



# Biofuels in Norway

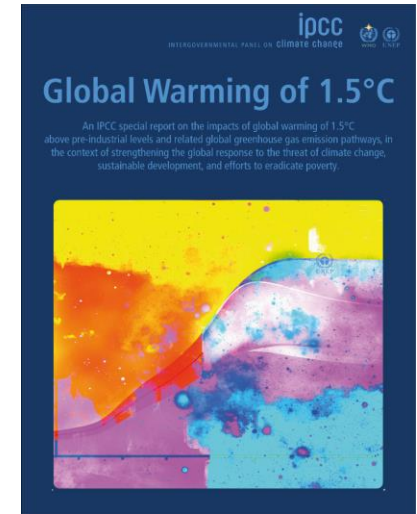
Audun Rosland, Director of Climate Department,  
Bio4Fuels, October 11th 2018



# IPCC Special Report on global warming of 1.5 °C

Where are we now:

- Since preindustrial times, human activities have caused approximately 1.0°C of global warming
- Already seeing consequences for people, nature and livelihoods
- At current rate, would reach 1.5°C between 2030 and 2052



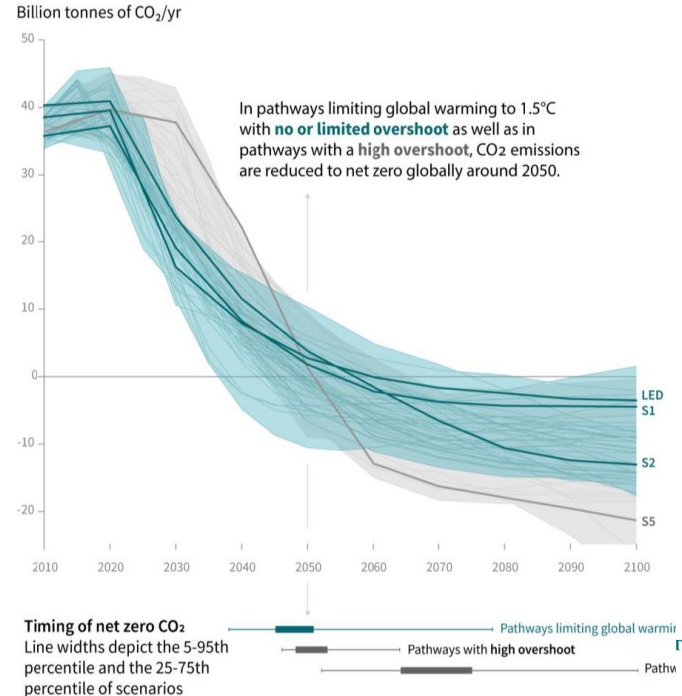
# Impacts of warming at 1.5 °C compared to 2 °C

- Less extreme weather where people live, including extreme heat and rainfall
- 10 million fewer people exposed to risk of rising seas
- Lower impact on biodiversity and species
- Global population exposed to water shortages up to 50% less
- Up to several hundred million fewer people exposed to climate-related risk and susceptible to poverty by 2050

# Significant efforts to limit warming to 1.5 °C

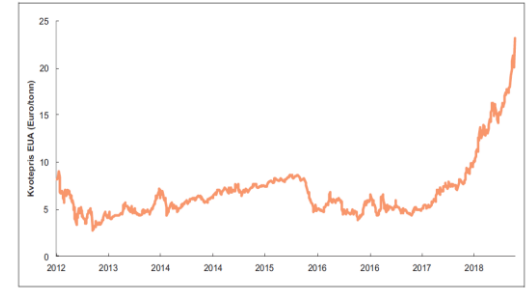
- CO<sub>2</sub> emissions fall by about 45% by 2030 (from 2010 levels)
- CO<sub>2</sub> emissions would need to reach 'net zero' around 2050
- Would require changes on an unprecedented scale
- All 1.5 pathways need negative emissions, but at different scope

Global total net CO<sub>2</sub> emissions  
(four illustrative pathways are highlighted)

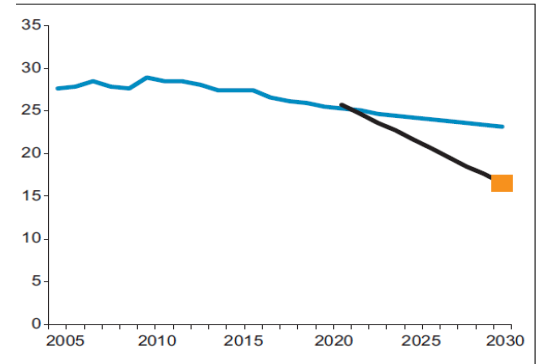


# Norway's targets for 2030

- Reduce emissions by at least 40 percent in 2030 compared to 1990 level.
- Aims to join the EU 2030 framework in order for Norway and the EU to jointly fulfil their climate targets.
  - ETS sector: part of EU's cap - 43% reduction
  - Non-ETS: Norway preliminary target: 40%
  - Separate target for forest and land use (LULUCF)



Kilde: ThompsonReuters.



# Biofuel - policy measures

- Blending requirement for biofuel in road transport
- Sustainability criteria
- Exception from CO<sub>2</sub>-tax
- Exception from road usage tax outside the blending requirement



Foto: iStock

# Biofuel mandate road transport - 2008-2020



# Increased availability of advanced biofuels needed

- Multiple benefits:
  - Lower GHG-emission
  - Reduce pressure on food-based crops
- However, limited availability in the market today
- Broad consensus that a shift towards advanced biofuels are the way forward



Foto: Kristin M. Klokkeide



# EU Sustainability criteria - climate



Reduced greenhouse gas emissions

- 50 % from 2018
- 60 % new installations

Biofuels and bioliquids from *waste and residues* from production processes need only to fulfil this requirement

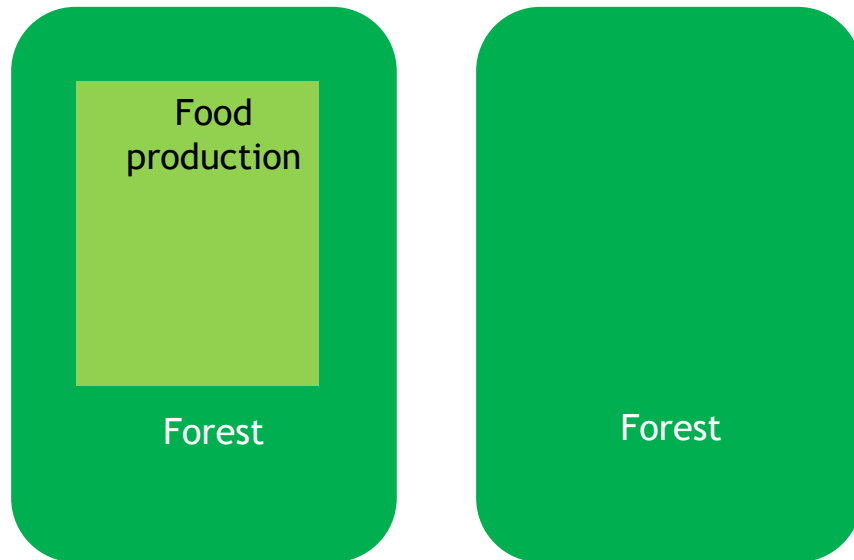
# EU Sustainability criteria - area



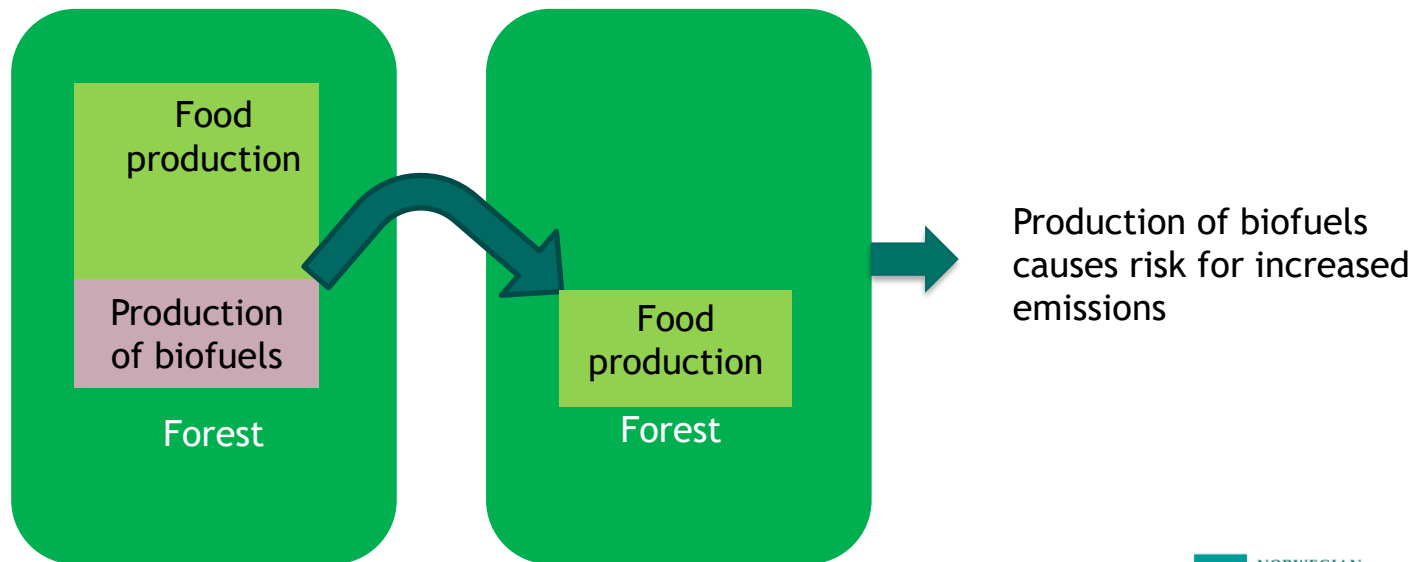
Raw material should not origin from land with high biodiversity value or high carbon stock:

- Forest and other wooded land of native species, where there is no clearly visible indication of human activity
- Protected areas
- Grassland
- Deforested areas, drained wetlands
- Peatland

# Indirect land use change (ILUC)



# Indirect land use change (ILUC)



# Indirect land use change directiv

## Main purpose:

- Take into account indirect land use change
- Start transformation from conventional to advanced biofuels

## Main approach:

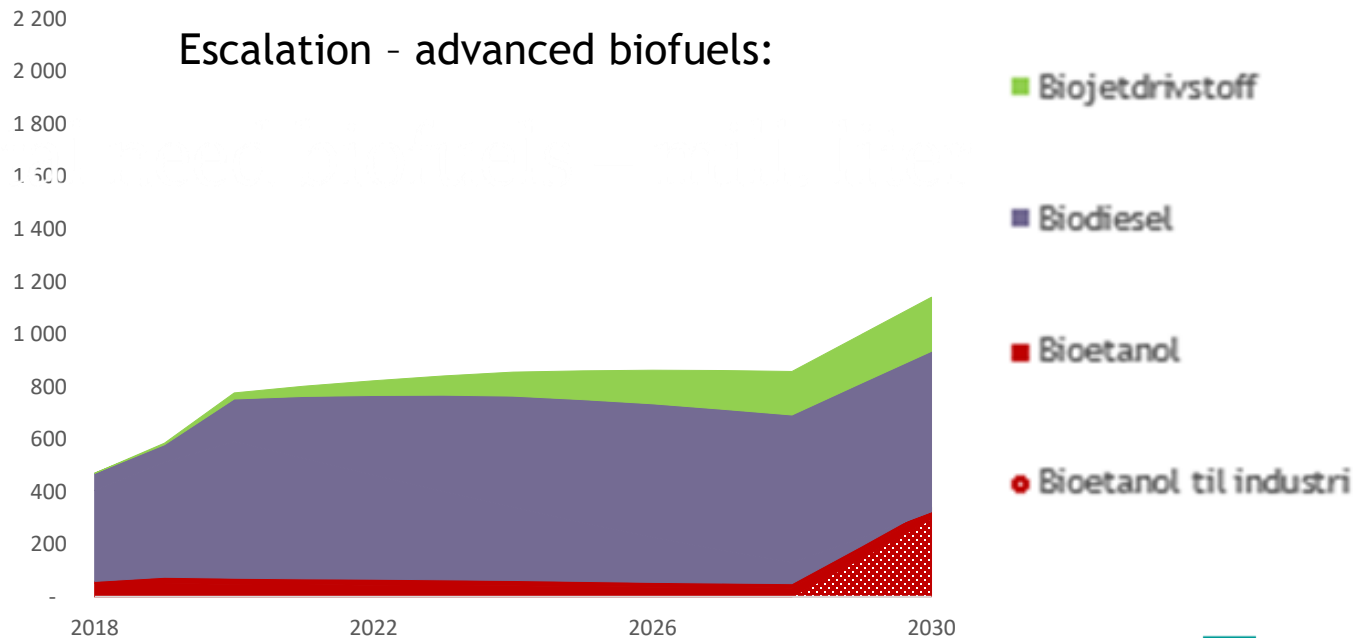
- Treshold on conventional biofuels
- National targets for advanced biofuels
- ILUC-factors included in the reporting of greenhouse gas emissions

# Blending requirements in other sectors

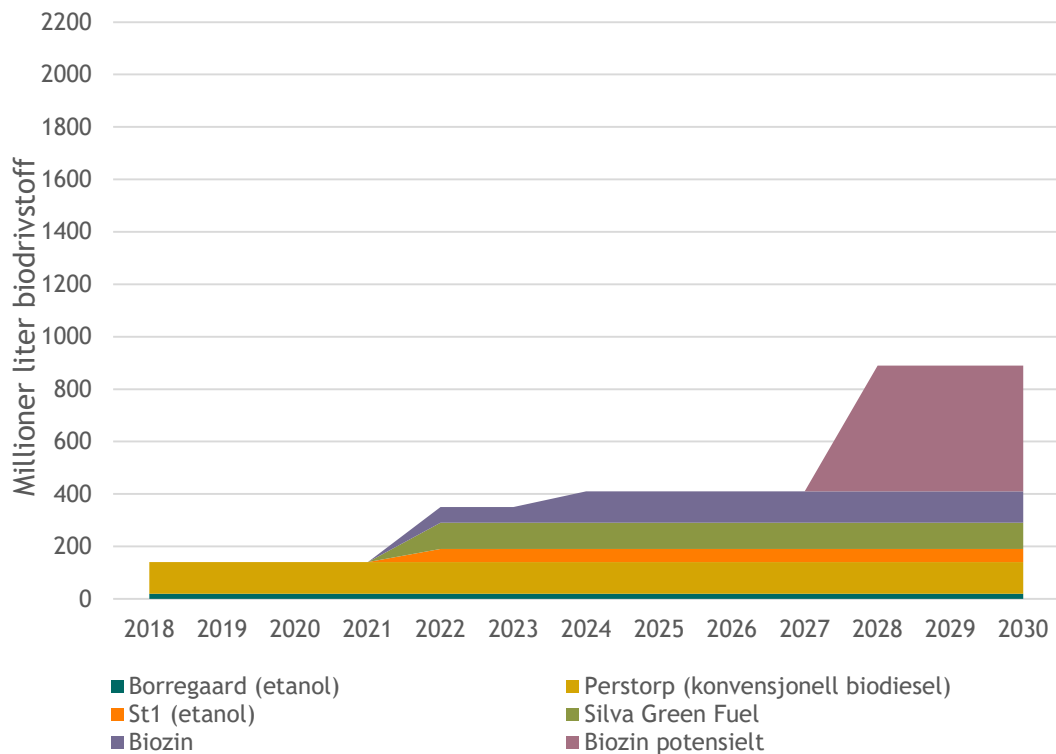
- Aviation
- Shipping
- Non-road machinery



# Total need biofuels – mill. liter



# Plans for Production in Norway







[www.miljodirektoratet.no](http://www.miljodirektoratet.no)