

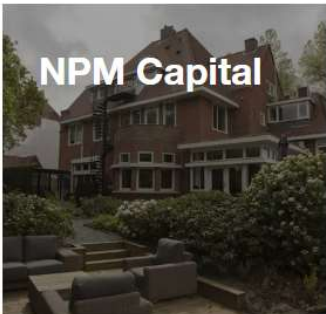
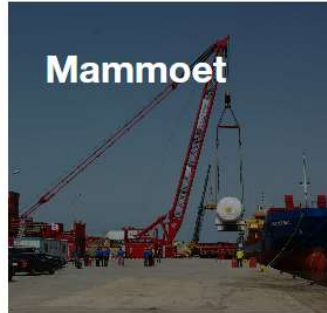


Erfaringer med måling av energiytelse

Harald Steffensen, Skretting AS

07.12.2023

Vår eier



Trouw nutrition

Trouw Nutrition is the global leader in innovative feed specialties, premixes and nutritional services for the animal nutrition industry. Trouw Nutrition provides species-specific nutritional solutions consisting of feed concepts, products and nutritional know-how.



Skretting

Skretting is the world leader in the manufacture and supply of aquaculture feeds, making it an essential link in the feed-to-food chain. Skretting applies its knowledge of ingredients and the nutritional needs of fish and shrimp to develop innovations that achieve optimum nutritional value, sustainable production and economic performance.



A global company

SKRETTING

a Nutreco company



3500 employees

2 million tonnes of feed
per year

Production in **19 countries**

Feeds for **over 60 species**
of fish & shrimp



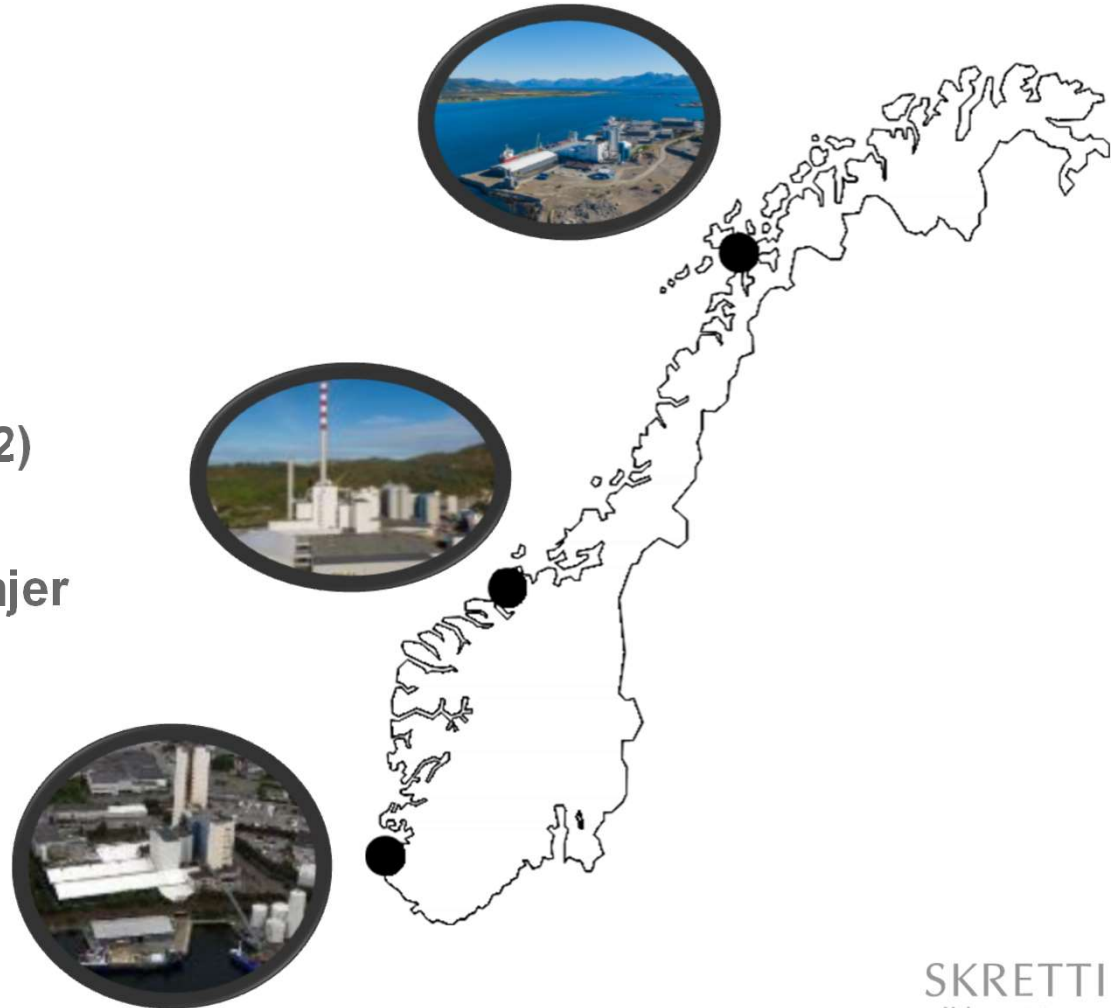
SKRETTING

a Nutreco company

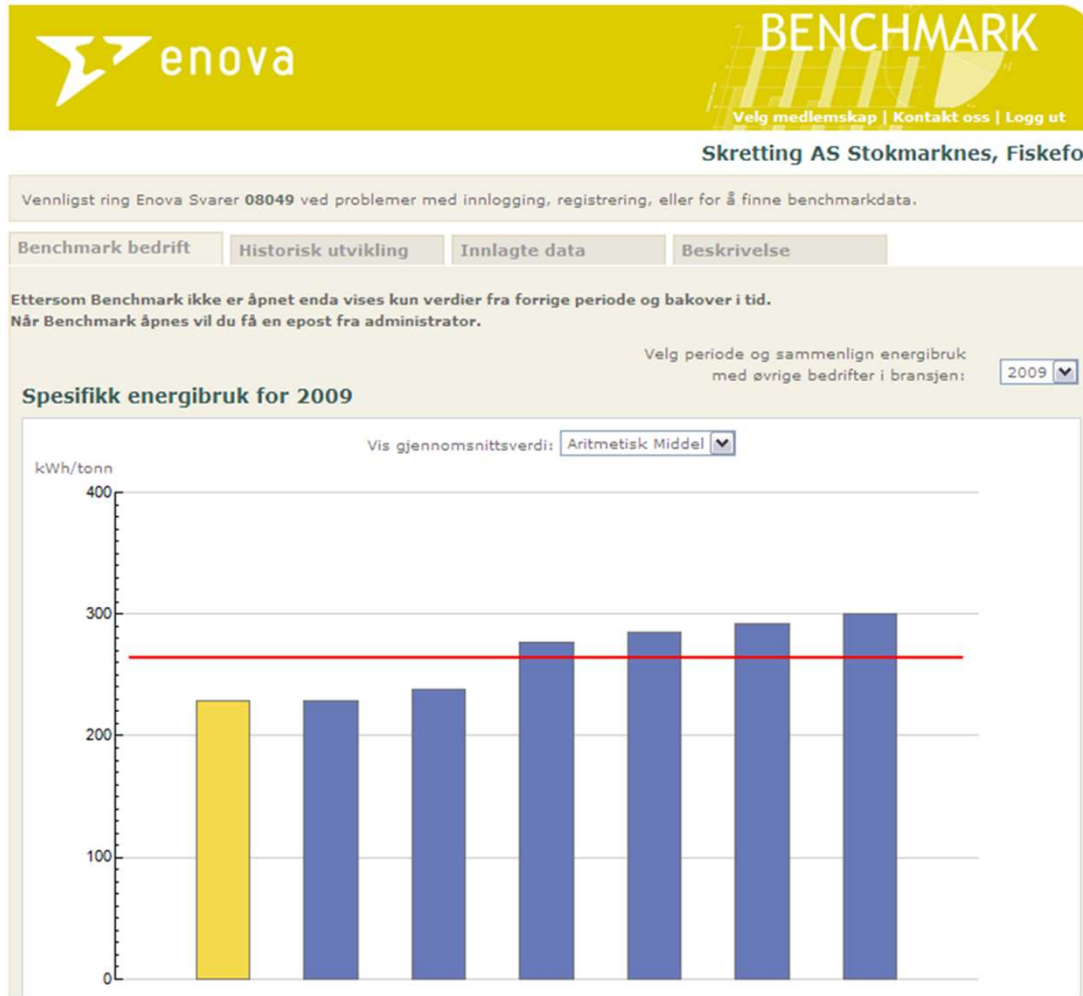
Skretting Norge

En verdensledende produsent av fôr til oppdrettsnæringen

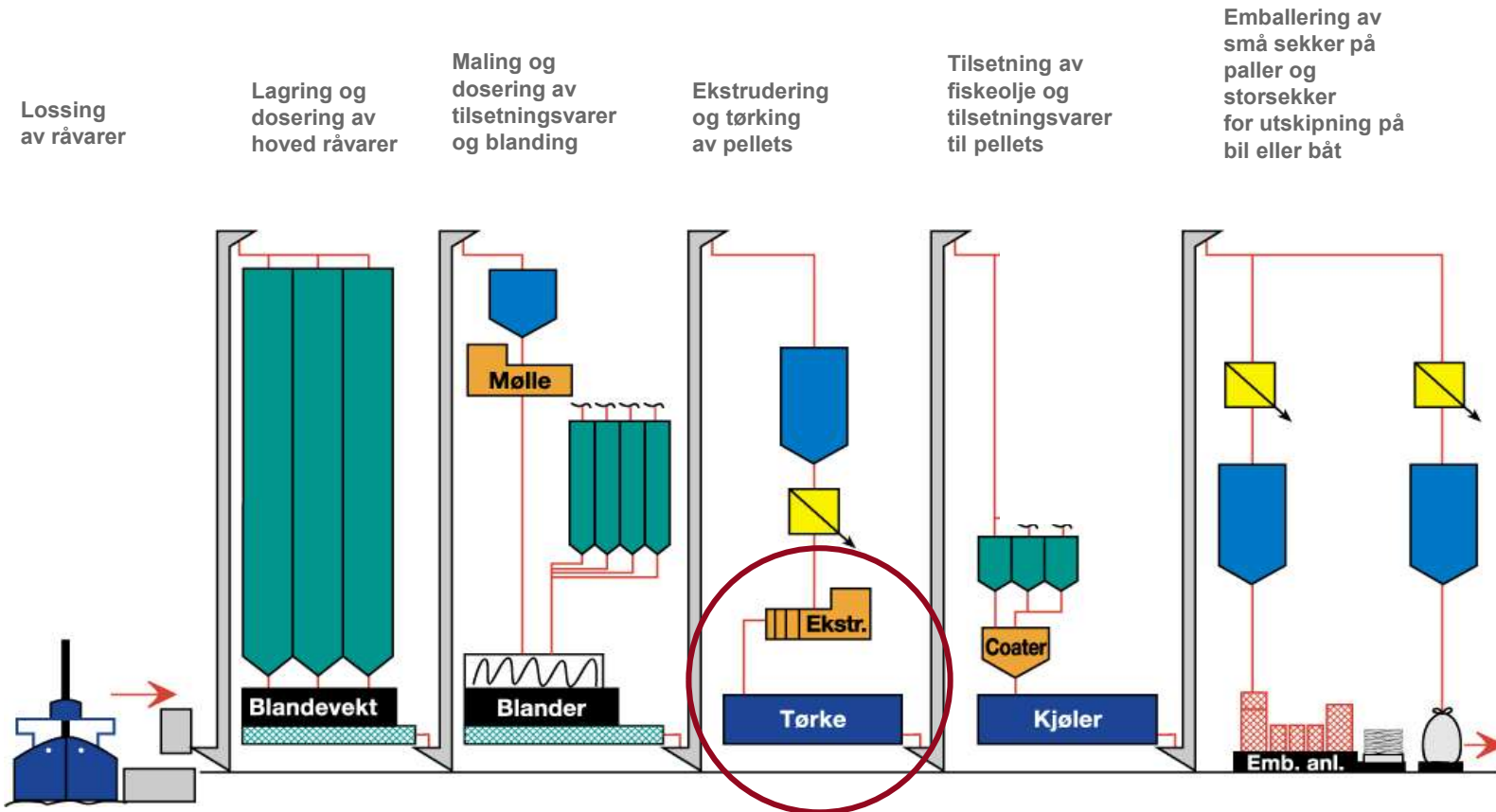
- **Grunnlagt: 1899**
- **Hovedkontor: Stavanger**
- **Ansatte: 300**
- **Produksjon: 588 000 tonn (2022)**
- **Omsetning: 10,5 mrd kr (2022)**
- **3 fabrikker og 7 produksjonslinjer**
 - **Stokmarknes – 35 %**
 - **Averøy – 47 %**
 - **Stavanger – 18 %**



Status energi effektivitet 2009 (Oppstart energieffektiviseringarbeid)



Produksjonsprosessen

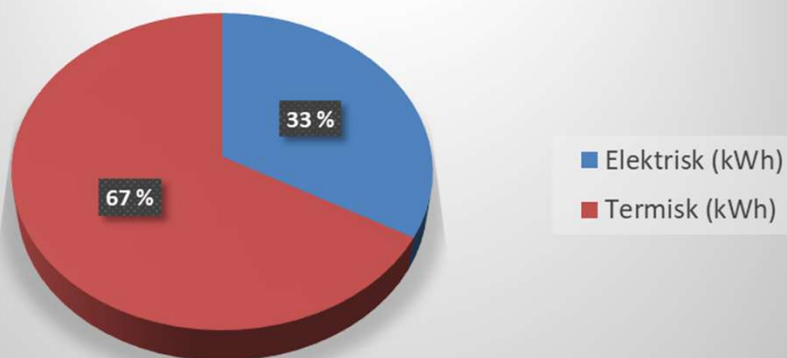


75 – 80 %

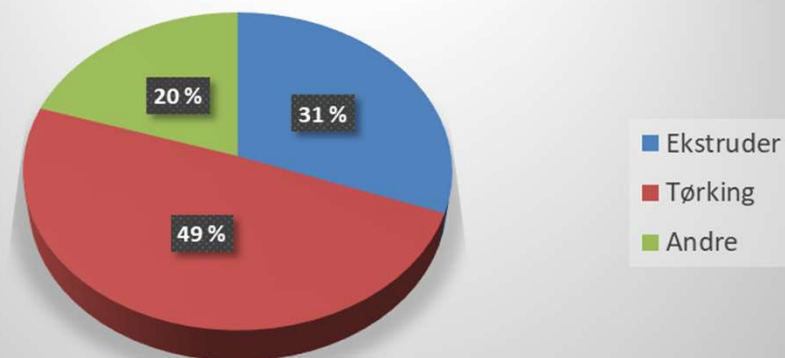


Eksempel på energifordeling innen fiskefôr

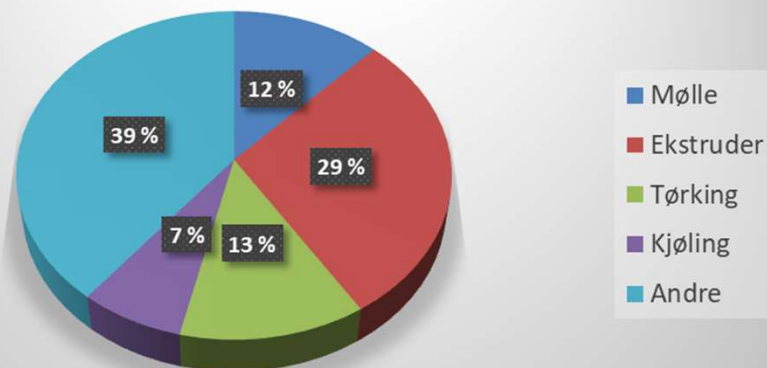
Averøy



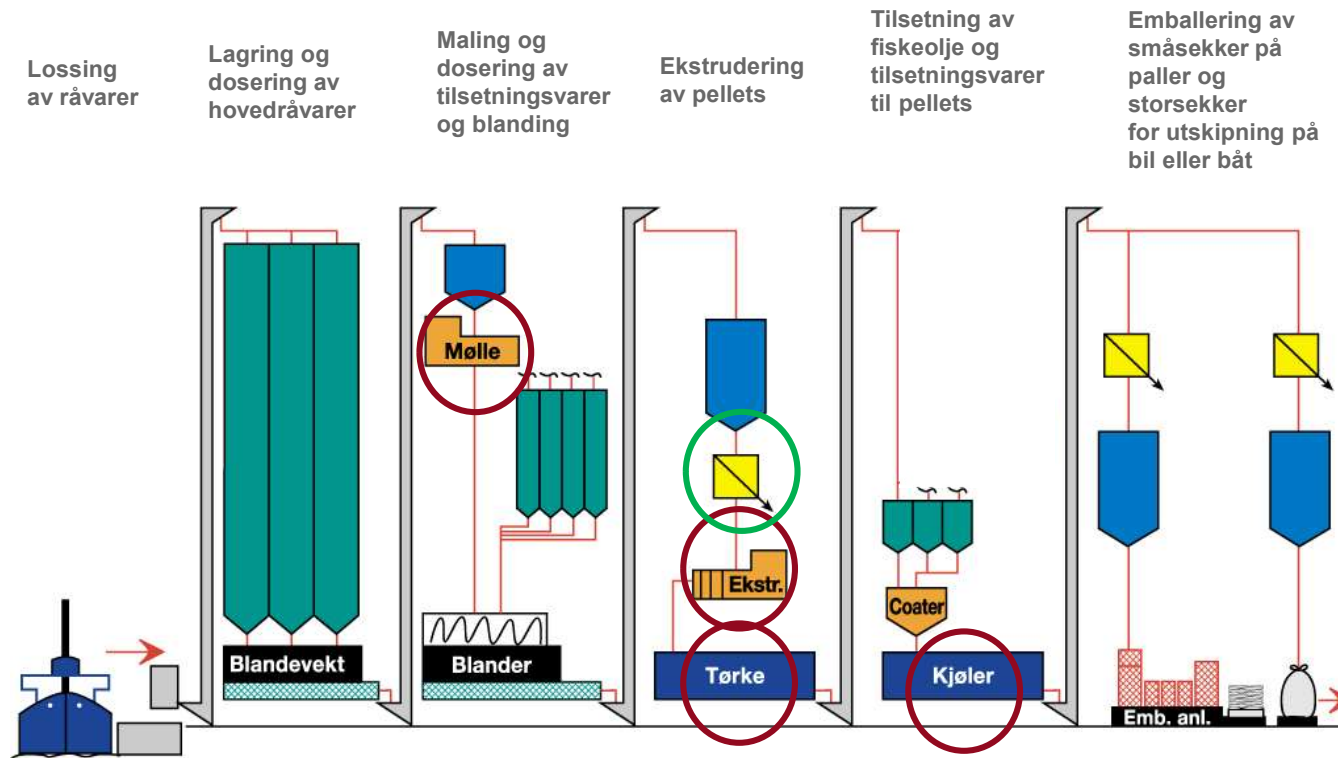
Averøy. Energifordeling termisk



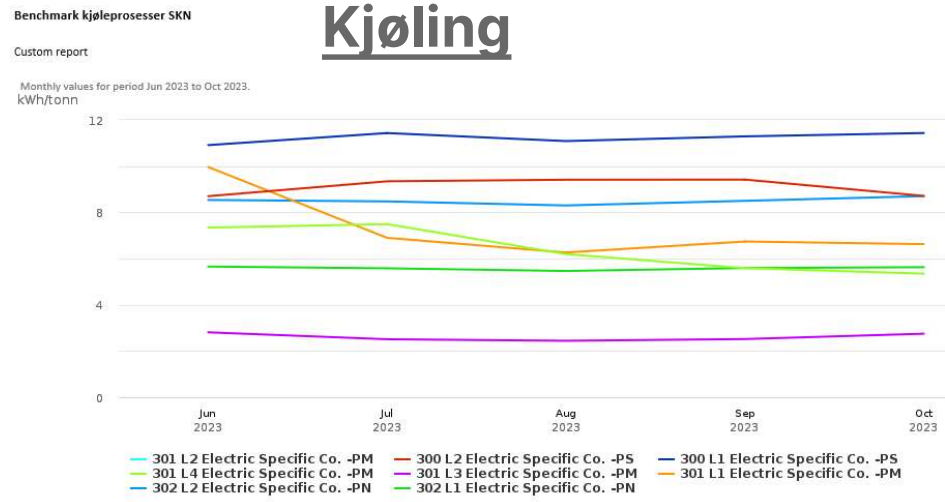
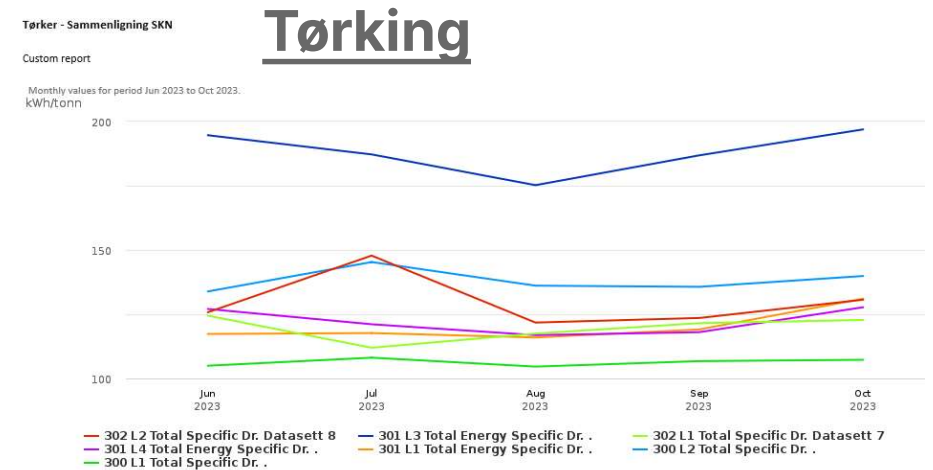
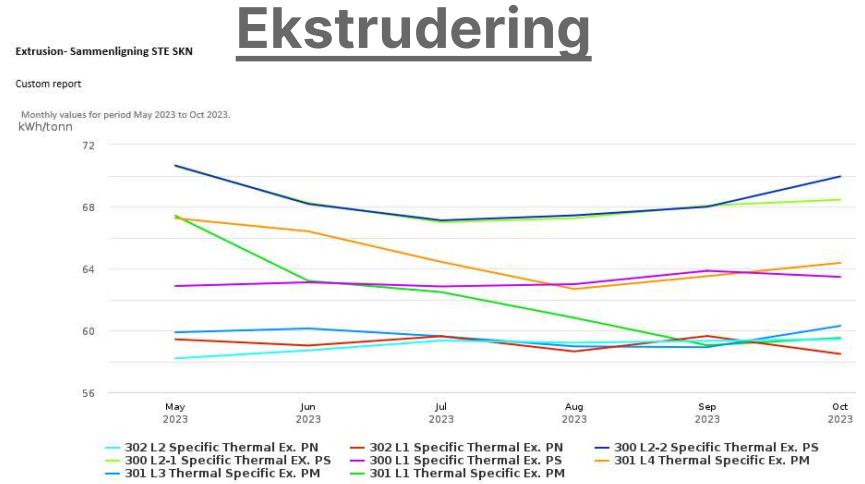
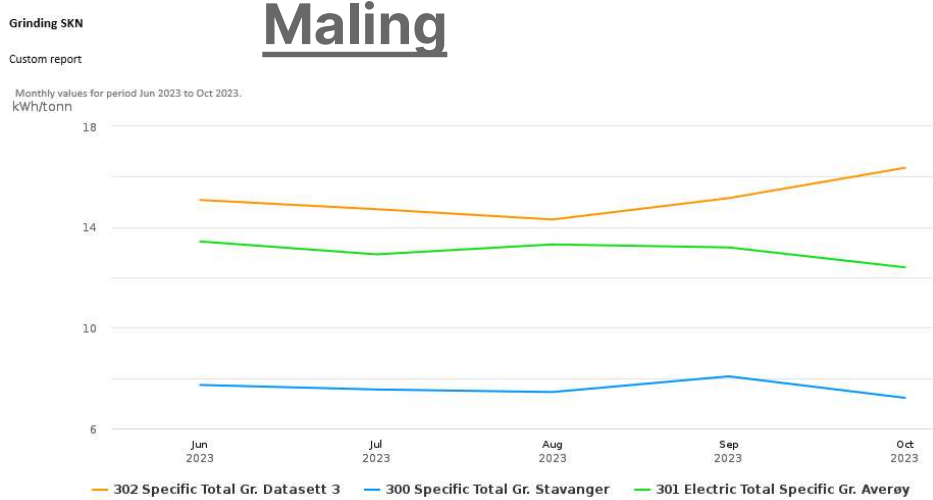
Averøy. Energifordeling elektrisk



Energiytelsesindikatorer (Kpi'er)



Eksempel på måling av energiytelses (kwh/tonn)

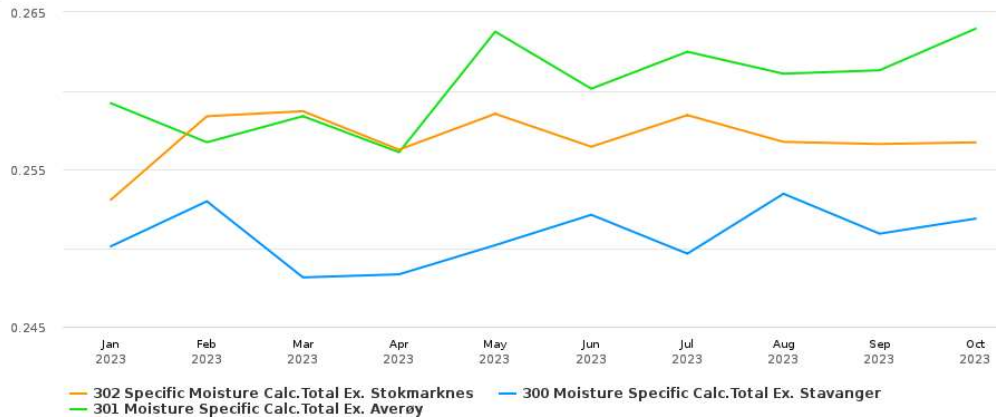


Vann i produkt inn og ut av tørkeprosess - % vanninnhold

Specific Moisture SKN (M3/ton)

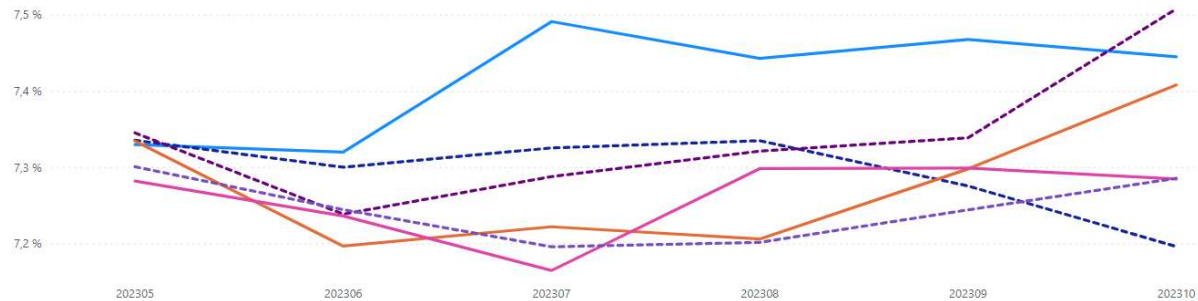
Custom report

Monthly values for period Jan 2023 to Oct 2023.
M3/ton



Finished product measured moisture (%)

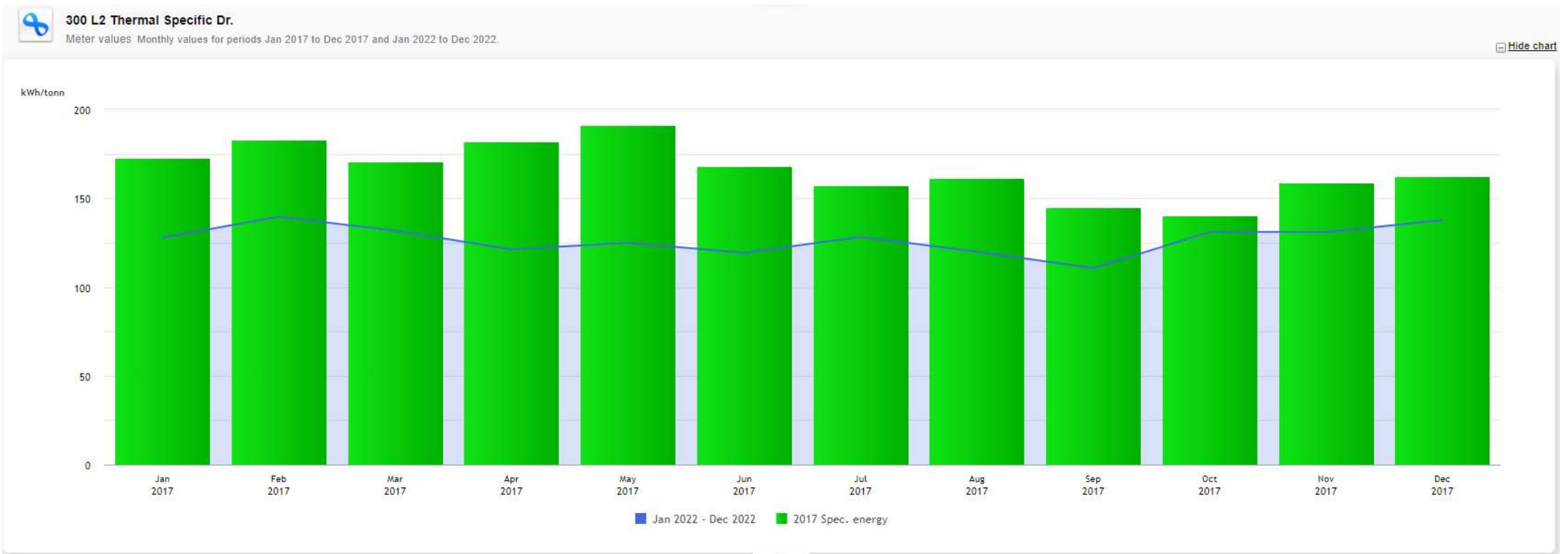
PM Moisture (%) PM Moisture target (%) PS Moisture (%) PS Moisture target (%) PN Moisture (%) PN Moisture target (%)



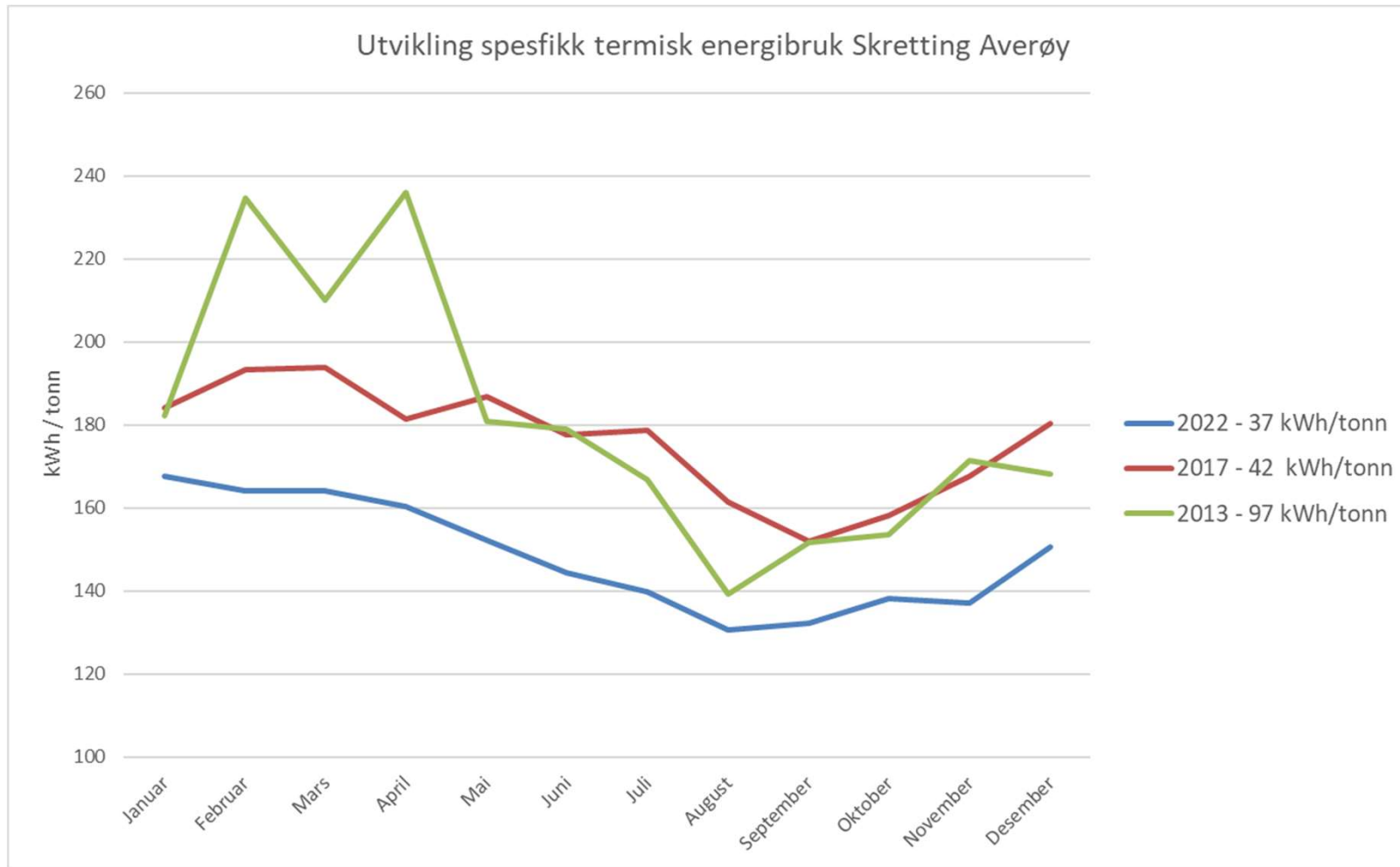
Finished product measured moisture diff from target(%)

Averøy Stavanger Stokmarknes

Ytelsesindikatorer dokumenterer forbedringer

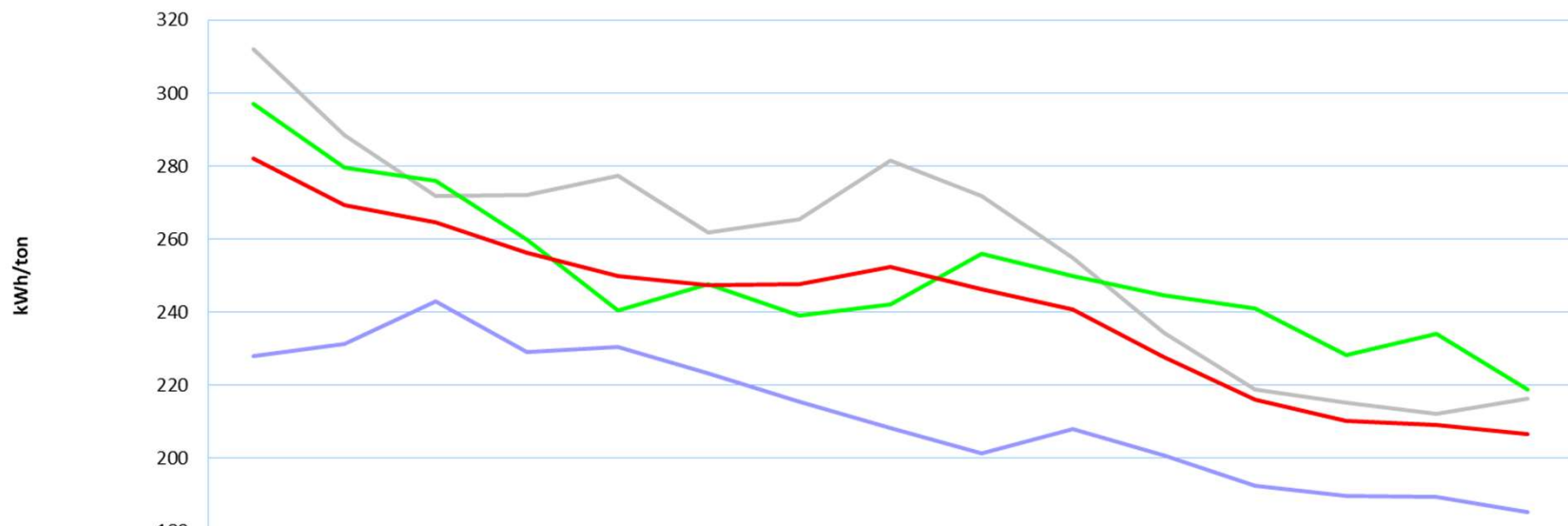


Måling av energiytelse har bidratt til bedre prosesskontroll



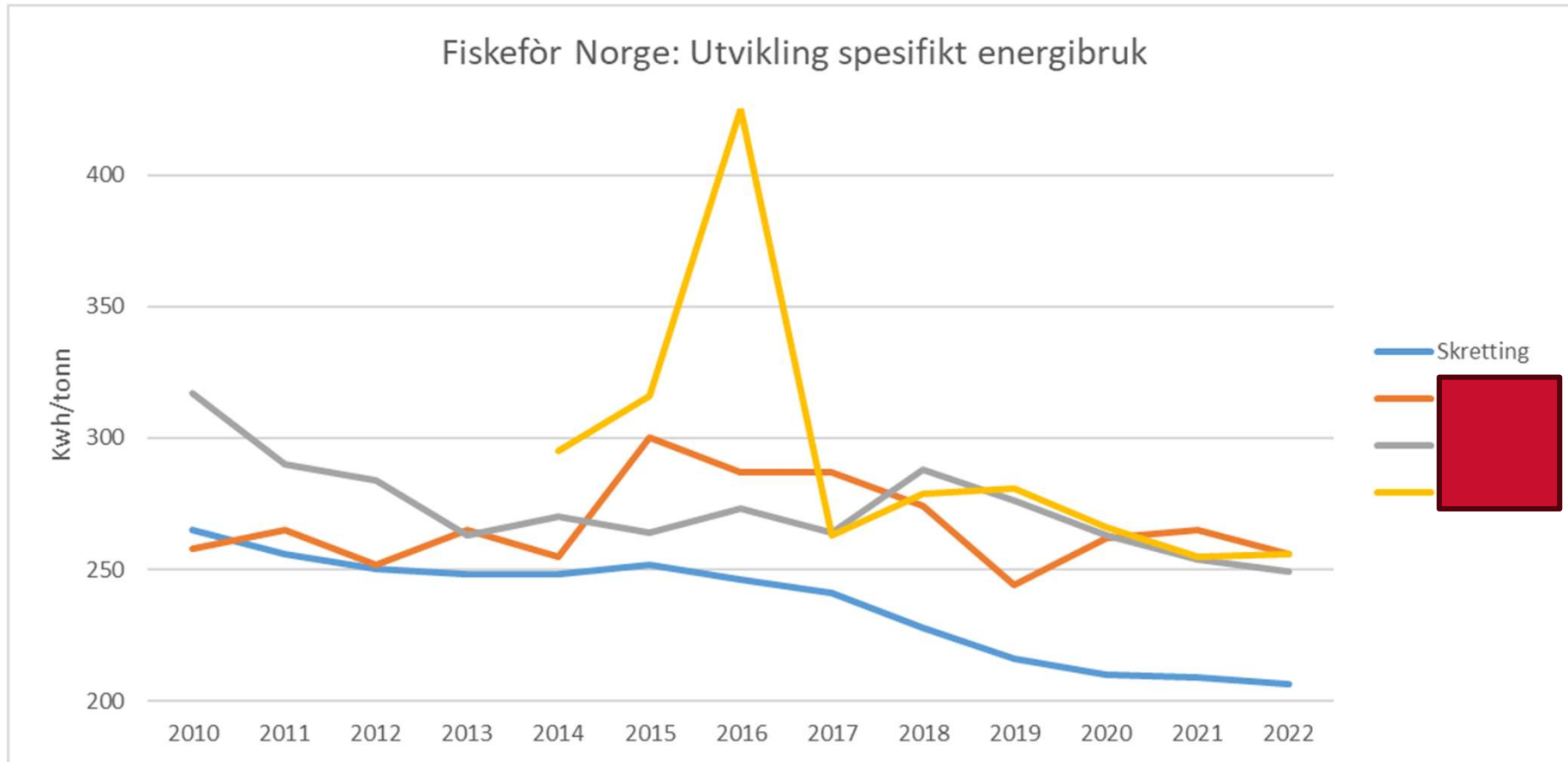
Resultater

Utvikling spesifikt energiforbruk kwh/tonn



	2008 reference year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
— Stokmarknes	228	231	243	229	230	223	216	208	201	208	201	193	190	190	185
— Averøy	312	289	272	272	277	262	265	282	272	255	234	219	215	212	216
— Stavanger	297	280	276	260	240	248	239	242	256	250	245	241	228	234	219
— Skretting Norge	282	269	265	256	250	248	248	252	246	241	228	216	210	209	207

Bransjesammenligning



Vår erfaring med energiytelsesindikatorer

”det vi ikke måler kan vi heller ikke forbedre”

Takk for oppmerksomhet !

