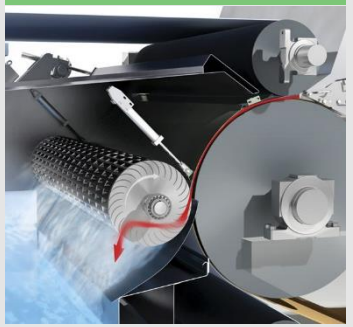
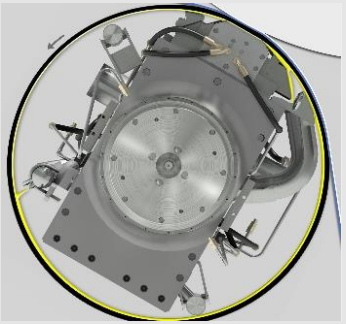
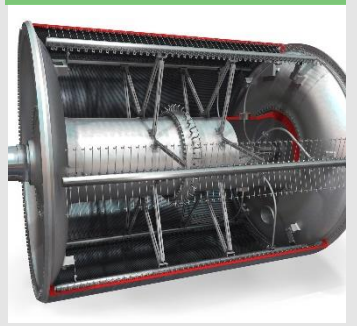
Sustainable rebuild opportunities

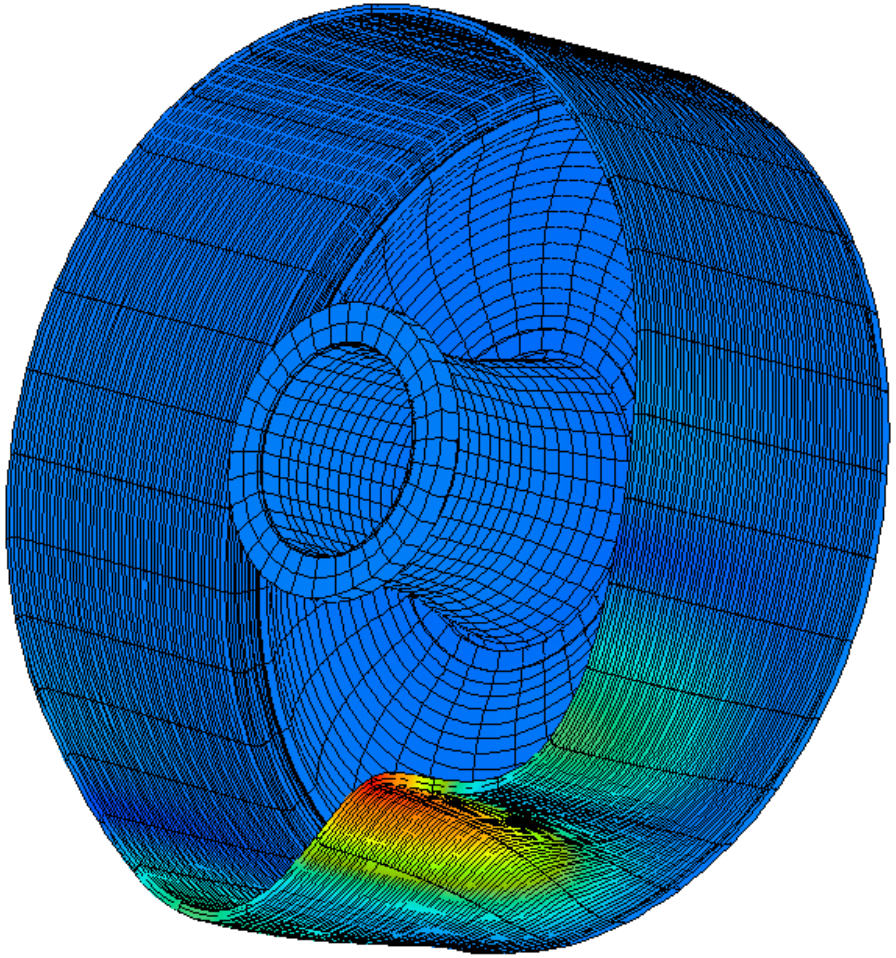
Heikki Luoma

Key technologies for rebuilds or upgrades

OptiFlo II TIS headbox	Advantage ReTurne energy recovery	Advantage ViscoNip press	Advantage ReDry web heater	Advantage AirCap helical hood	Advantage Yankee dryer cast & steel	Advantage SoftReel reel A, P, L & belted
						


Valmet
Valmet
Advantage
DCT 200HS
Valmet

Yankee Dryer Deformation

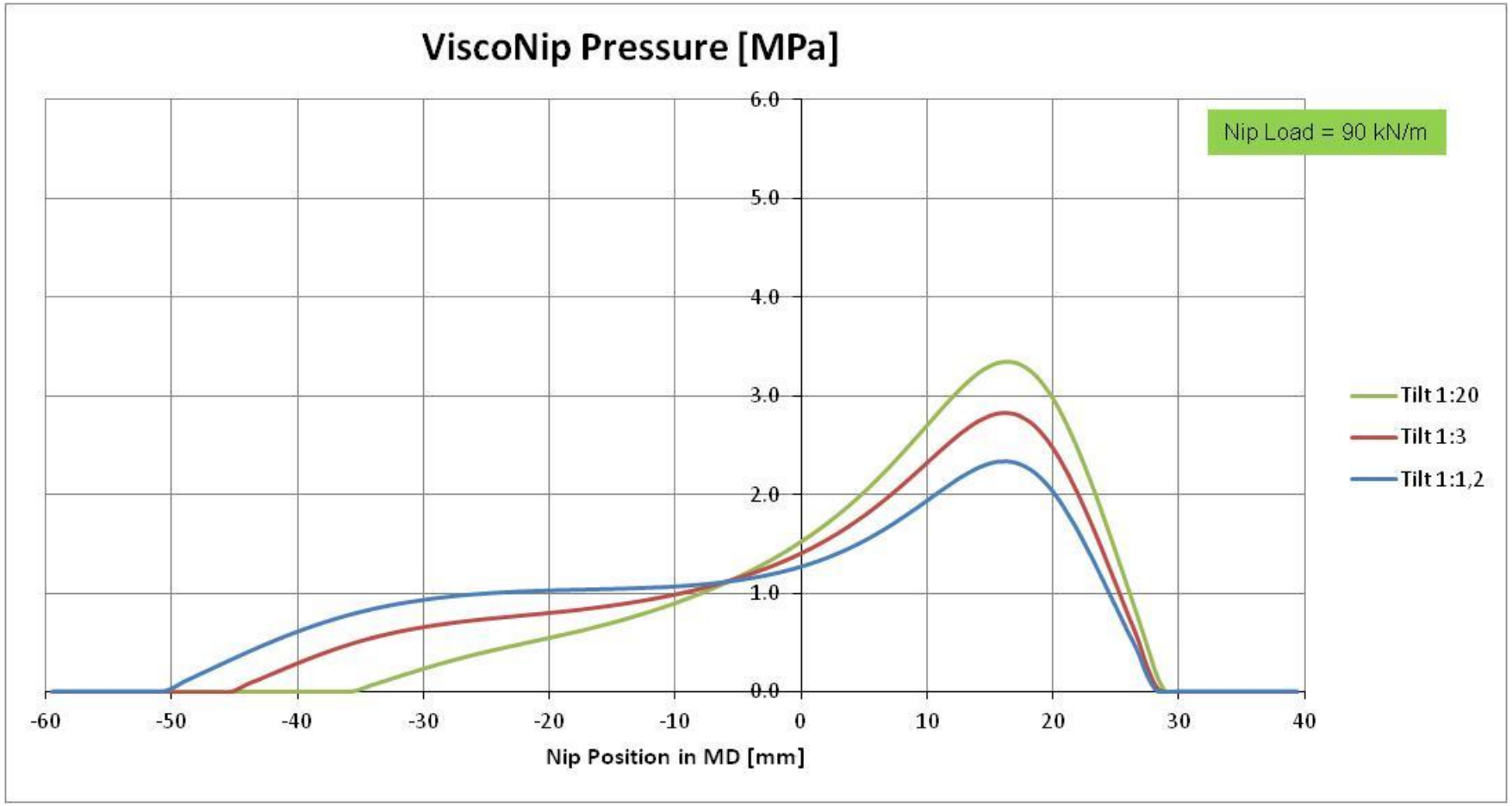


SUCTION ROLL
79 kN/m (450 pli)


Paper
Yankee shell
Felt
ViscoNip belt

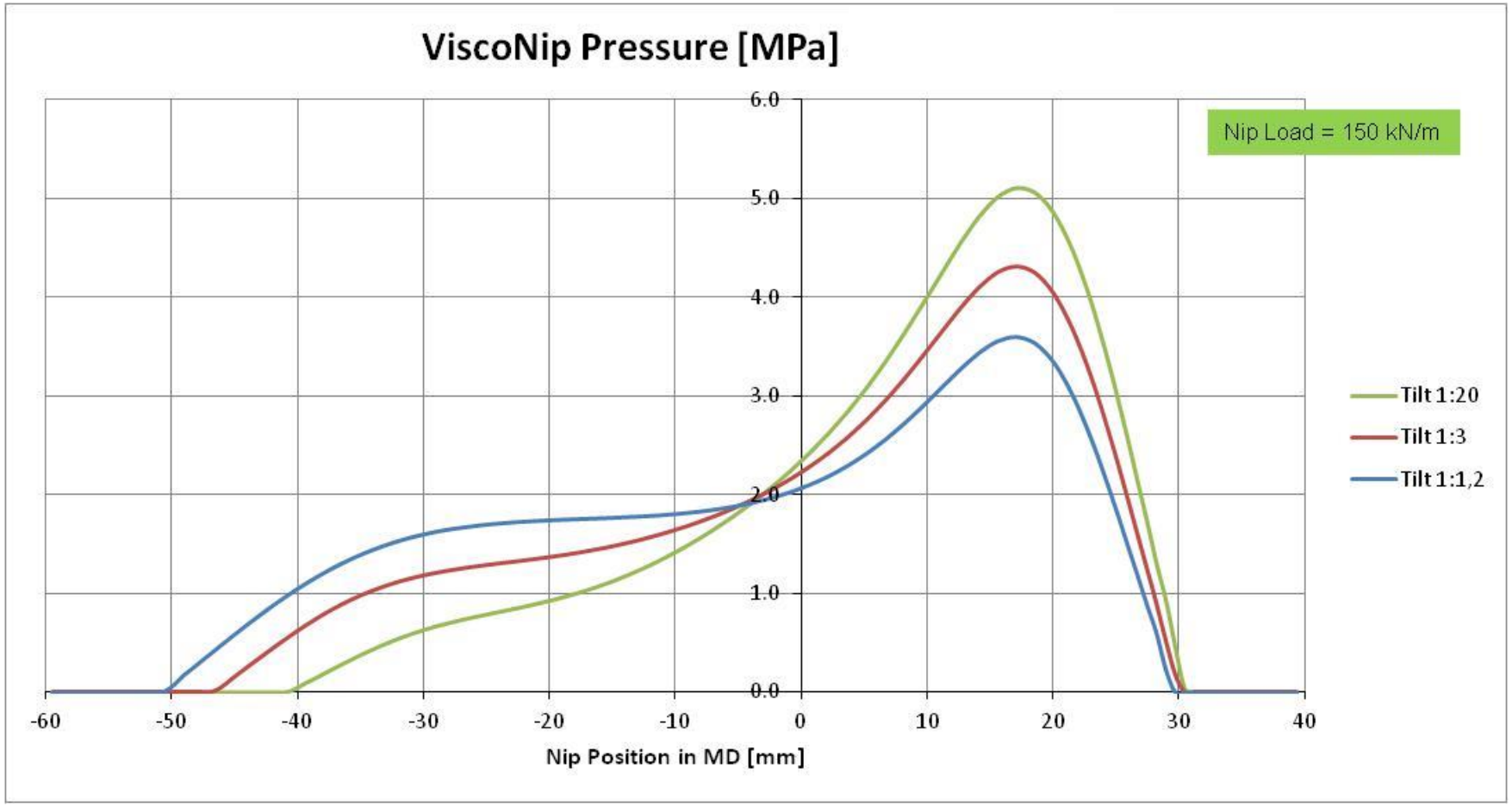
Pressure curves

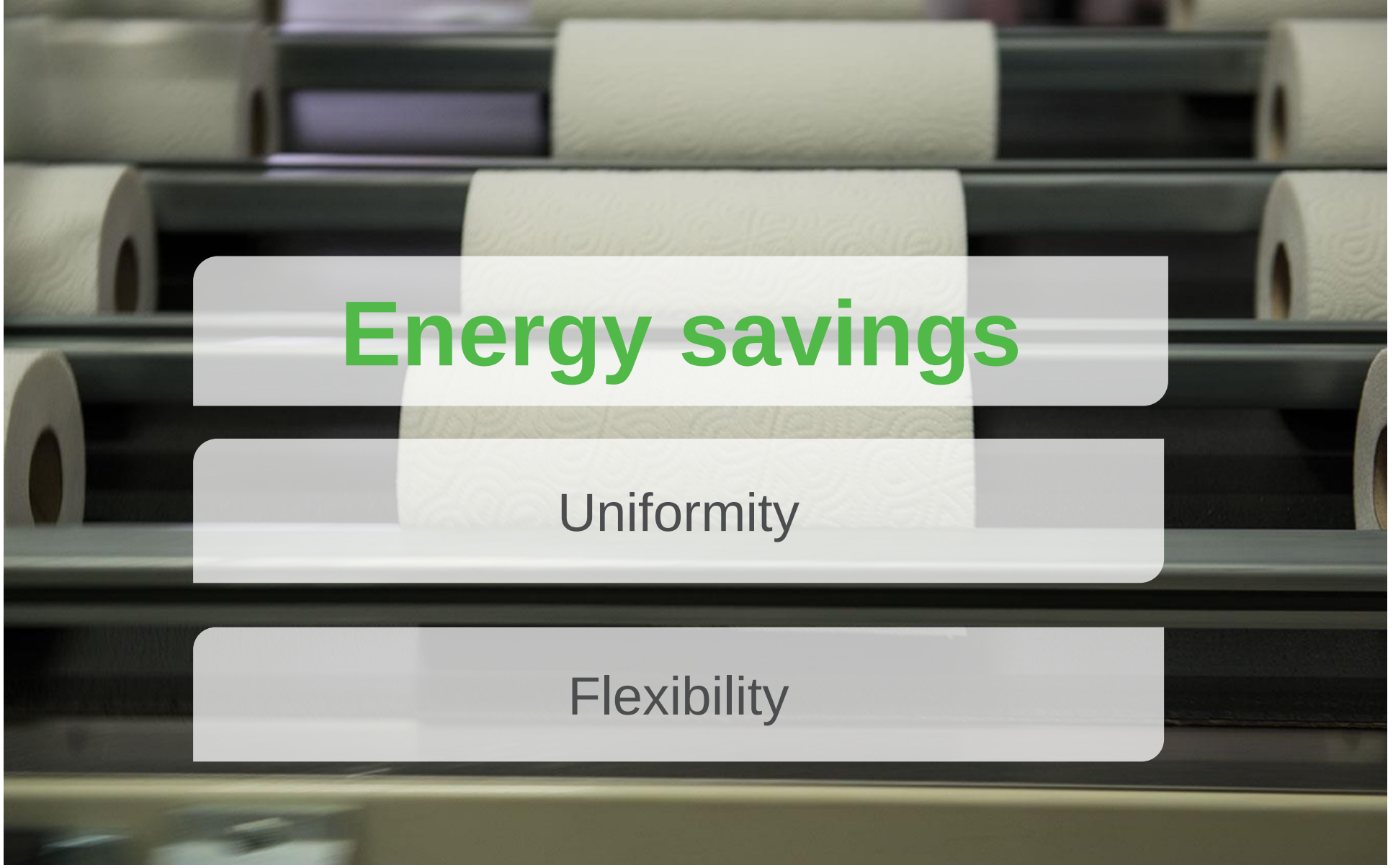
90 kN/m at 3 different pressure ratios between Chamber 1 and 2



Pressure curves

150 kN/m at 3 different pressure ratios between Chamber 1 and 2




Energy savings
Uniformity
Flexibility

Advantage ViscoNip performance in DCT200

confidential - north america

Advantage ViscoNip

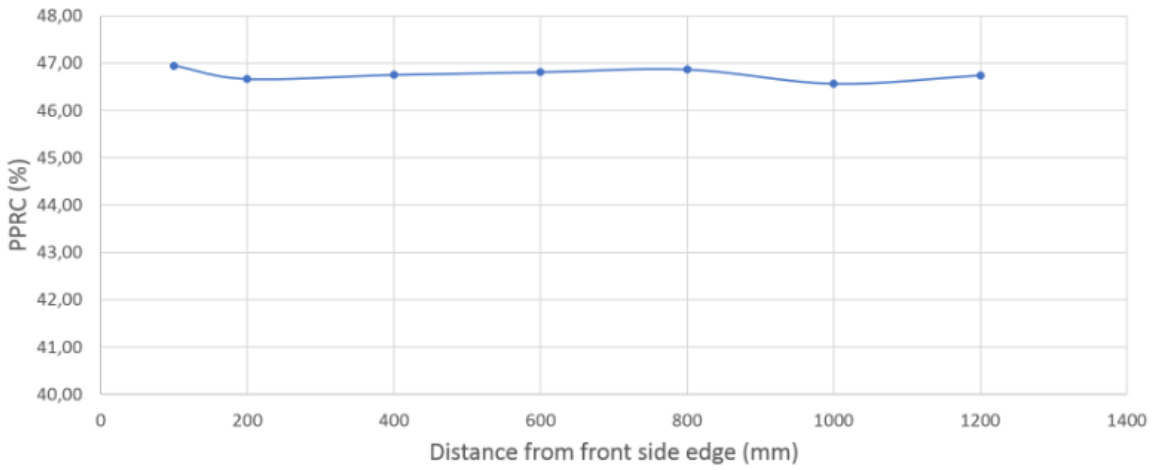
130 kN/m

press dryness 46,8% with

± 0,2 %-units Peak to Peak

12,6 gsm on Yankee

fiber: 85% DIP, 15% virgin



confidential - china

Advantage ViscoNip

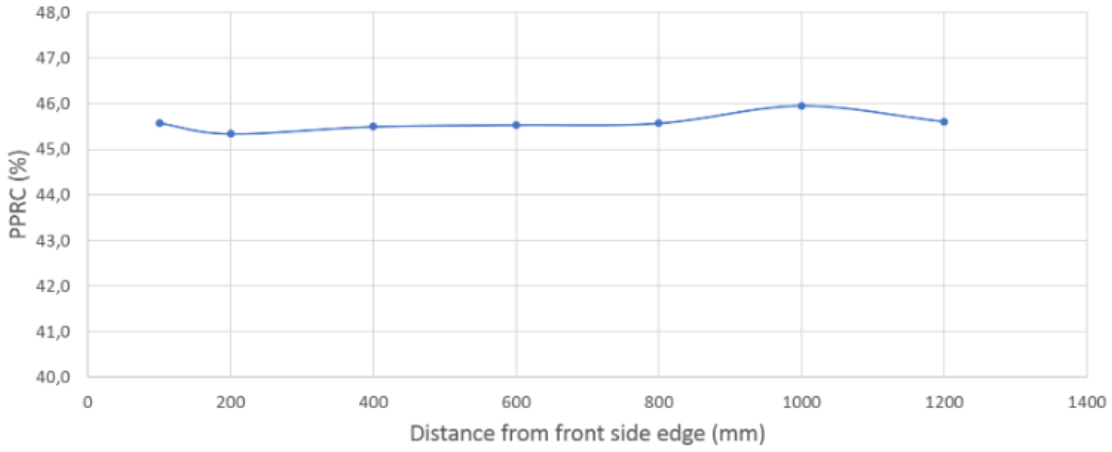
140 kN/m

press dryness 45,6% with

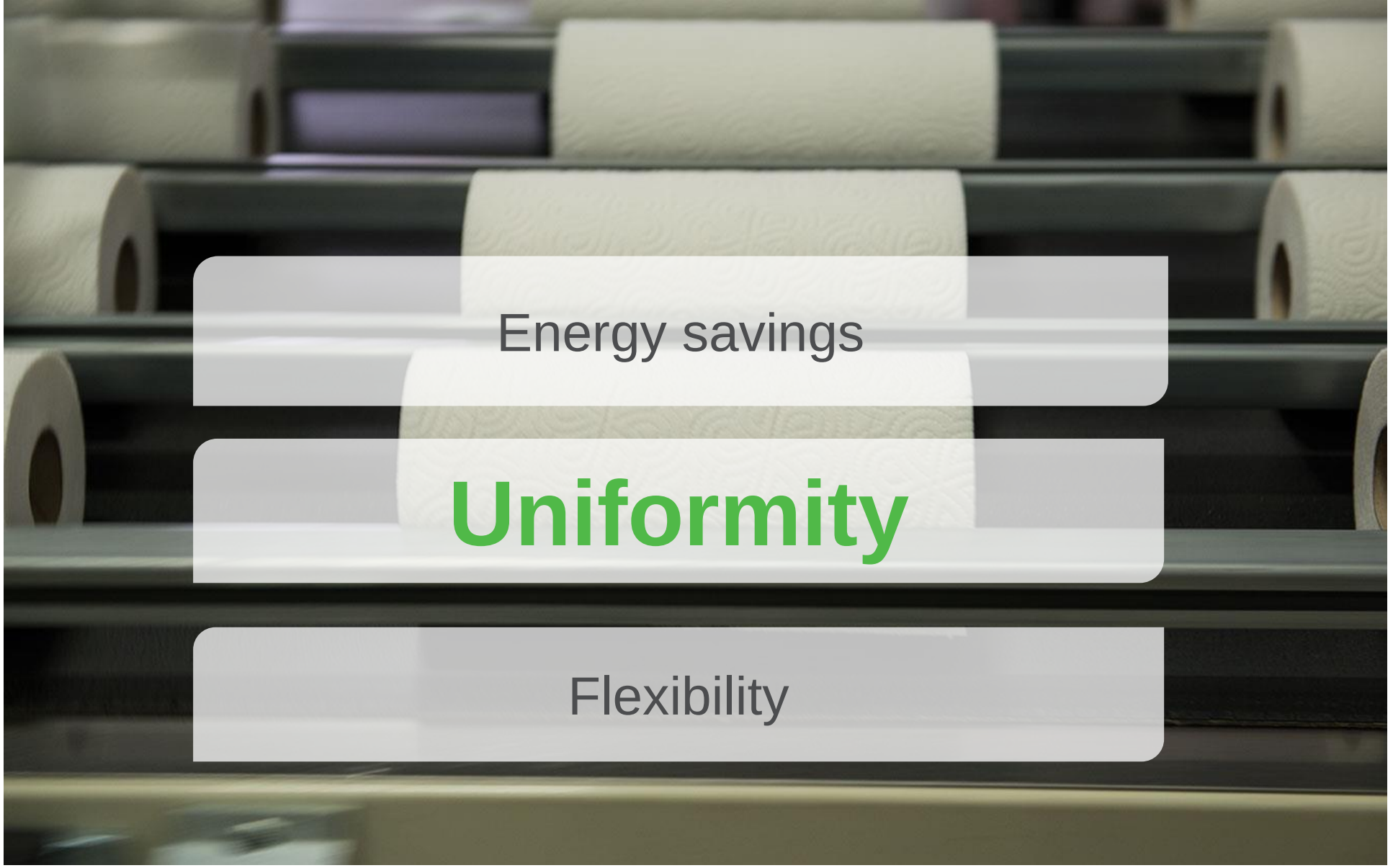
± 0,3 %-units Peak to Peak

14 gsm on Yankee

fiber: 100% virgin



Valmet


Energy savings
Uniformity
Flexibility

Uniformity

ViscoNip fully adapts to Yankee shape

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press dryness profile

Peak to Peak

± 0,3 %-units

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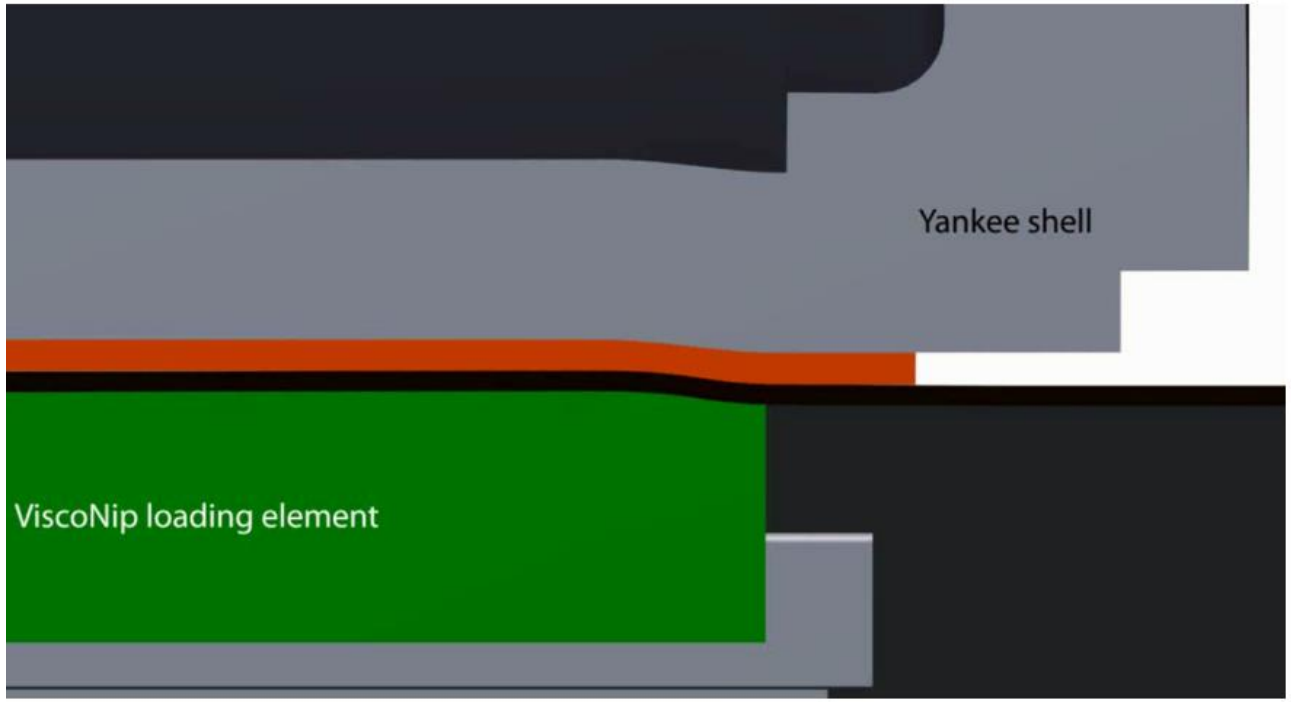
uniform transfer to Yankee

same coating conditions in CD giving even crepe → improved paper

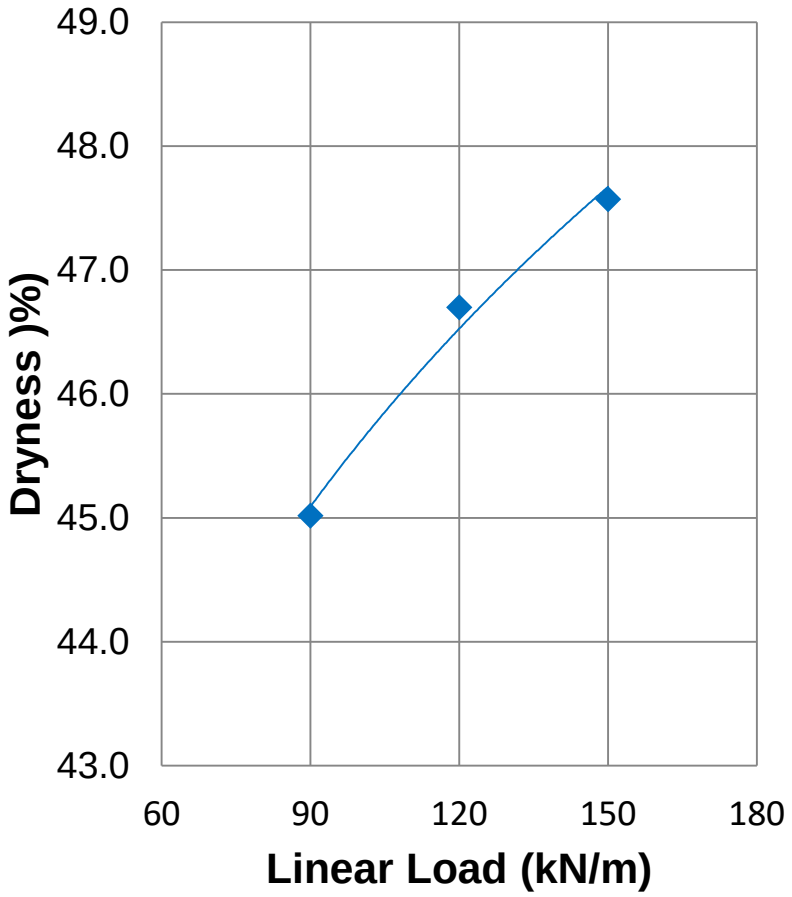


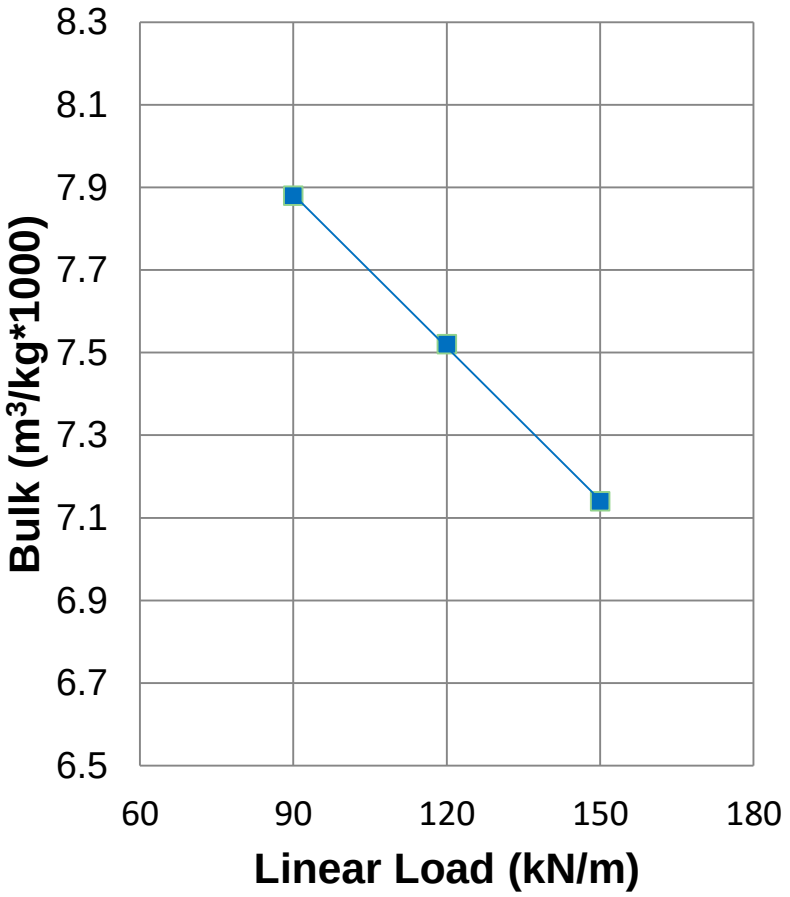
Valmet


Energy savings
Uniformity
Flexibility

14.5 gsm 1600 m/min, CR 19%

Press dryness and bulk

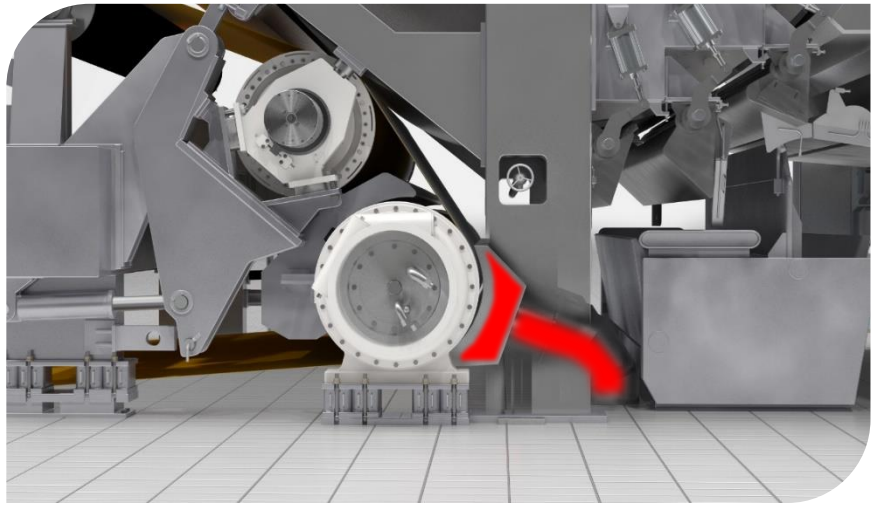




Advantage ReDry

Advantage ReDry

Exhaust heat from Yankee hood for dryness improvement

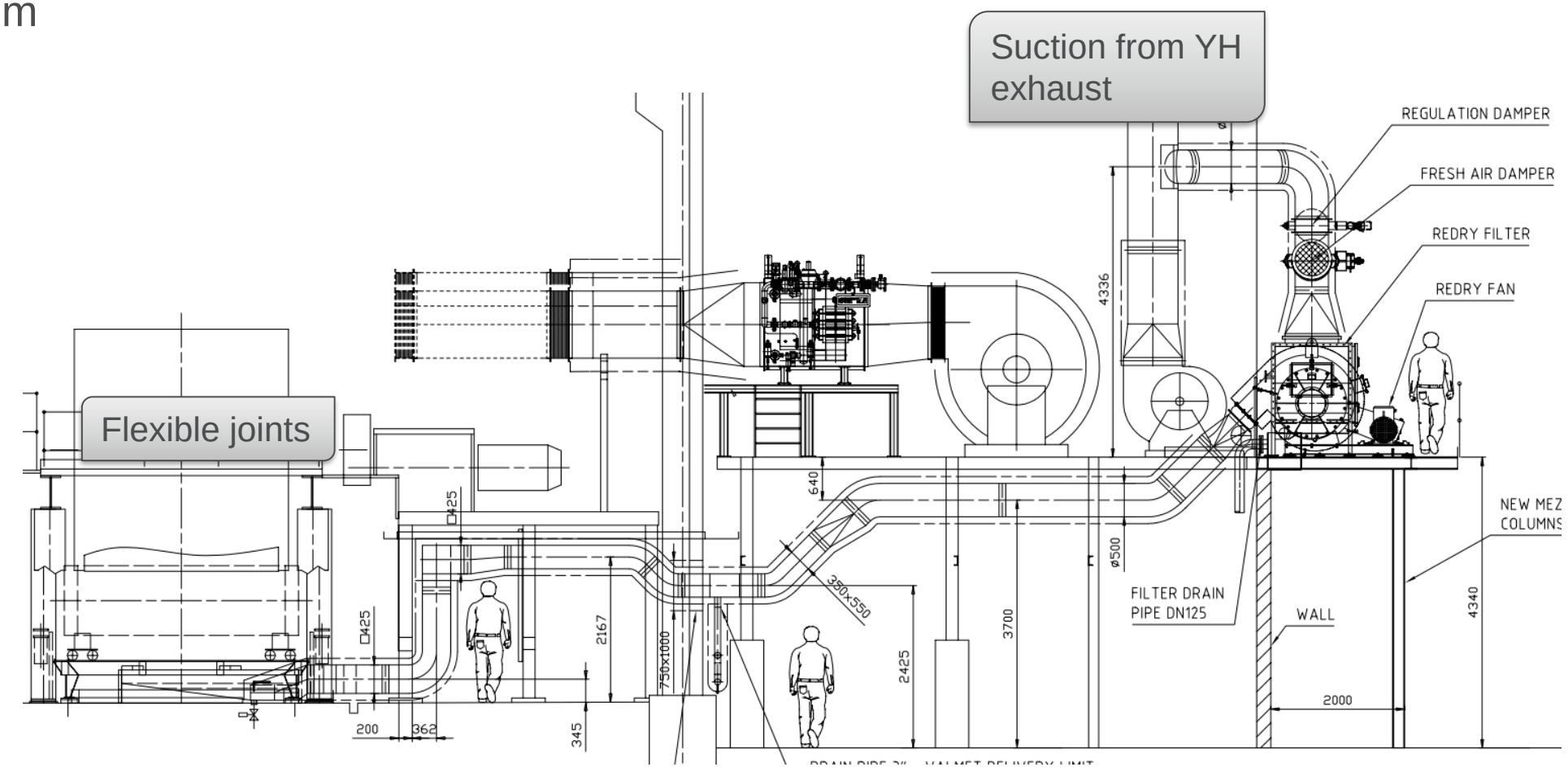


ReDry:

- Located at suction turning roll
- Same wrap angle as suction roll suction zone
- Supply air temperature 150 - 200°C
- Amount of airflow is same or less than suction roll airflow
- Supply air fan and air is taken from AAC exhaust air duct
- Equipped with retraction system

Advantage ReDry

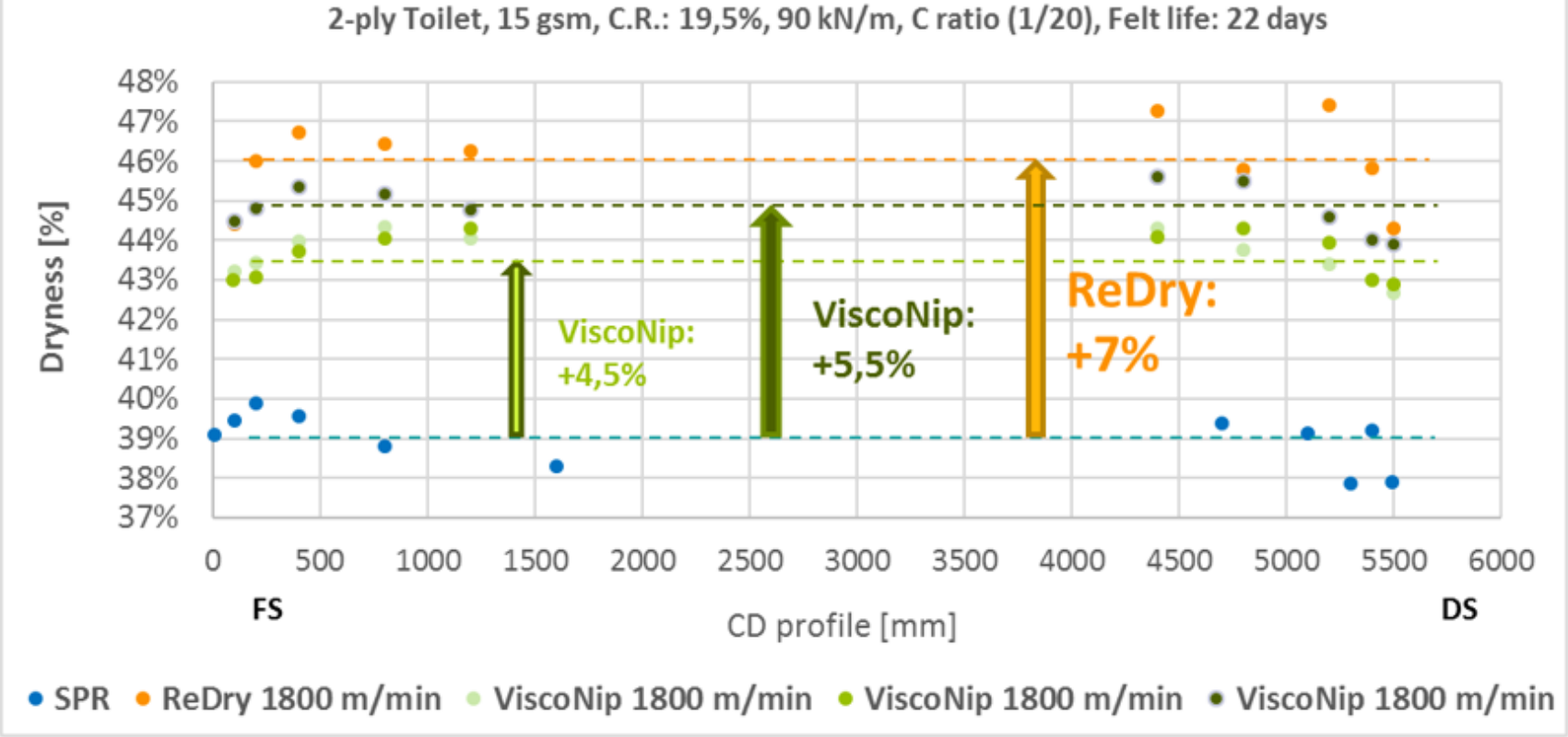
Air system



2-ply Toilet, 15 gsm CR 19,5%, 1800 m/min

Before rebuild SPR 90 kN/m; After rebuild ViscoNip 90 kN/m

With / Without ReDry



Advantage ReDry

Why should I install it?

By recovering part of the exhaust air, the dryness at the press increases up to 1.5% with the Advantage ReDry, with no interference on machine functionality.

+1.5% more dryness at the press

=

Gas energy saving - 15-20%

More drying capacity about + 6%

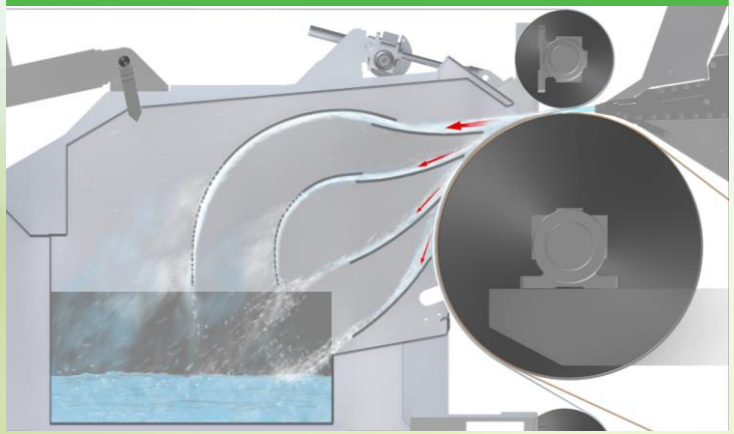
Higher quality, more bulk

Advantage ReTurne

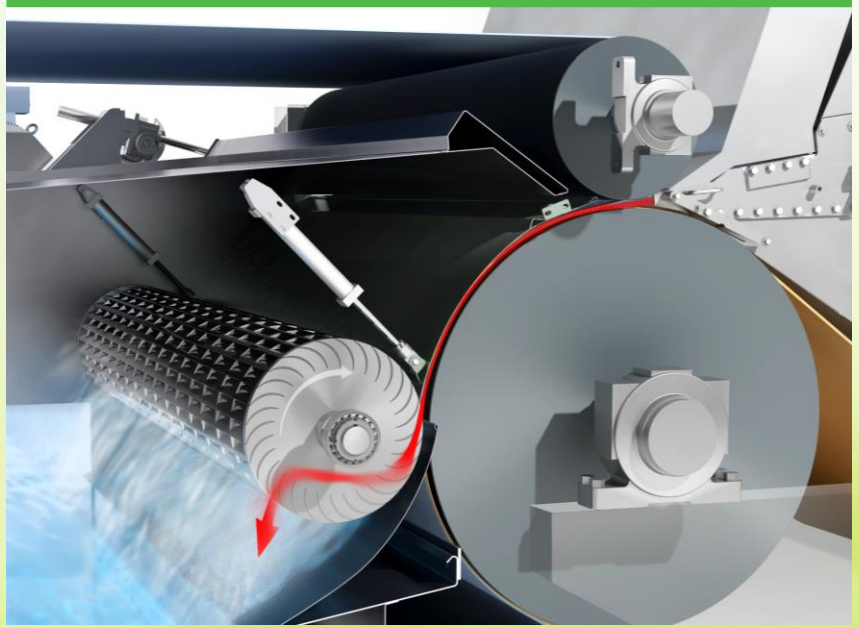
Recover 50% of headbox jet energy

Turbine located in the save-all inlet

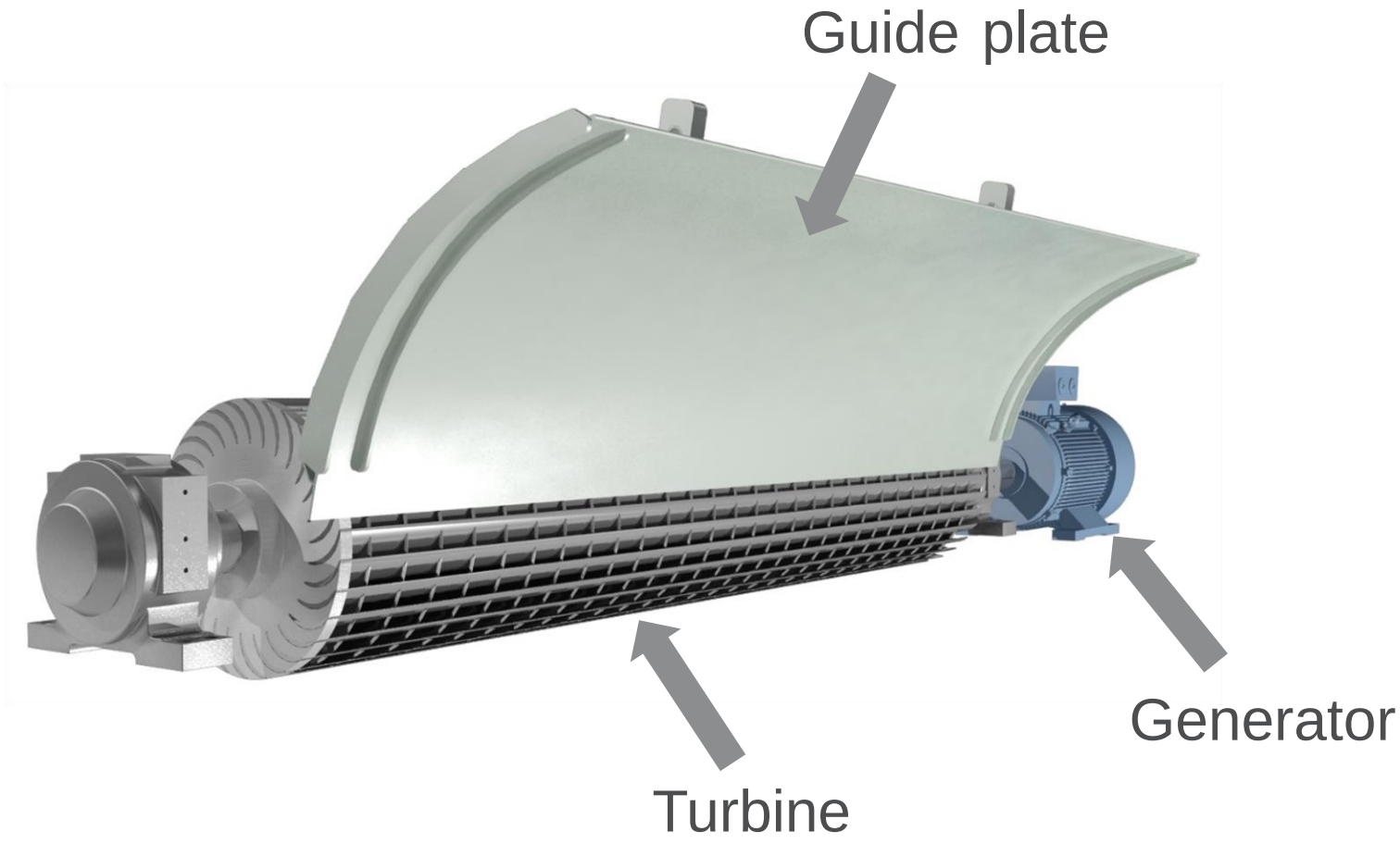
Traditional save-all inlet



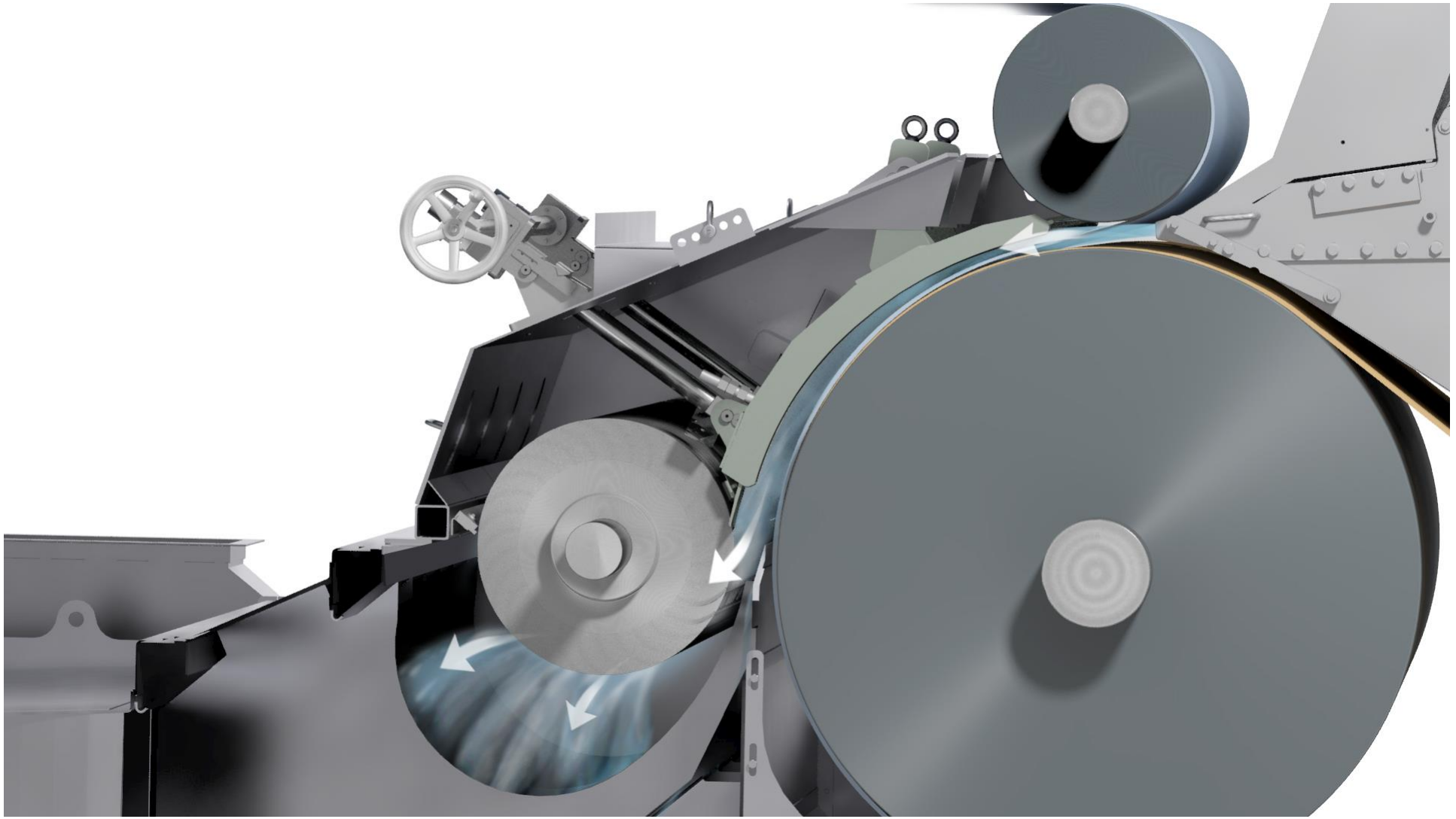
ReTurne save-all inlet with turbine



ReTurne major components

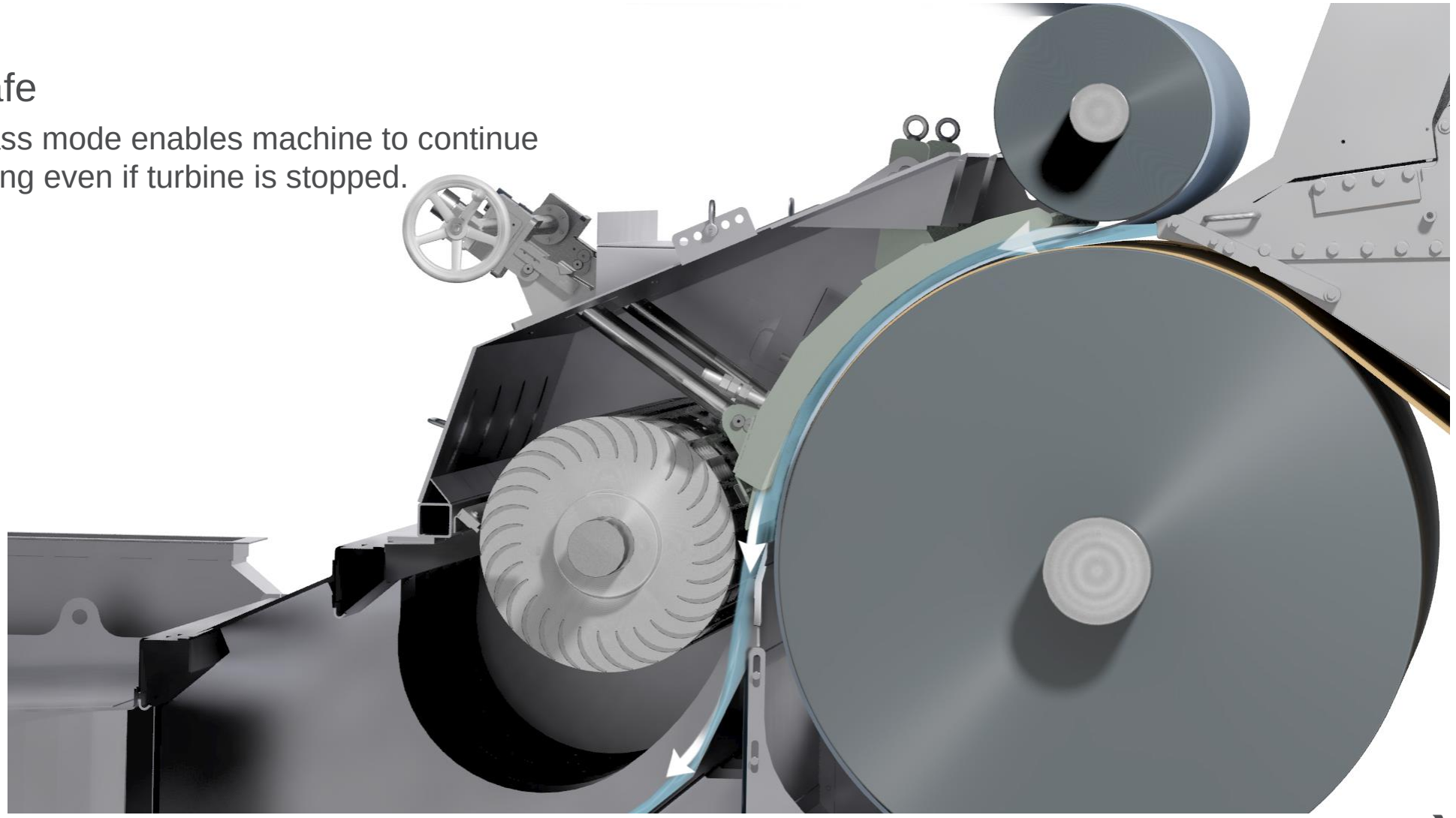


Recovery mode



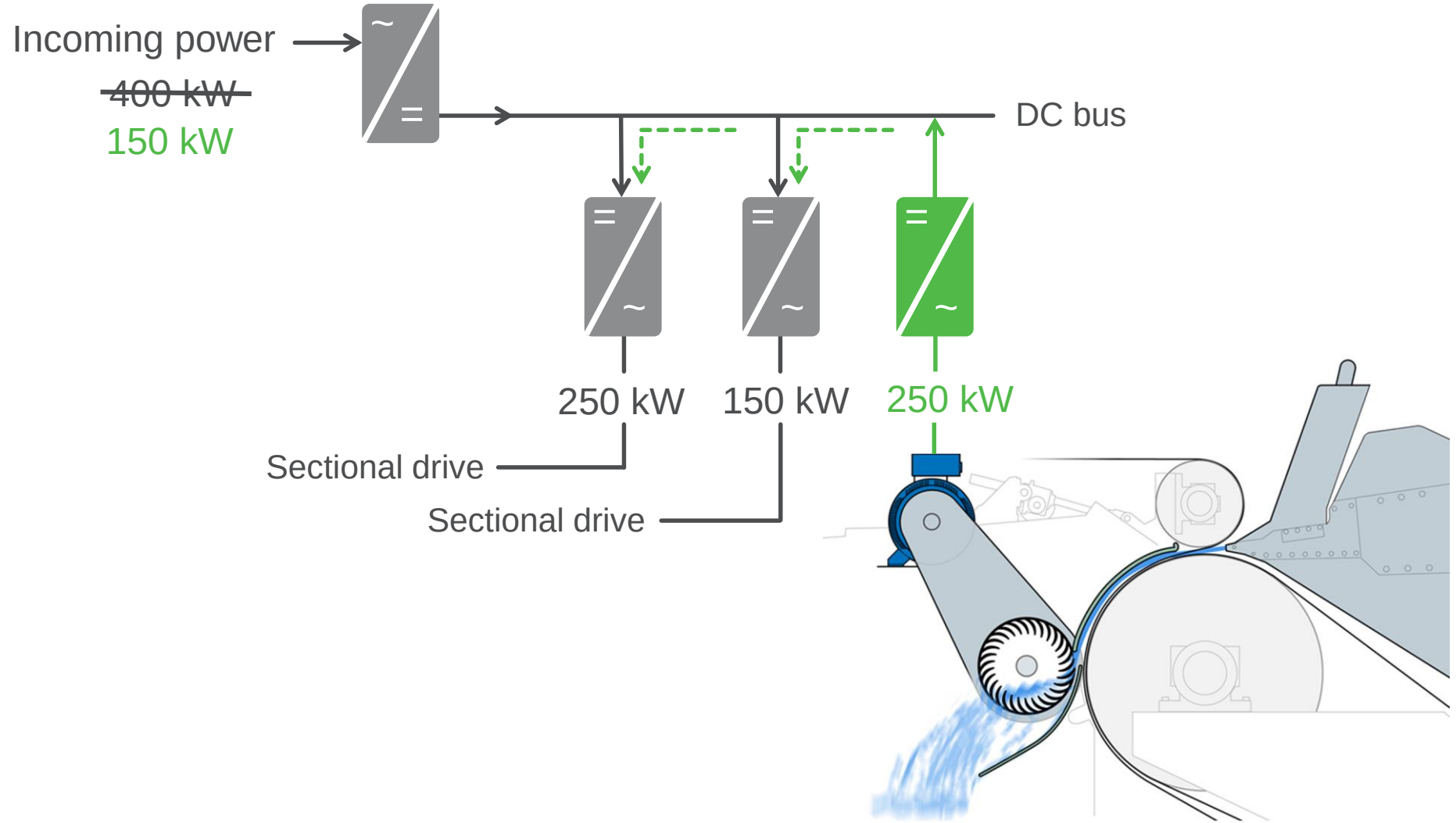
Bypass mode

- Fail safe
  - Bypass mode enables machine to continue running even if turbine is stopped.



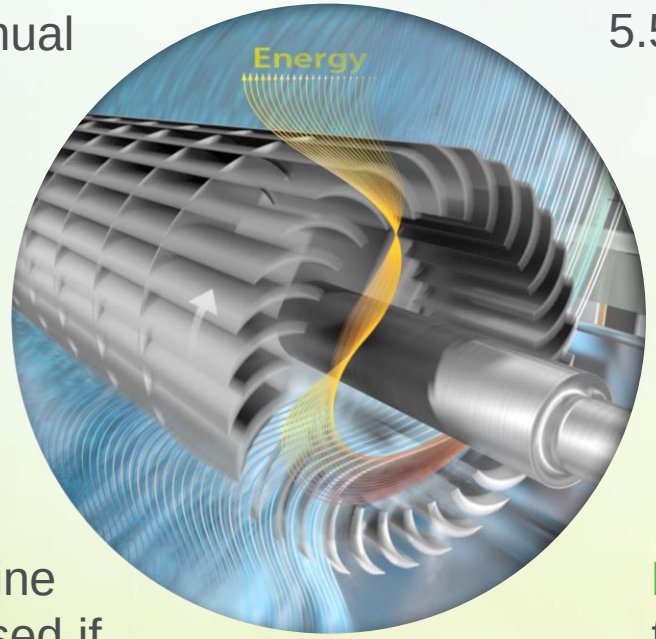
Return the electrical power

Electrical installation



ReTurne summary

Recover 50% of Headbox jet power – significant annual saving



Rebuilds and new installations up to 5.5 meter width

Fail safe – turbine could be bypassed if needed

No influence on tissue process and sheet properties