

Biodrivstoff i Norden – Premisser for Utvikling av en Nordisk Verdikjede

Webseminar: Norsk skogsektor mot 20150: Gir biodrivstoff nye muligheter?

6 Mai 2020

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**Handelshøyskolen BI
BioNext prosjektet**

Ser enorme muligheter for biodrivstoff- industri i Norge (NRK Trøndelag 2014)

Det ligger et enormt potensial i å bygge opp en stor, klimavennlig og internasjonalt rettet industri for biodrivstoff fra norsk tømmer, mener direktør Erik Lahnstein i Norsk Skogeierforbund. Nå ber han politikerne om å tilrettelegge for utviklingen.

<https://www.nrk.no/trondelag/ser-enorme-muligheter-for-biodrivstoff-industri-i-norge-1.12041233>



Vanskelig å klare begge deler samtidig

98,9 % Import
1,1% Norsk

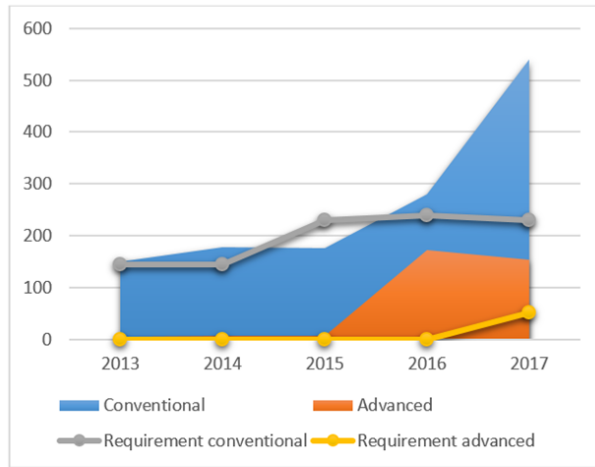
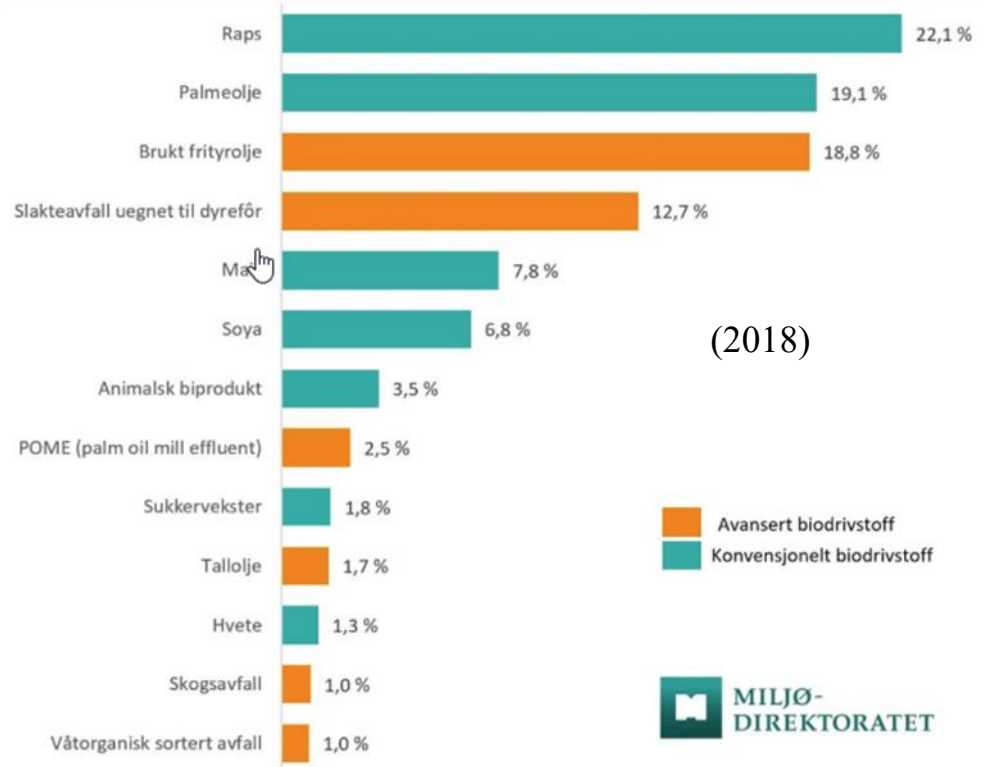
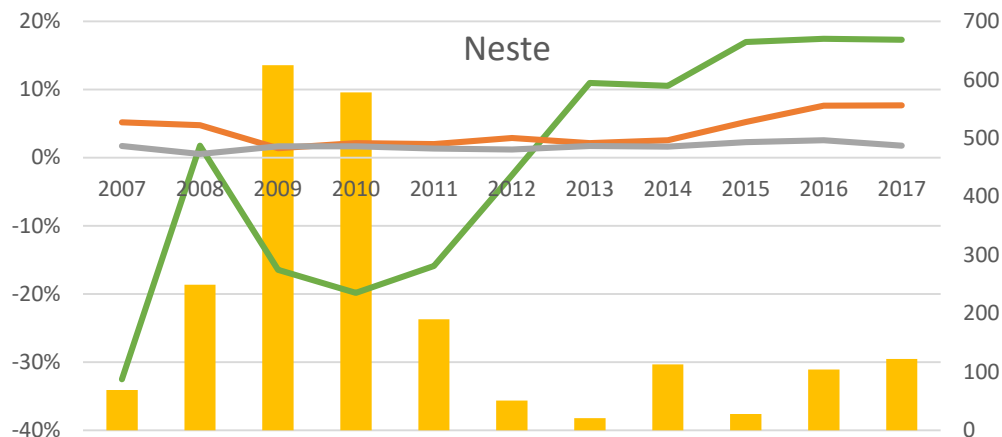


Figure 9: Sales requirements and market volumes.



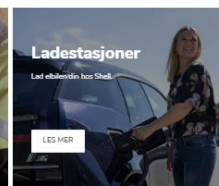
Biodrivstoff har fått størst virkning midtstrøms og nedstrøms i petroleumsnæringen.



- Renewables, capital expenditure MEUR
- Renewables, operating profit % of revenue
- Oil, operating profit % of revenue
- Marketing and services, operating profit % of revenue



For å kunne tilby mer og mer bærekraftig produsert og rimelig energi til hjem, kjøretøy og bedrifter fokuserer vi på de tre energikildene med størst potensiale: 1) avansert biodrivstoff fra rester og avfall, 2) fornybar varme fra dypet av jorden, og 3) ren elektrisitet fra vind.



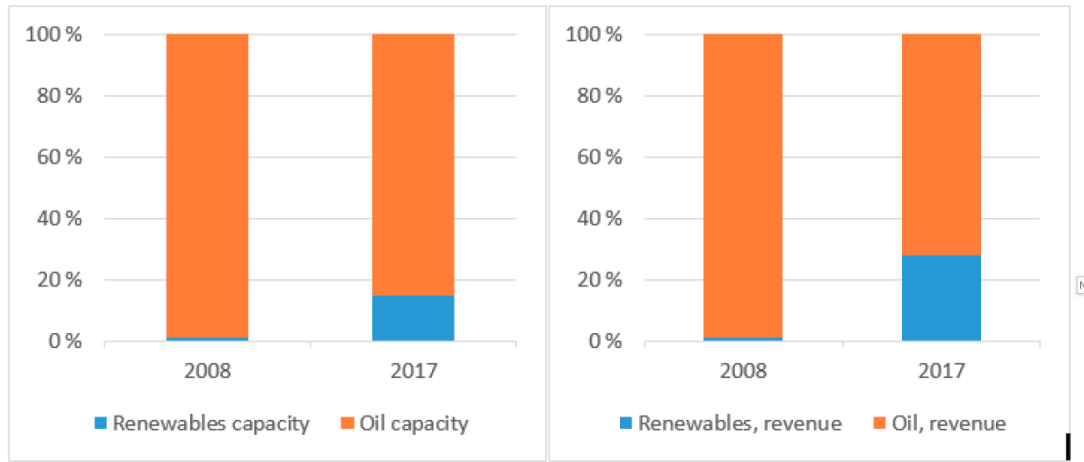
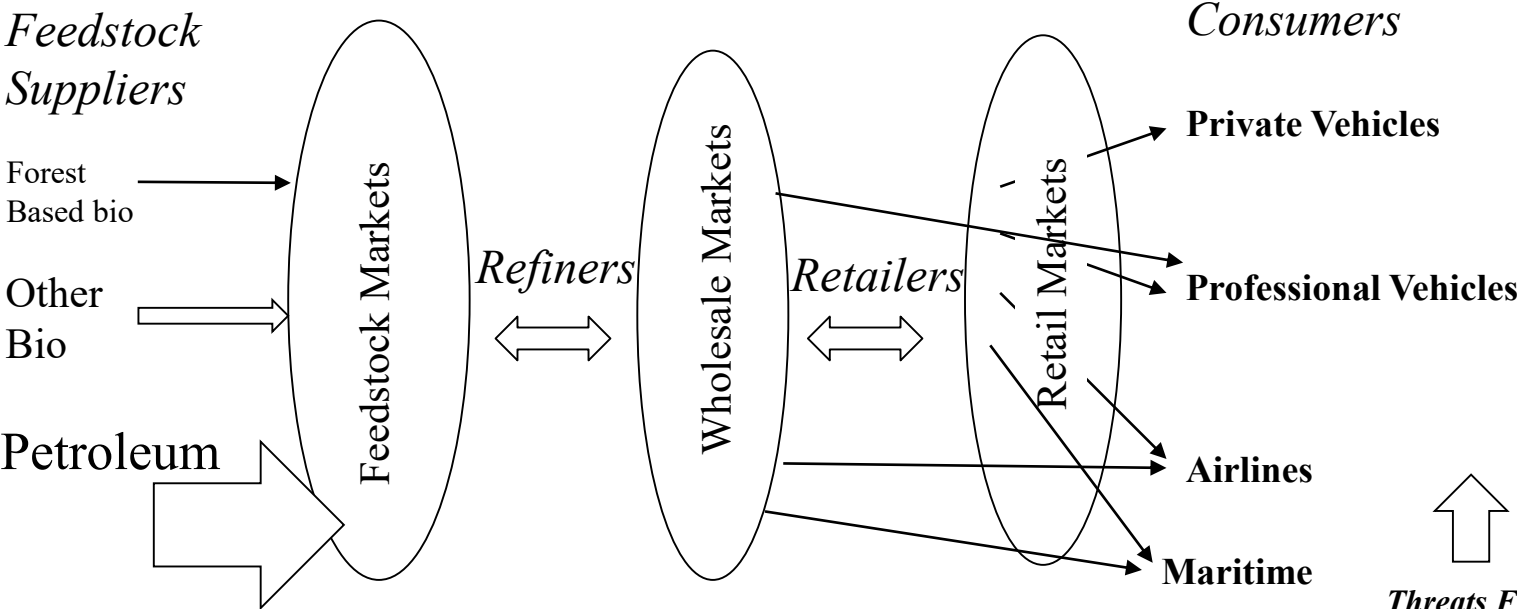


Figure 3. Neste production volume and revenue. Source: [16].



Competitive Challenge of Forest Based Biofuel:

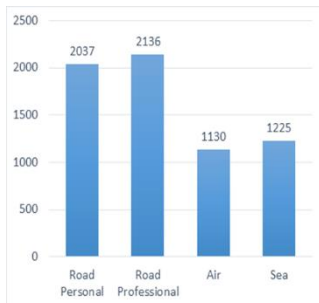
A Value Chain and Customer Segment Perspective



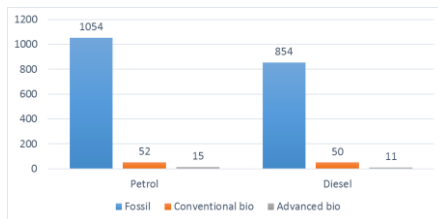
↑
*Threats From
Electric Drive Trains,
Hydrogen
Etc*

Drivstoff: Markedsegmenter og Etterspørselsvolumer

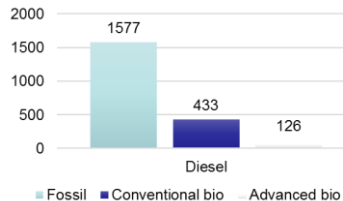
Norske Drivstoffmarkeder (i millioner liter)



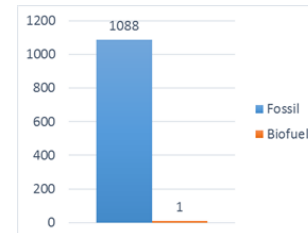
Markedsvolumer for personbiler (i millioner liter).



Markedsvolumer for profesjonelle (i millioner liter).



Jet drivstoff salgsvolumer i 2016 (i million liter)

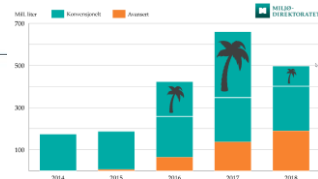


Det maritime markedet

- En betydelig sektor i Norge
- **Sterk prisfølsomhet i det private kontraktmarkedet**
- **Deler av flåten kan tanke i utlandet**
- **Stort fokus på el- og hydrogen**
- **Biodrivstoff som marginat innslag som back-up energi**

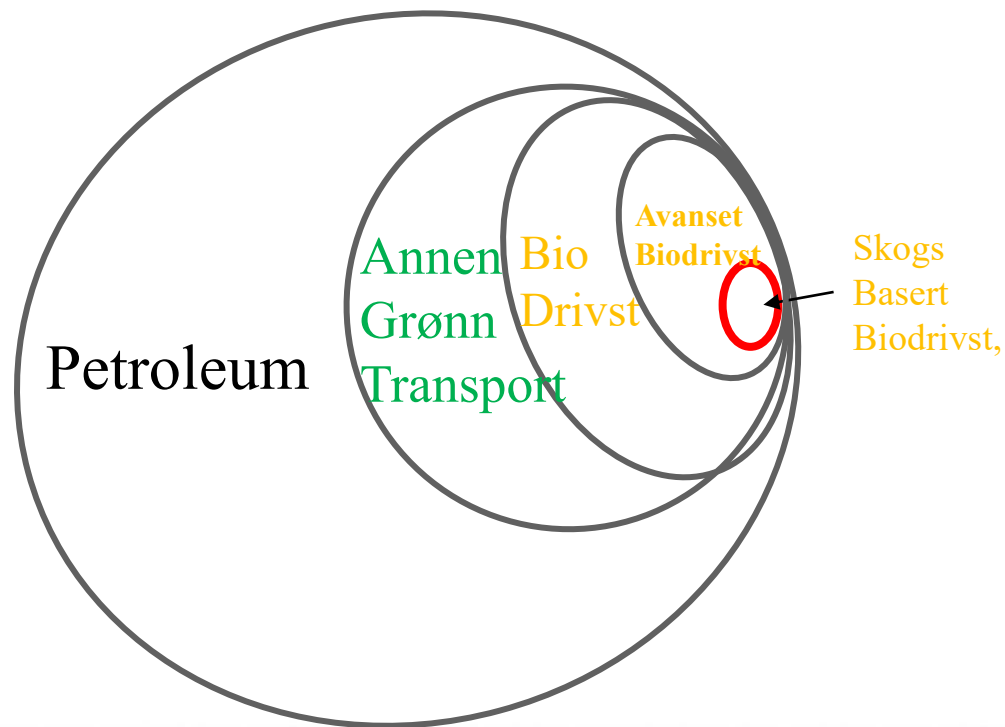
- **Bloomsetning drevet av offentlige salgskrav**
- **10%, fra 2020 20% eller 10% avansert (4% pålagt)**
- **Avgiftslette for å unngå prisstigning**
- **Sterkt konk. press hos detaljister**
- **Bekymring for kvalitet**
- **Grønne bilister vil helst ha el i byene**
- **Likevel en del ekstra bio utover minimumskrav**

Salgskrav og avgiftslette som for privatbiler
Speiselle bærekraftskrav i offentlige kontrakter
Egne tanker for større aktører
Sterk prisfølsomhet i det private kontraktmarkedet
Krav om grønn transport men ikke betalingsvilje



Krav om 0,5% avansert biodrivstoff i luftfart fra 2020 30% i 2030
Avinor og flyselskap er motivert for å redusere klimaeffekter
Drivstoff initiative fra Avinor i 2016
Biodrivstoff unntatt fra utslippskvoter
Sterk prisfølsomhet i intern. Luftfart
Stort prissprang
Deler av flåten kan tanke i utlandet
Sterkt Corona-rammet

Konkurransetfordringen



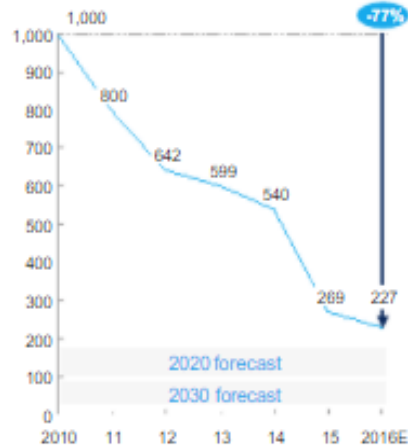
Pris
Kvalitet
Bærekraft

Electric Vehicles

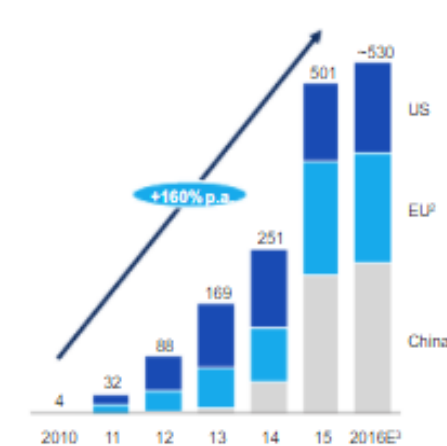
McKinsey breakeven 2025-30/Musk: 2020

Exhibit 4 Rapid decreases in battery prices have helped accelerate EV sales, especially in Europe and China

Average battery pack price
\$ per kWh

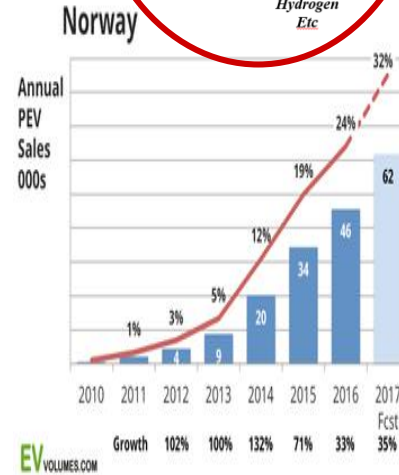
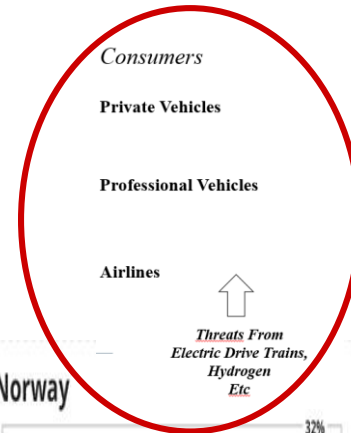


US, EU, and China electric vehicle sales¹
Units, thousands



¹ Plug-in hybrid electric vehicles and battery electric vehicles; excludes low-speed vehicles and hybrid electric vehicles without a plug

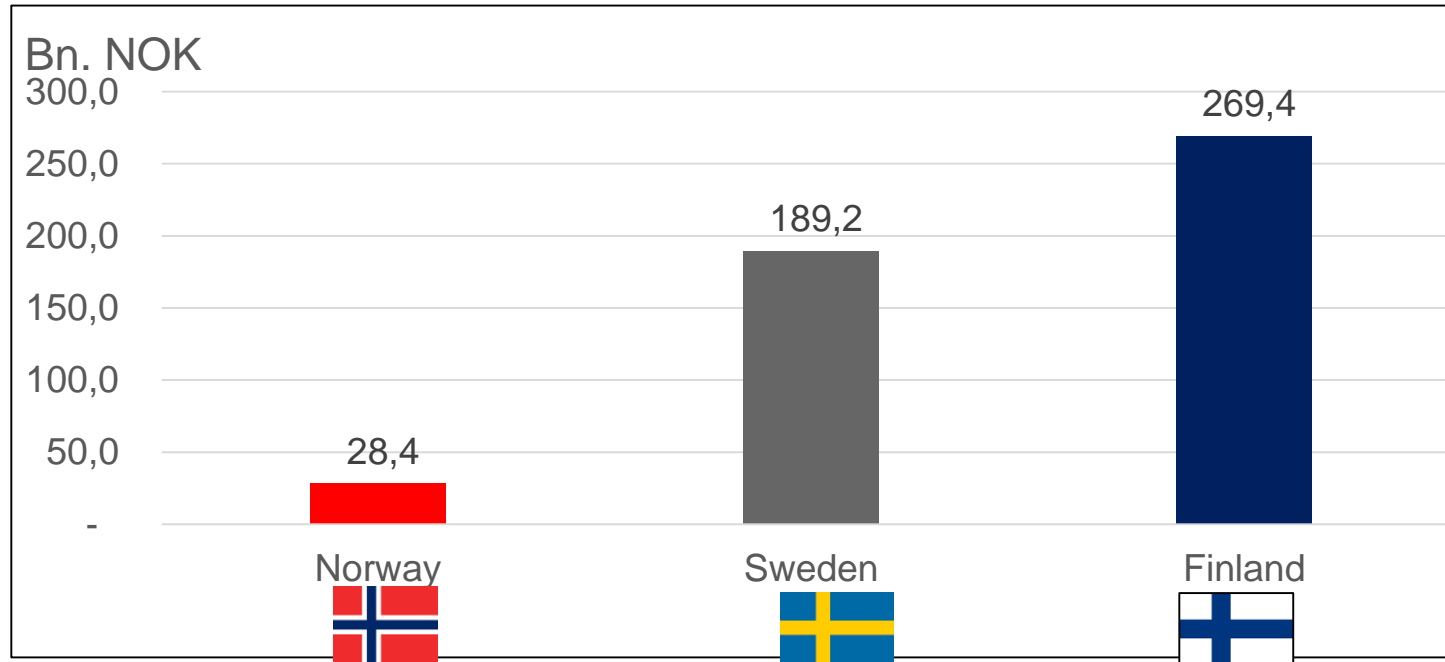
<https://electrek.co/2017/01/30/electric-vehicle-battery-cost-dropped-80-6-years-227kwh-tesla-190kwh/>



Rank	Country	H1-2017 Share (%)
1	Norway	28.9%
2	Hong Kong	20.9%
3	Iceland	7.8%
4	Sweden	3.8%
5	Ukraine	2.6%
6	Belgium	2.1%
7	Switzerland	1.9%
8	Finland	1.7%
9	Luxembourg	1.6%
10	China	1.6%
11	Austria	1.6%
12	Netherlands	1.5%
13	France	1.5%
14	UK	1.4%
15	Germany	1.2%
16	Portugal	1.2%
17	New Zealand	1.2%
18	Japan	1.2%
19	USA	1.1%
20	Canada	0.7%

<https://cleantechnica.com/wpengine.netdna-ssl.com/files/2017/10/Norway-EV-Sales-Growth.png>

Milliarder NOK omsetning 2018 utvalgte land (11.11.2019 valutakurser)



Biorafineri kapasitet 2018 og fremover

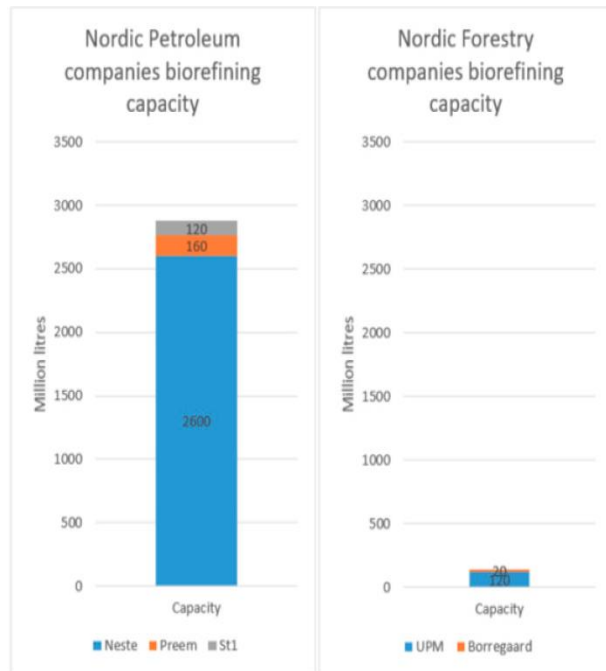


Figure 8. Biorefinery capacity 2018 [16–18,44].

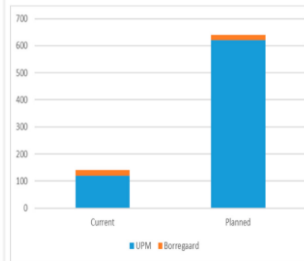


Figure 10. Forest industry projects. Source: [43,56,57].

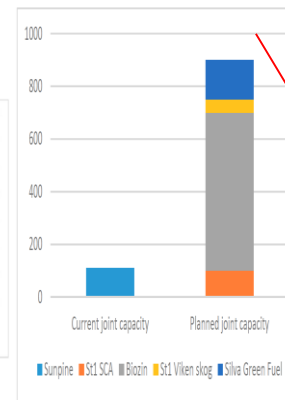


Figure 9. Collaborative projects. Source: [51–55].

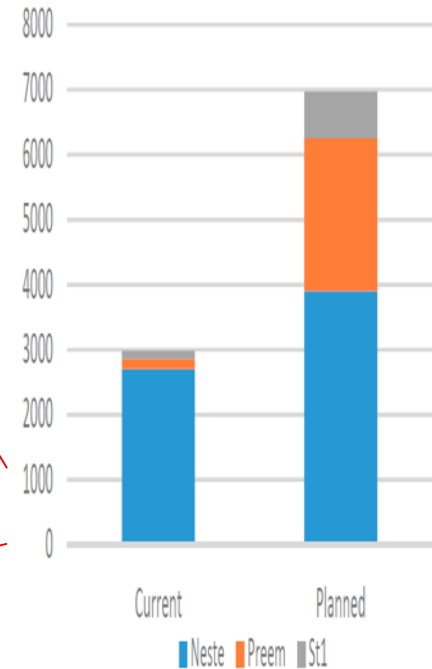
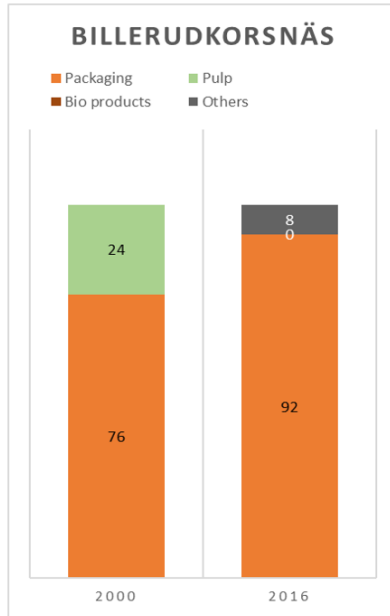


Figure 11. Petroleum industry projects. Source: [8–10,30,32].

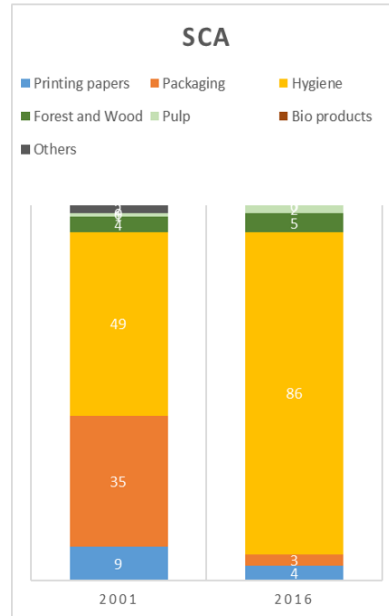
Deler av skogsindustrien gjør det godt på produkter med høyere enhetsverdi



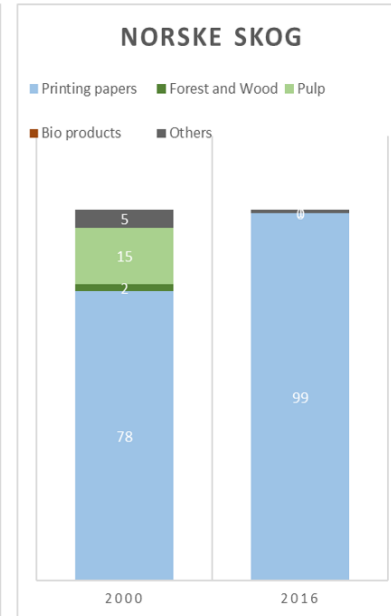
Product Portfolio for 'Specialists'



Source: Billerud (2001),
BillerudKorsnäs (2016)

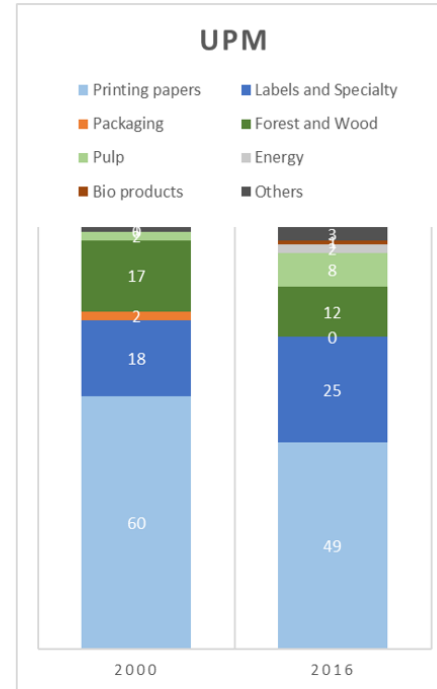
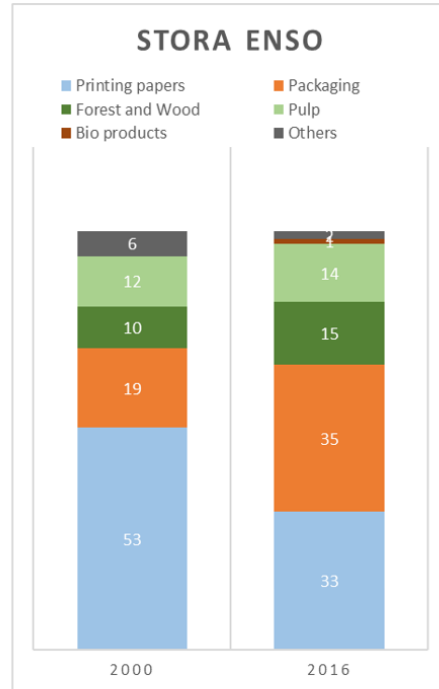
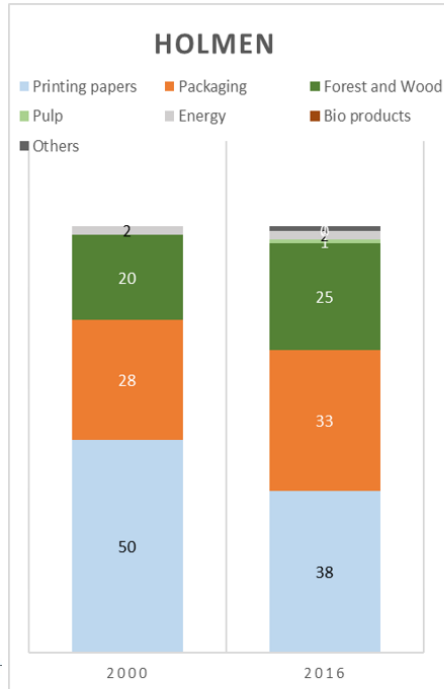


Source: SCA (2001, 2016)



Source: Norske Skog (2000, 2016)

Product Portfolios of the Generalists, 2000 and 2016



Kilder

- **Biofuel Policy and Industrial Transition - A Nordic Perspective, Atle Midttun, Knut Myrum Næss og Proadpran Boonprasurd Piccini; Energies 2019, 12(14), 2740;**
<https://doi.org/10.3390/en12142740>
- **Markets for Biofuel: Norway in a Nordic Context, Atle Midttun and Knut Myrum Næss Report to the BioNext project, BI Norwegian Business School 2019**
- **Facing the climate and digital challenge: European energy industry from boom to crisis and transformation, Alte Midttun, Proadpran Boonprasurd Piccini: Energy Policy 108 (2017) 330–343**
- **Biodrivstoff, Miljødirektoratet (mai 2020)**
<https://www.miljodirektoratet.no/ansvarsomrader/klima/fornybar-energi/biodrivstoff/>