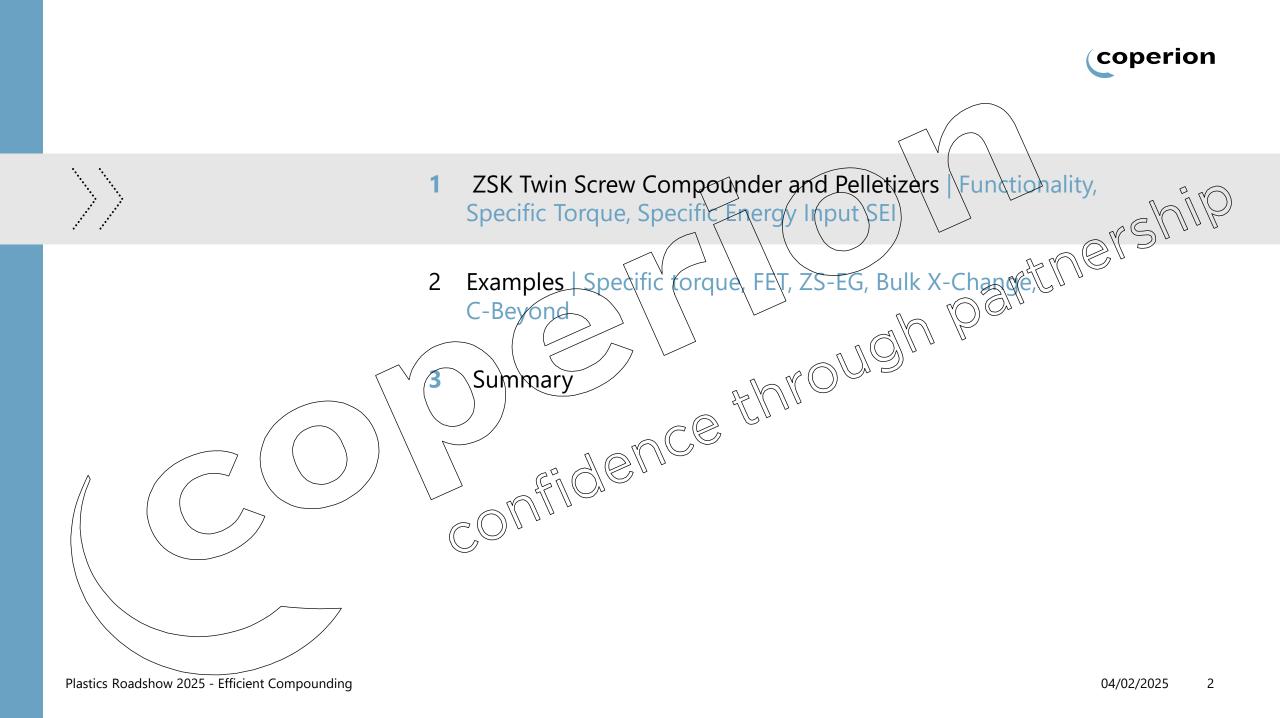
The future of Efficient Compounding Technology

New developments

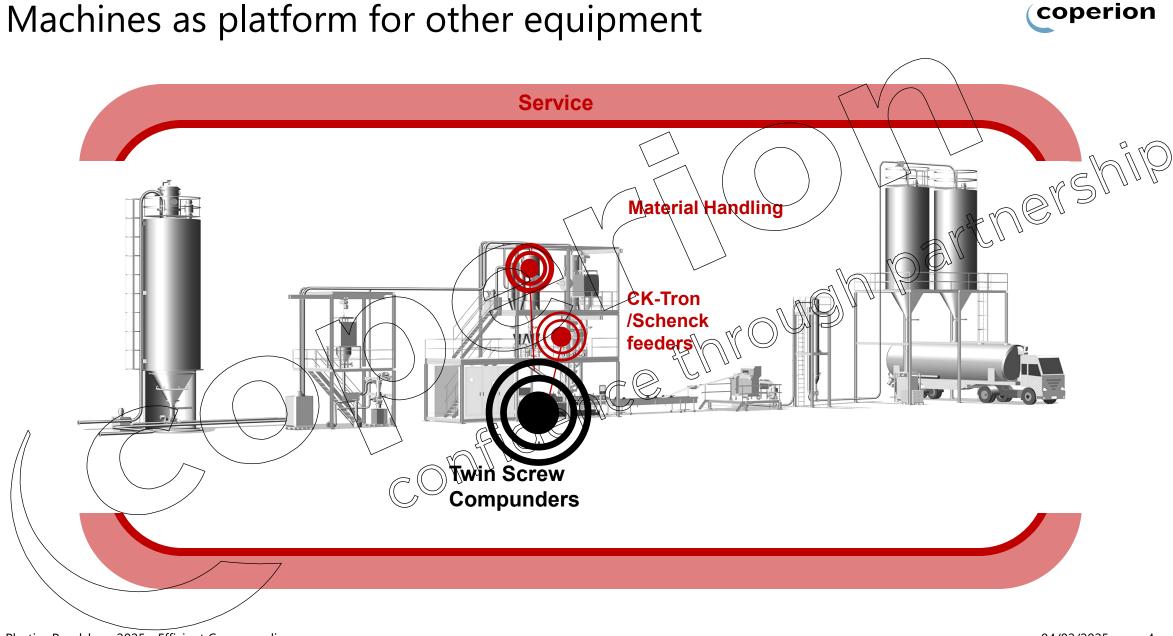
Zeynep Ekici I Process Technology Engineer I Coperion Weingarten



#### Product range







# Compounding tasks on Twin Screw Extruders



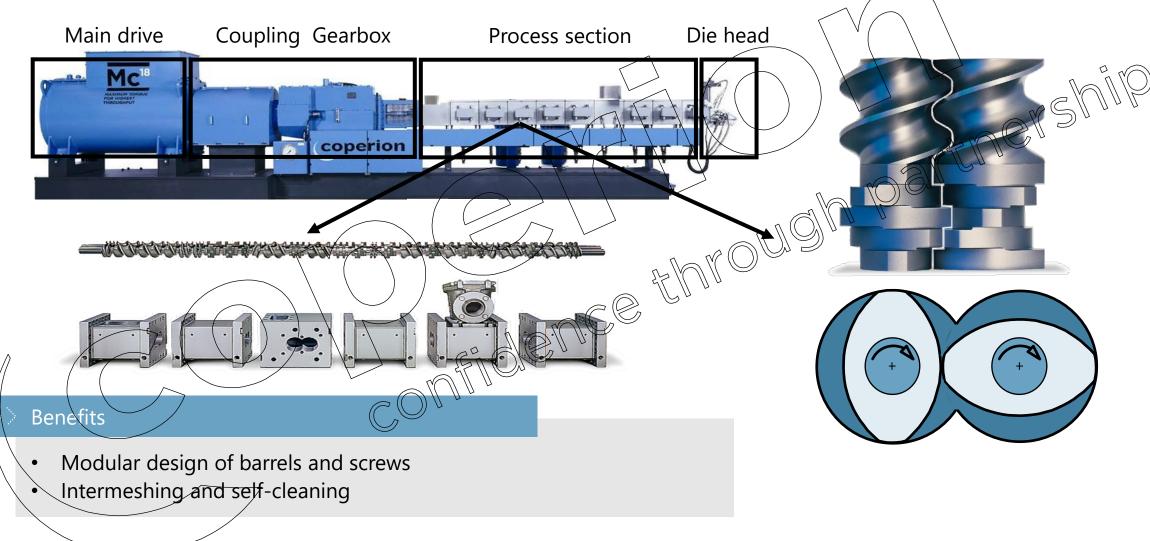
For high-quality end products: From single components to complete systems

#### **Target Markets**

- Engineering Plastics
- Plastics Recycling
- Virgin Polymer
- Masterbatch
- PVC/HFFR
- Bio Plastics
- Direct Extrusion
- Battery Separator Films
- Chemical Applications
- Powder Coating
- Adhesives
- Polyolefines
- Battery Masses

# The ZSK twin screw extruder

#### Modular design and => perfect fit to any process task

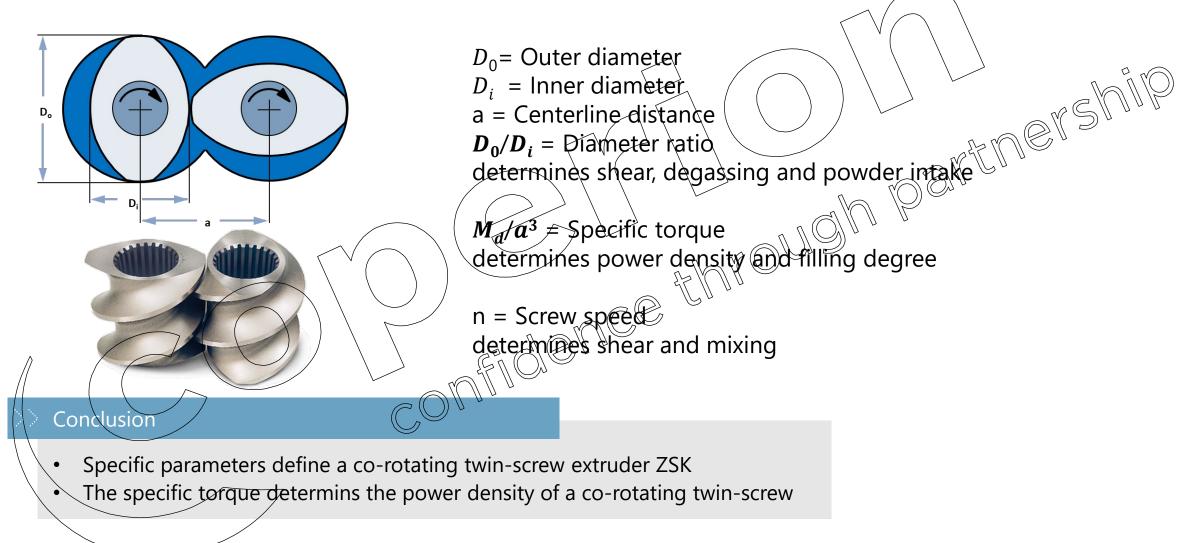


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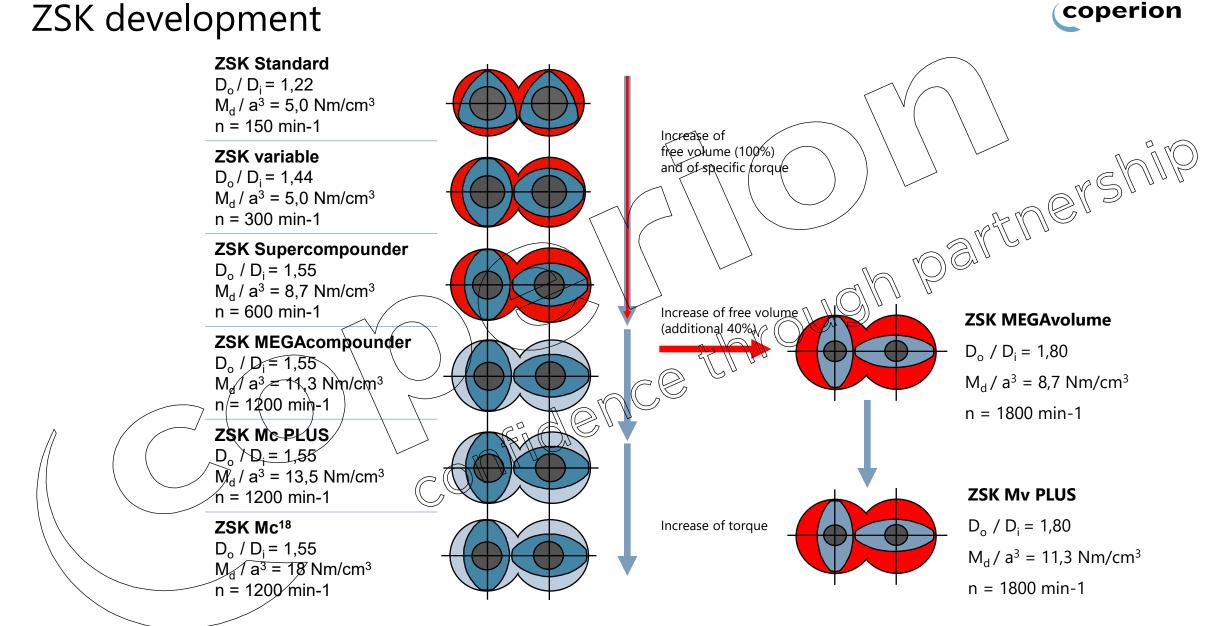
## ZSK development

Characteristic dimensions



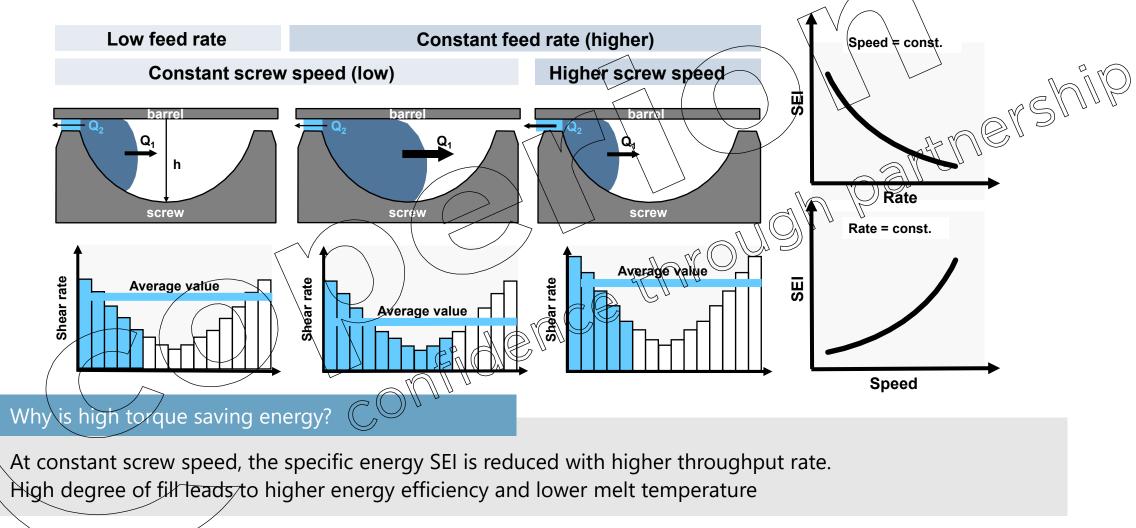
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#### **Process parameters**

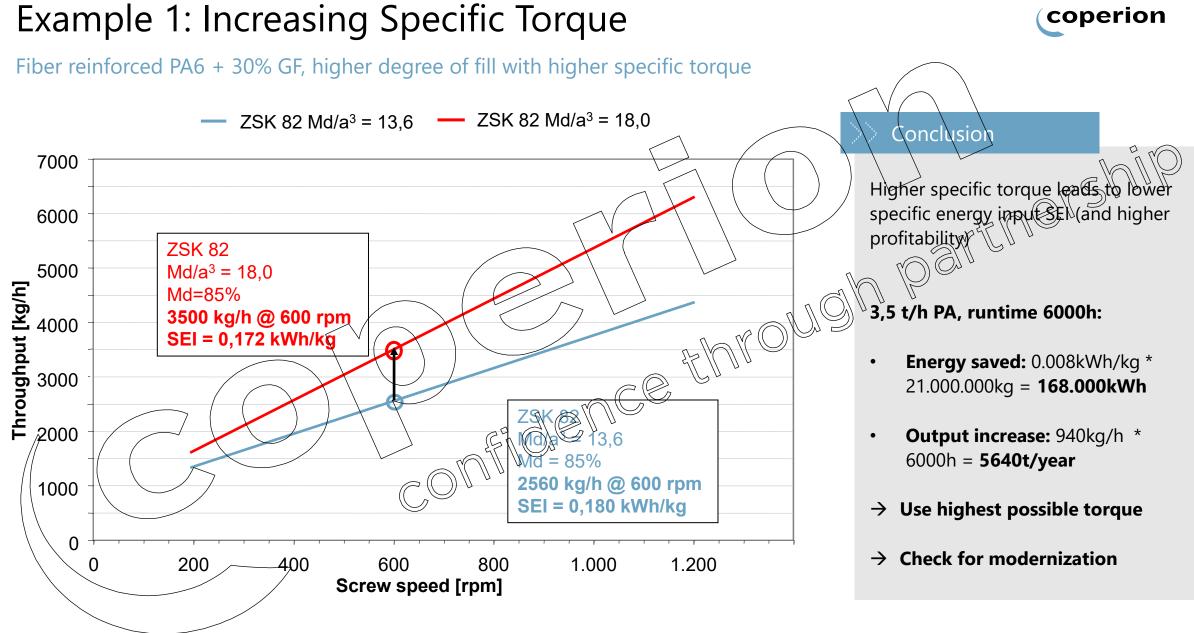
#### Specific energy (SEI): Influence of rate and screw speed



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## Example 2: Feed Enhancement Technology

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FET: Technology to increase the throughput of feed limited products

#### **Features:**

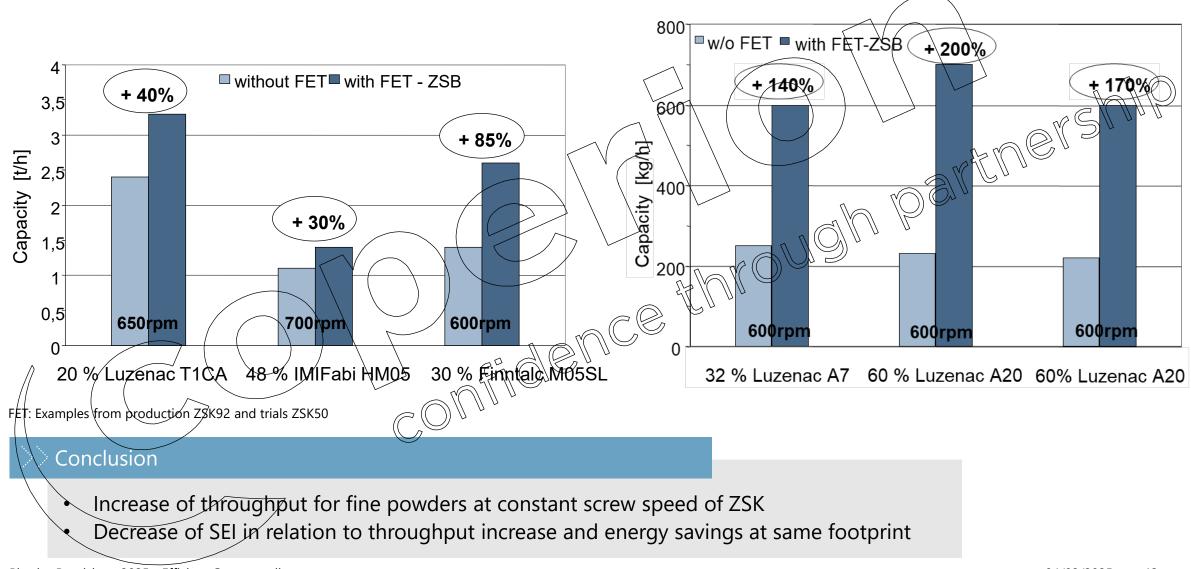
Solids conveying is improved by applying vacuum in the feed vacuum in

This wall section is realized by an insert with a filter membrane installed in an open barrel.

Already more than 150 ZSK equipped with FET

#### **Example 2: Feed Enhancement Technology**

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## Example 3: Side degassing ZS-EG

Side-Degassing ZS-EG for stable production



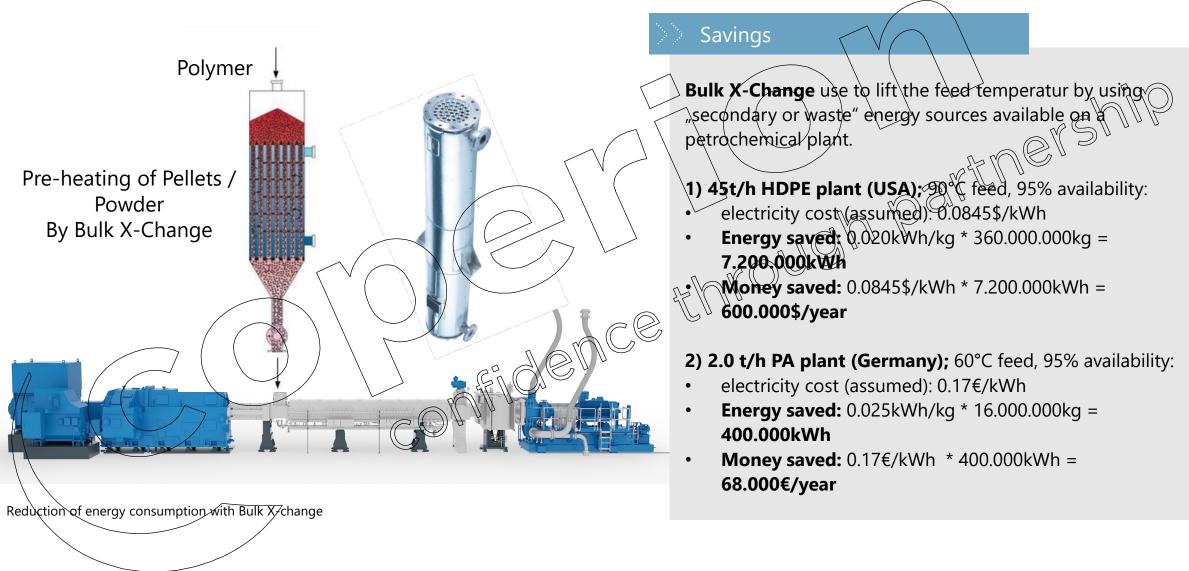
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Side-Degassing ZS-EG

- Safe degassing for higher degree of fill
- Higher throughput due to higher
- Higher output rates for processes with higher moisture content e.g. recycling or WPC
- Less downtime, less scrap because of higher production safety

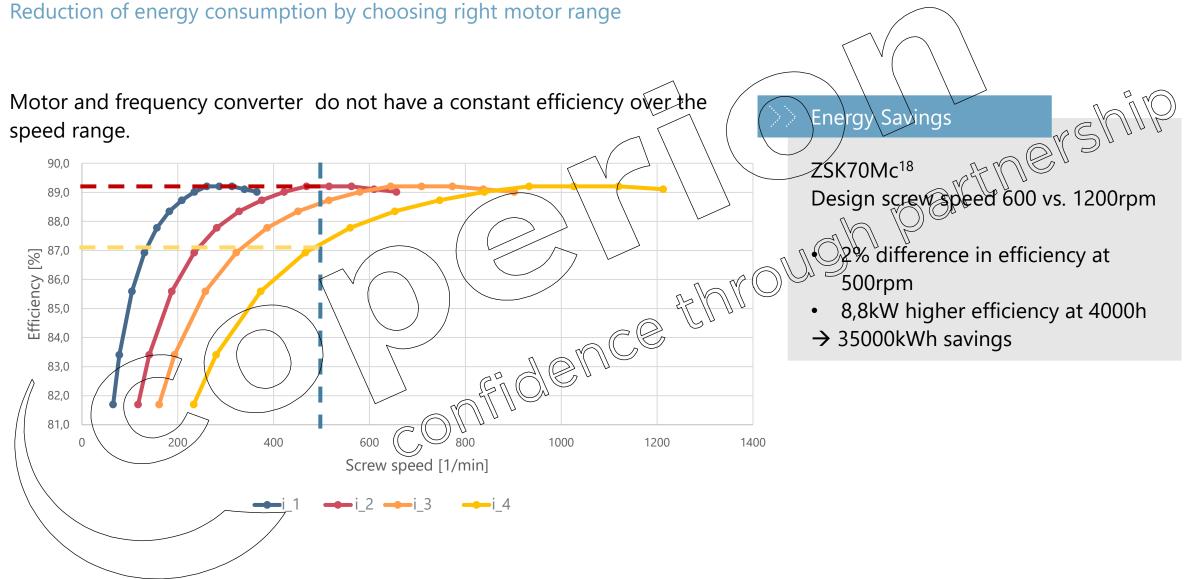
#### Example 4: Preheating of polymer

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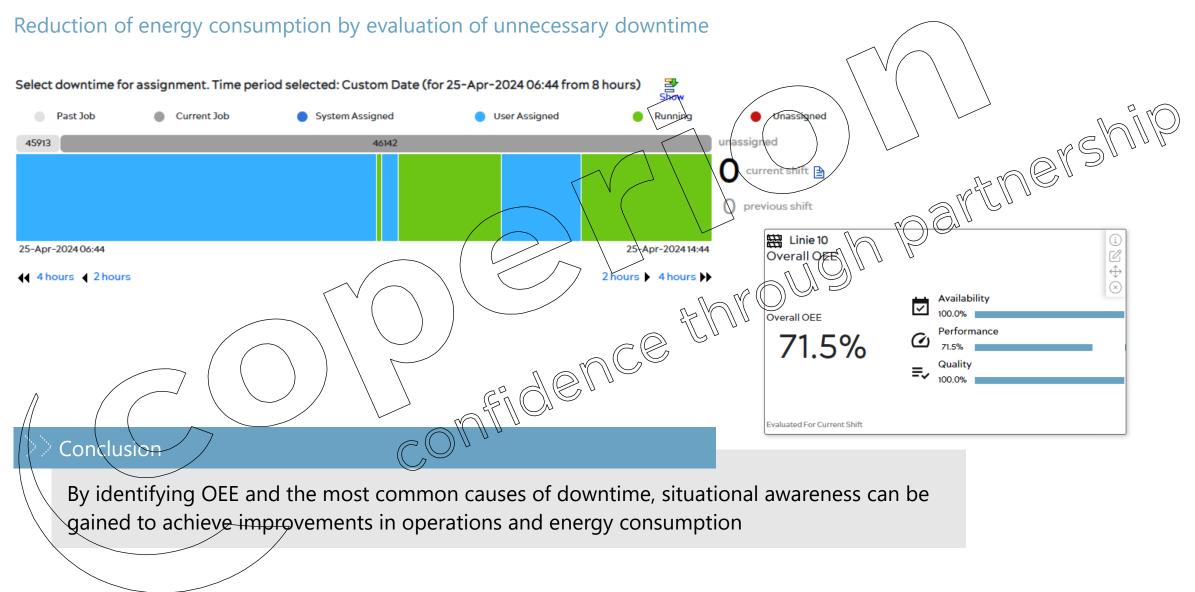
# Example 5: Motor efficiency

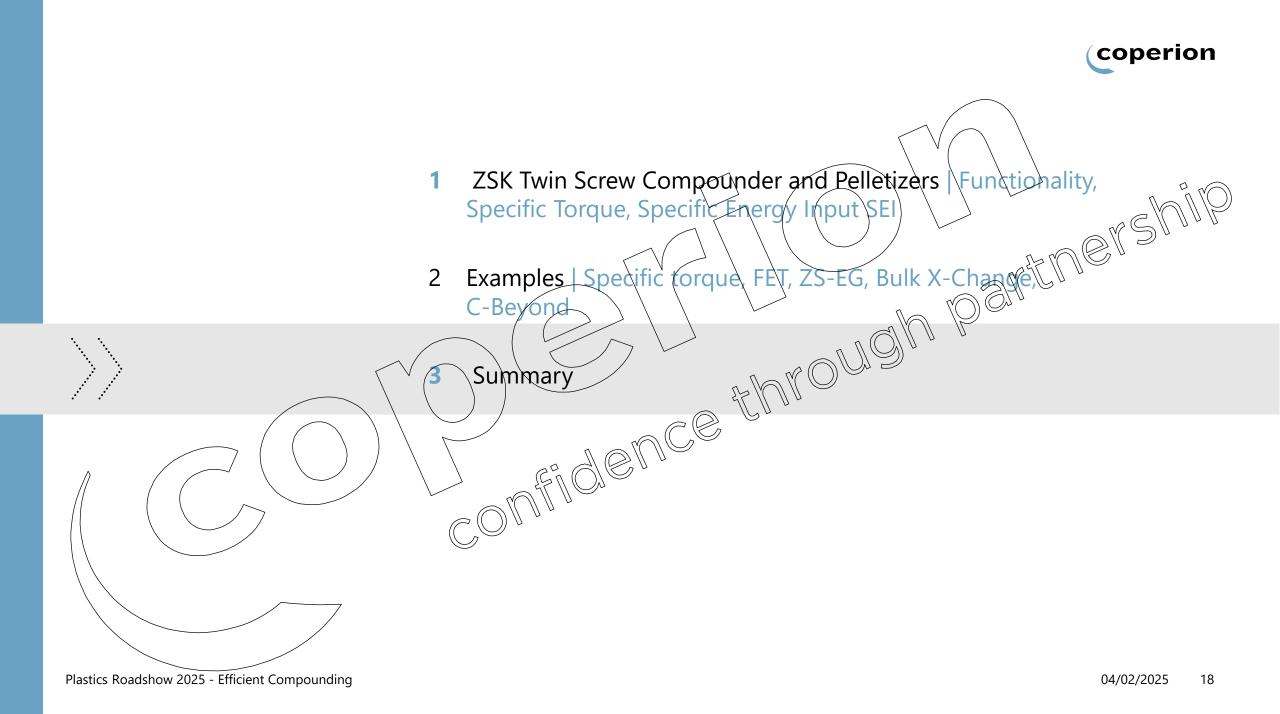




## Example 6: C-Beyond, Downtime-Tracking and OEE

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## Summary

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#### How to increase energy efficiency

- Using highest installed specific torque by using high degree of fill can save energy
- Feed Enhancement Technology FET can increase output and degree of fill for formulations with feed limited fine powders
  Side-degassing ZS-EG allows for higher degree of fill and to reduce scrap
  Pre-heating of material with Bulk X-change safes motor power and energy
  The right design of the motor can save energy

- C-beyond assist to determine downtime and increases awareness of energy
- Think about modernization by changing drive unit or adding features for increasing torque

Final Conclusio

Increasing energy efficiency is possible by using higher torque with several features, methods or combination of these. Additionally, also profitability can be increased!

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# Thank you very much for your attention.

You'rever, Chome to follow us.

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