced that its 600+ factories send **zero waste to landfills** in over 70 countries
- The company commits to be **fully circular on its plastic packaging** by 2025, having it **100% recyclable, reusable or degradable**
- Unilever’s most sustainable brands (e.g. Dove, Ben & Jerry’s) are **achieving above average growth**
- **Around 60% of growth in 2016 came from Sustainable Living brands**; these brands grew over 50% faster than the rest of the business

Financial impact:

- Cumulative **cost avoidance of over €700m** through eco-efficiency measures **in factories** since 2008, **additional €250m of savings** through manufacturing, logistics, material efficiencies and R&D
- Since Paul Polman became CEO of Unilever in 2009, **market cap has increased by 126%¹**
 - P&G’s market cap increased by 26% in the same time period


¹ Unilever market cap: Jan 2nd 2009 = \$76.11; Oct 11th 2017 = \$172.28; P&G market cap: Jan 2 2009 = \$184.06; Oct 11 2017 = \$232.03



Opportunities on resource productivity improvements can be found along the value chain, for existing as well as new companies



Several levers exist for manufacturers to become more ‘green’ in their operations

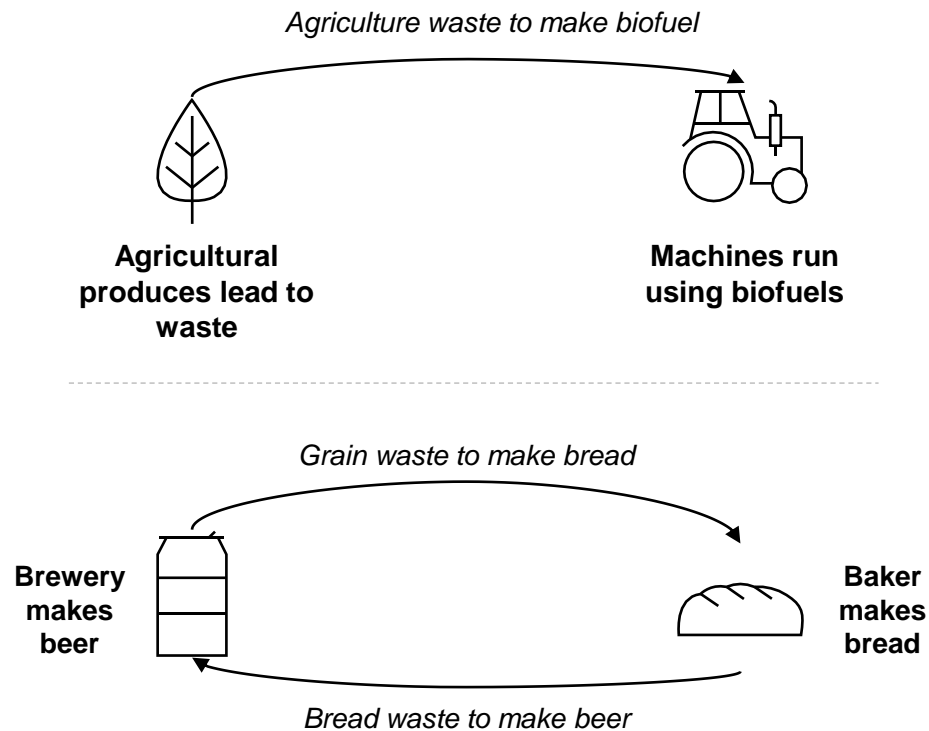
NON-EXHAUSTIVE EXAMPLES

 Next generation of moves

| | <i>Levers</i> | <i>Details</i> | <i>Example</i> |
|---|--|---|---|
| Productivity | Optimize consumption | Improve operation of equipment , incl. operators capability building Optimize units, systems and processes to minimize footprint (e.g., to reduce use of steam) | Optimize shut down and start up strategies Optimize scheduling and production across units Secure right-sizing of the equipment and unit/system |
| | Optimize operations portfolio | Dispose manufacturing assets with adverse sustainability performance and redeploy operations to greener ones | Divest non-sustainable operations |
| | Reduce waste in transportation | Create transparency and address losses from the overall unit/system (not for value-added operations) | Monitor and address leaks Reduce redundancies Increase insulation |
| Energy | Optimize utility purchasing | Move to clean resource sources (e.g., renewables) Change energy mix (increase level of electrification) | Partner with 3rd party to build biomass plant on premises replacing existing energy sources |
| | Improve re-use of resources | Re-use heat Re-use grey water | Pursue heat integration Leverage industrial heat for commercial or residential use |
| Circular | Optimize sales | Sell excess utility capacity to neighboring sites and communities | Plants selling waste heat to neighborhood (standard practice for steel in China) |
| | Improve efficiency in generation | Improve efficiency of resource generation and/or conversion | Use cogeneration for steam and electricity production |
|  | Optimize integrated plants and networks | Optimize network’s footprint live Build digital twins for integrated plants and networks, optimizing use of resources across integrated network | Leverage digital tools to track live consumption of production plants and react when efficiency drops below specific thresholds |
|  | Add a price on resources | Set an internal price on resources and take these prices into account when designing new plants / upgrading existing ones as well as in existing plants P&L | Carbon price (above 50€/ton) Water price by m ³ |

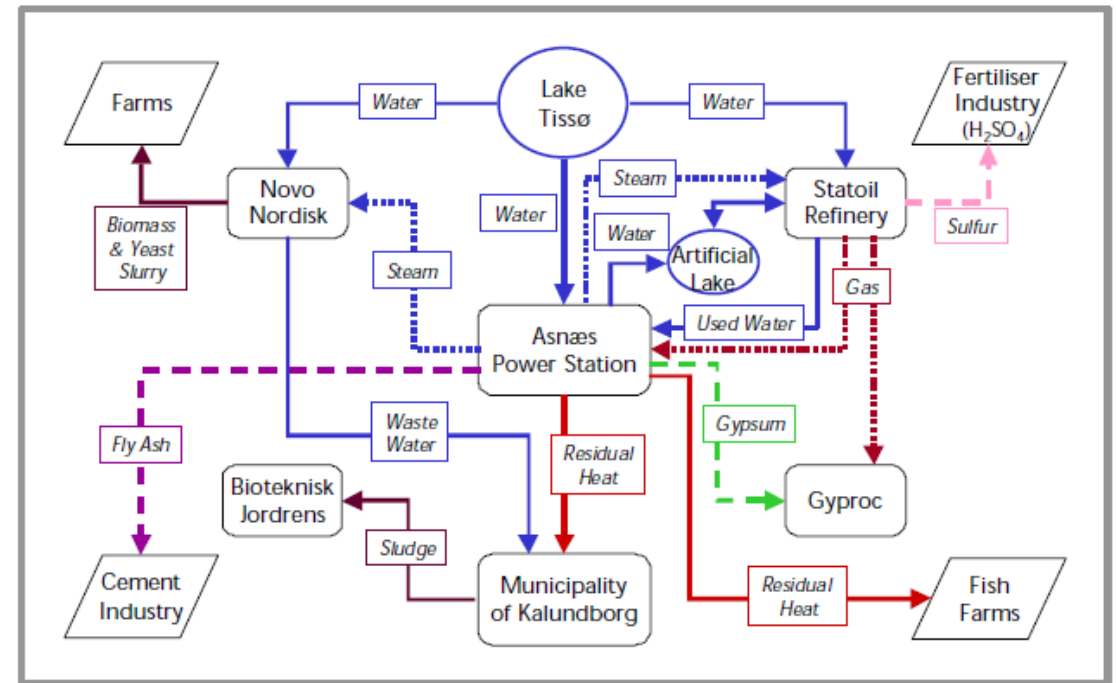
One step further, opportunities also exist for manufacturers to green their operations by collaborating with other companies

On a small scale, there are opportunities for circular economy amongst different companies



Example: BrouwBrood in Amsterdam

On a large scale, industrial clusters provide the opportunity to share resources and reuse waste



Example: Kalundborg industrial park in Denmark