

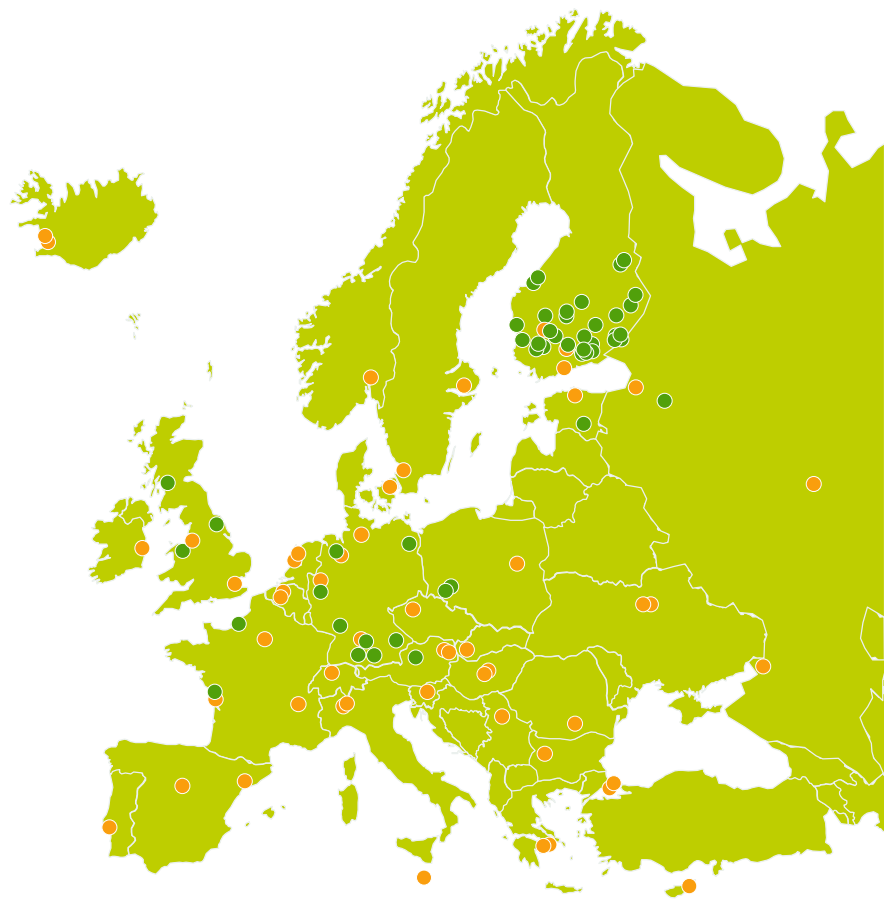
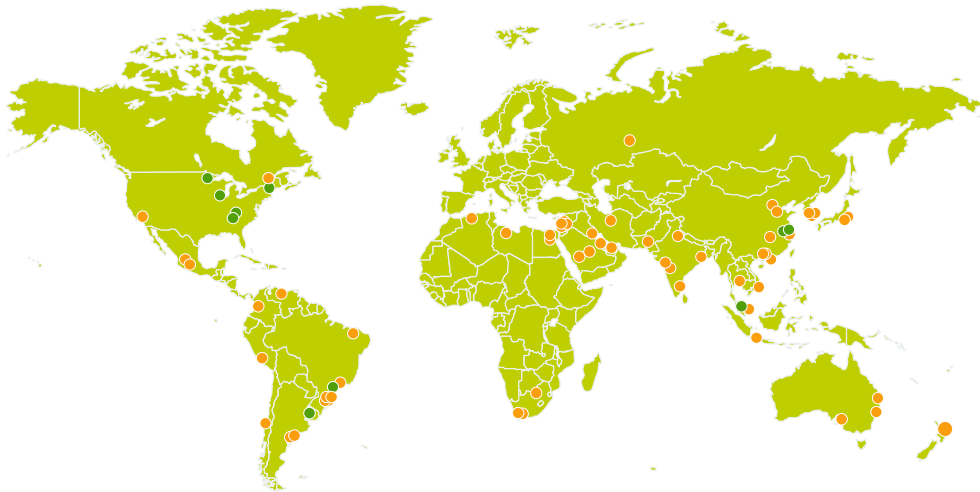
BIOFC

Baltic Development Forum 1st Dec 2015, Stockholm
UPM's experiences From working with water

Seija Vatka

Manager Water, Environment and Responsibility, UPM

UPM on a world map

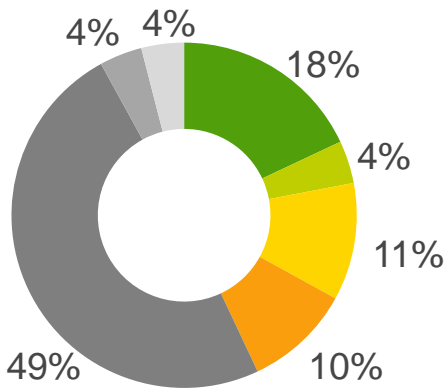


- Global sales network
- Production in 13 countries

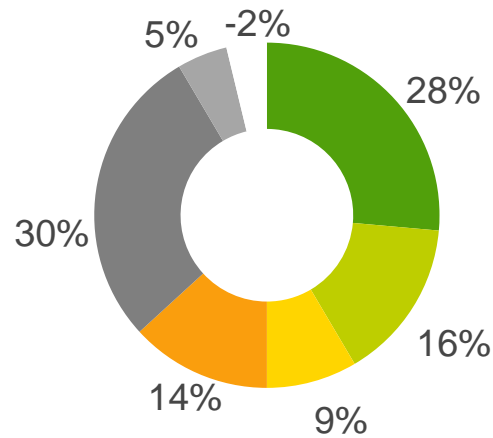


UPM's business portfolio in figures

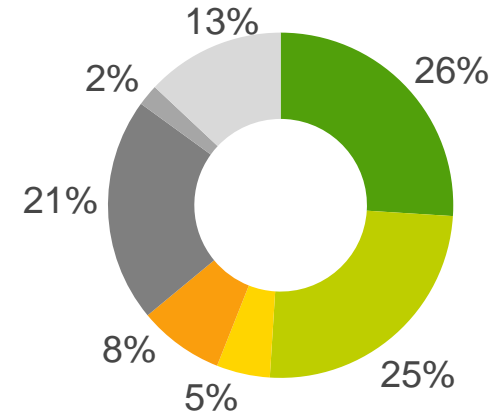
Sales 2014 *)
EUR 9,868 million



EBITDA 2014
EUR 1,287 million



Capital employed 2014
EUR 10,944 million



*) Unconsolidated

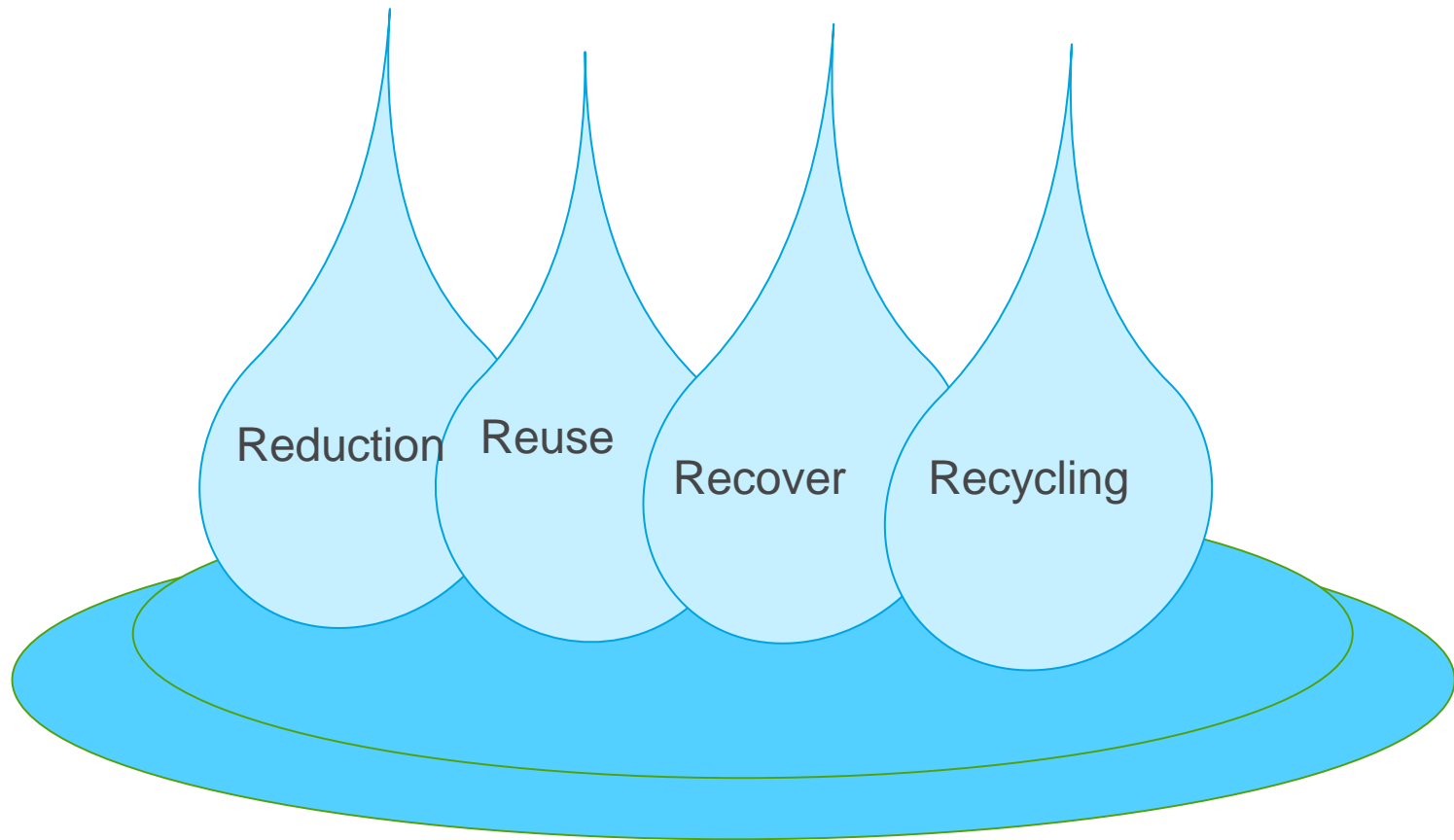
UPM Biorefining
UPM Paper Asia

UPM Energy
UPM Paper ENA

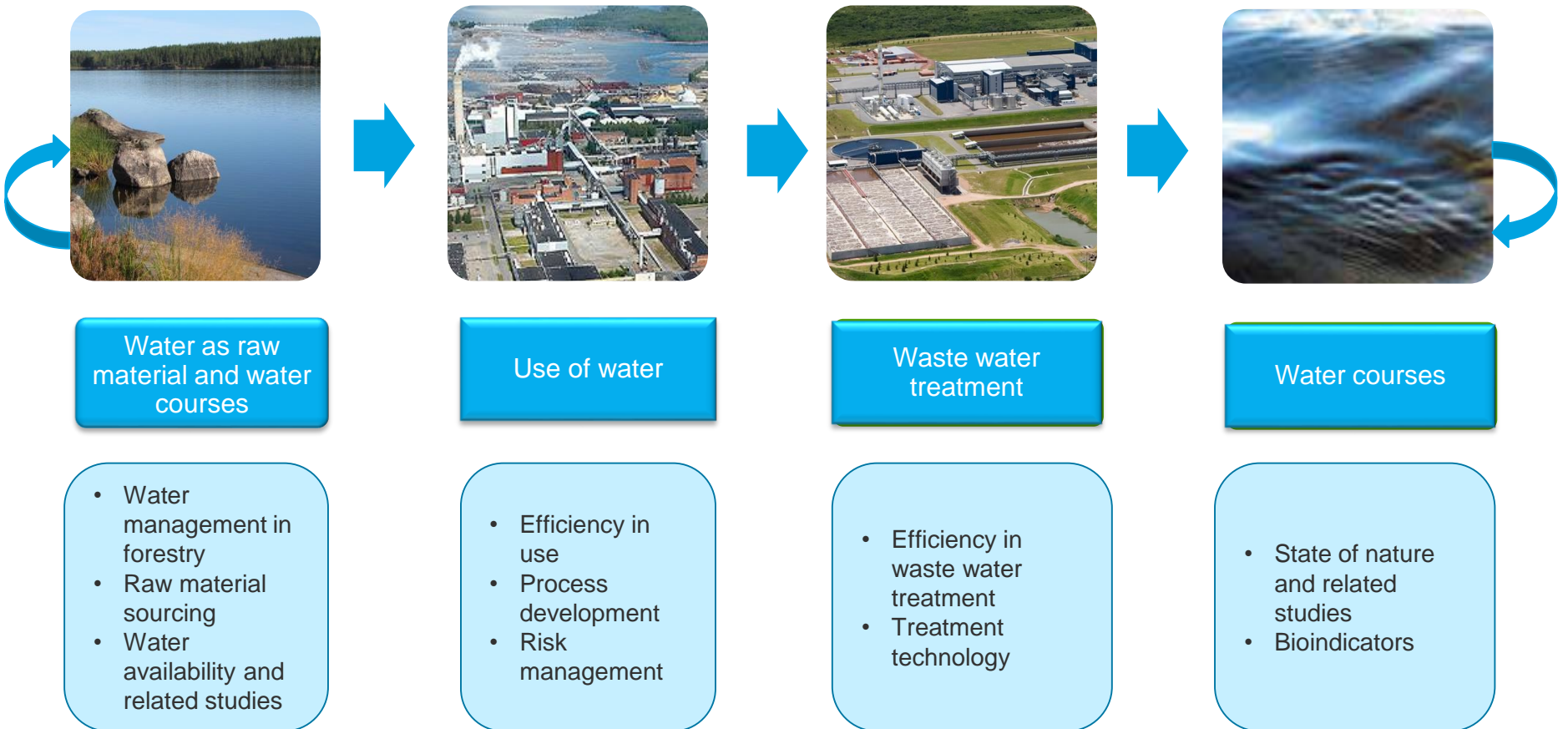
UPM Raflatac
UPM Plywood

Other operations

Water Process in UPM



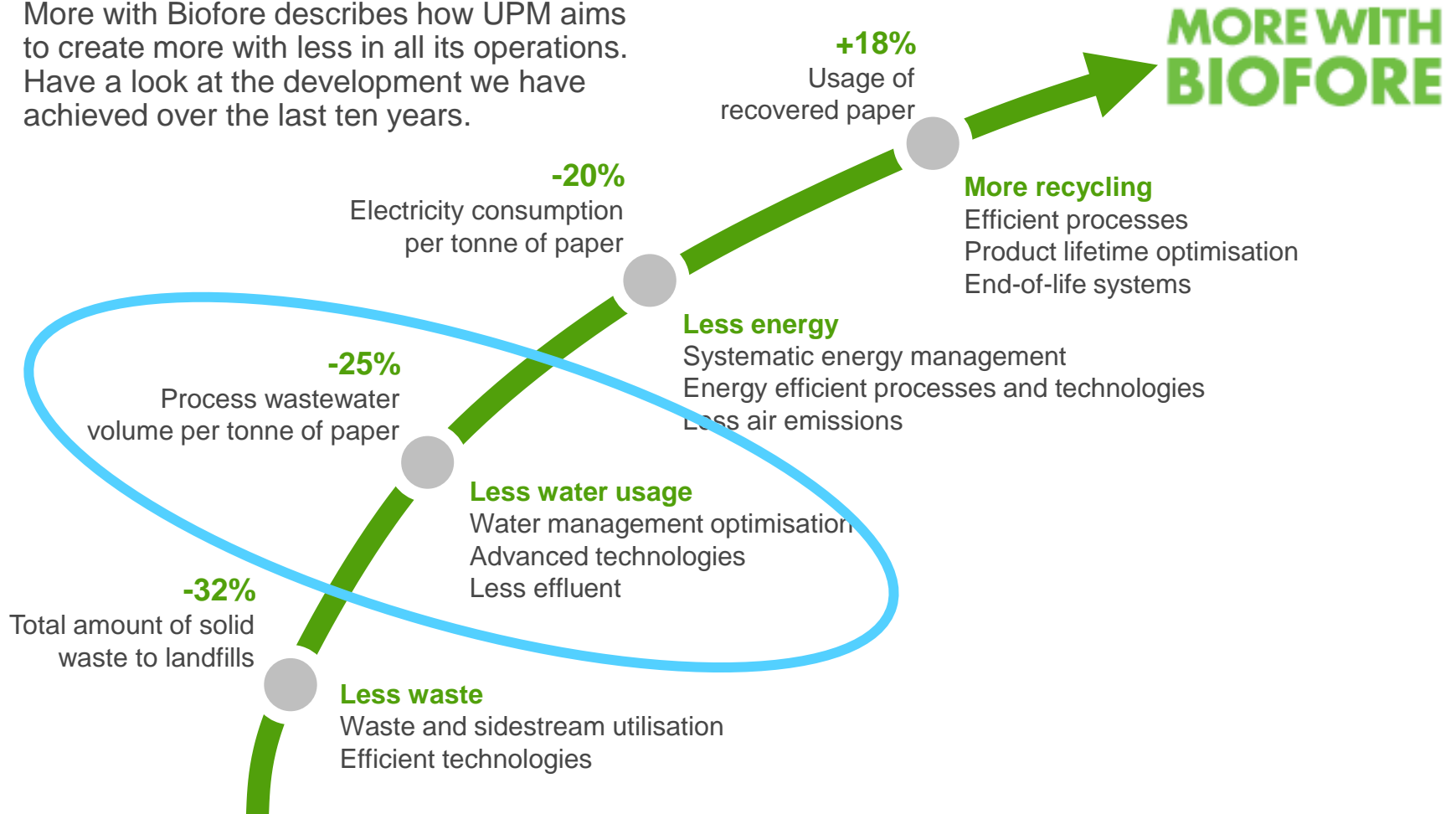
UPM manages the water related issues in the whole supply chain





Resource efficiency – UPM's cornerstone

More with Biofore describes how UPM aims to create more with less in all its operations. Have a look at the development we have achieved over the last ten years.

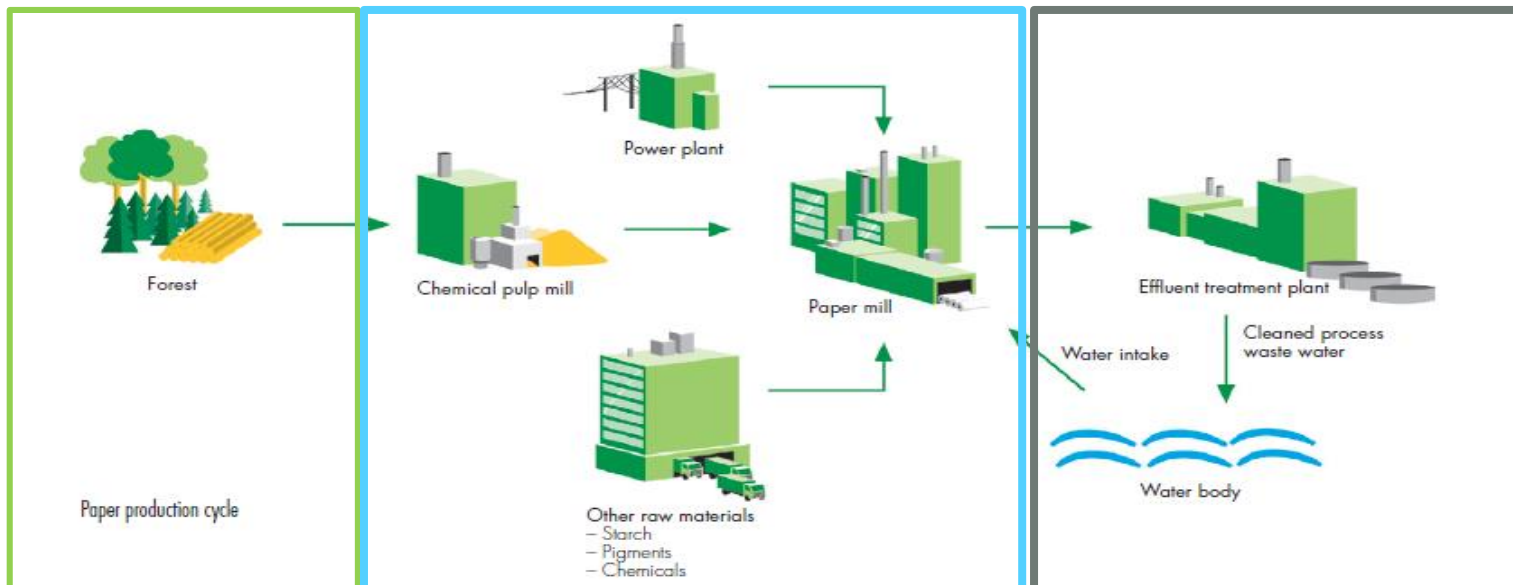


UPM Nordland Water Footprint

UPM is part of the Water Footprint Network and has been developing the water footprint for UPM Nordland paper mill

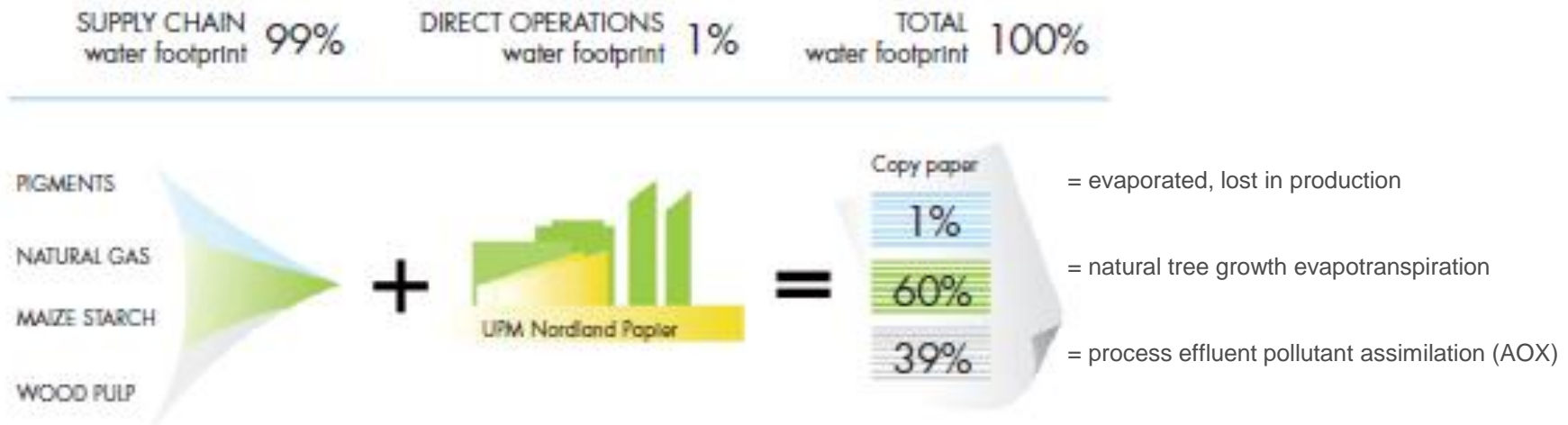
The **water footprint** of UPM's paper consists of three water components:

- **Green water** is evapotranspirated through the trees natural water cycle or used in agriculture
- **Blue water** is ground and surface water that does not return to the same system from which it came, for example evaporation in paper drying
- **Grey water** is freshwater that is required to assimilate pollutants in paper and pulp production process effluent so that the water becomes suitable for other uses downstream.





Water footprint accounting - results



- Around 99% of the water footprint comes from the supply chain and the remaining 1% from the paper mills' production processes.

New initiatives like the Water Footprint Network address improved water management practices and increase the understanding on water related questions that companies face in their direct and indirect operations

UPM pilots the European Water Stewardship Principles

- The EWS is in line with the EU's comprehensive set of regulations, such as the implementation of the Water Framework directive (WFD)
- As sustainable water use is in the focus, UPM tested the EWS standard for UPM Hürth mill in Germany



Source: EWP - EWS

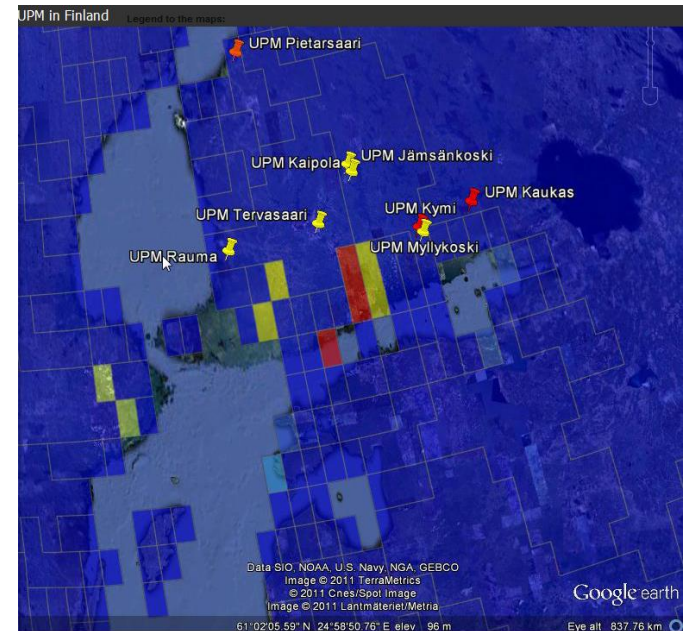
UPM Hürth - summary

- The audit results show excellent compliance for all indicators
- UPM Hürth paper mill could opt for EWS certification. This shows that although mills like UPM Hürth are located in a challenging environment, the mill can still do its share to contribute to sustainable water management at the River Basin level.
- The study at UPM Hürth also showed the importance of effective water recycling: without water circulation the fresh water consumption would be close to 250 cubic meters per ton of paper.
- With the current process, the fresh water consumption is 97% less than without recycling.

Using water responsibly

There is not only one tool or concept that gives all answers. They all provide different clues and indicators.

Most of the world's paper production is located in water rich areas.



Red = extreme water scarcity; Orange = water stress; Yellow = insufficient water; Turquoise = relatively sufficient ; Light blue = sufficient; Blue = plentiful supplies; Dark blue = water abundant

WBCSD WASH implementation in UPM 2015-2017

WASH = Safe Water, Sanitation and Hygiene

Production Units

Sales network

Forestry and wood sourcing facilities

2015

2016

2017

- Pledge signed by CEO
- **Self-assessment questionnaire** to all production sites
- Results analyzed by end of 2015
- Internal communication

- **Action plan to complete identified gaps** in production sites
- Self-assessment questionnaire to other locations by end of 2016

- Action plan to complete identified gaps in other locations
- Improvement points identified
- **Report on performance**
- External communication

UPM's summary and experiences of water tools in a Nutshell

- WF was tested and found as “not usable” by UPM.
 - They continued with CEPI (Confederation of European Paper Industries) with further study and even the wider results seem to be the same.
- We also tested EWS, but found out that it doesn't bring any added value for having ISO 14001/EMAS and using that for water management.
- Water is important for sure, but we just start to have too many tools in general and try to find synergies with existing ones.

Circular economy

The waste or harmful compounds from one can be raw material for the other



- Waste Water from
 - pulp and paper processes contains organic compounds
 - Municipal contains lot of nutrients
- Biological process needs organic compounds and nutrients
- The process produces biosludge for energy generating or soil improvement purposes
- Improvements are visible in watercourses

Sustainable water management and circular economy

- **The scarcity of Phosphors** and other nutrients are arising
- By recycling nutrients natural resources can be saved
- At the same time less nutrients are running into the watercourses
 - With this solution we can delay fertilizing process
- **Fresh water scarcity** and management will be the next significant environmental challenge that companies face
- Water is one of the key areas of environmental responsibility in UPM and an integral part of UPM's operations.

Thank you !





UPM

The Biofore
Company