VELKOMMEN TIL DE NESTE 50 ÅR!

Arnfinn Nergaard

2016

1970

1870

1770

(Encyclopedia Britannica)

"Building on the widespread availability of digital technologies that were the result of the Third Industrial, or Digital, Revolution, the Fourth Industrial Revolution will be driven largely by the convergence of digital, biological, and physical innovations."

(Klaus Schwab, Founder and Executive Chairman of
World Economic Forum)

"…..Fourth Industrial Revolution's technologies, such as artificial intelligence, genome editing, augmented reality, robotics, and 3-D printing, are rapidly changing the way humans create, exchange, and distribute value."

(Klaus Schwab, Founder and Executive Chairman of World Economic Forum)

«Ord skaper ikke penger. Vi skal selvsagt leve av jorda og havet!»

(Aslak Sira Myhre, Solamøtet)

Arena hav

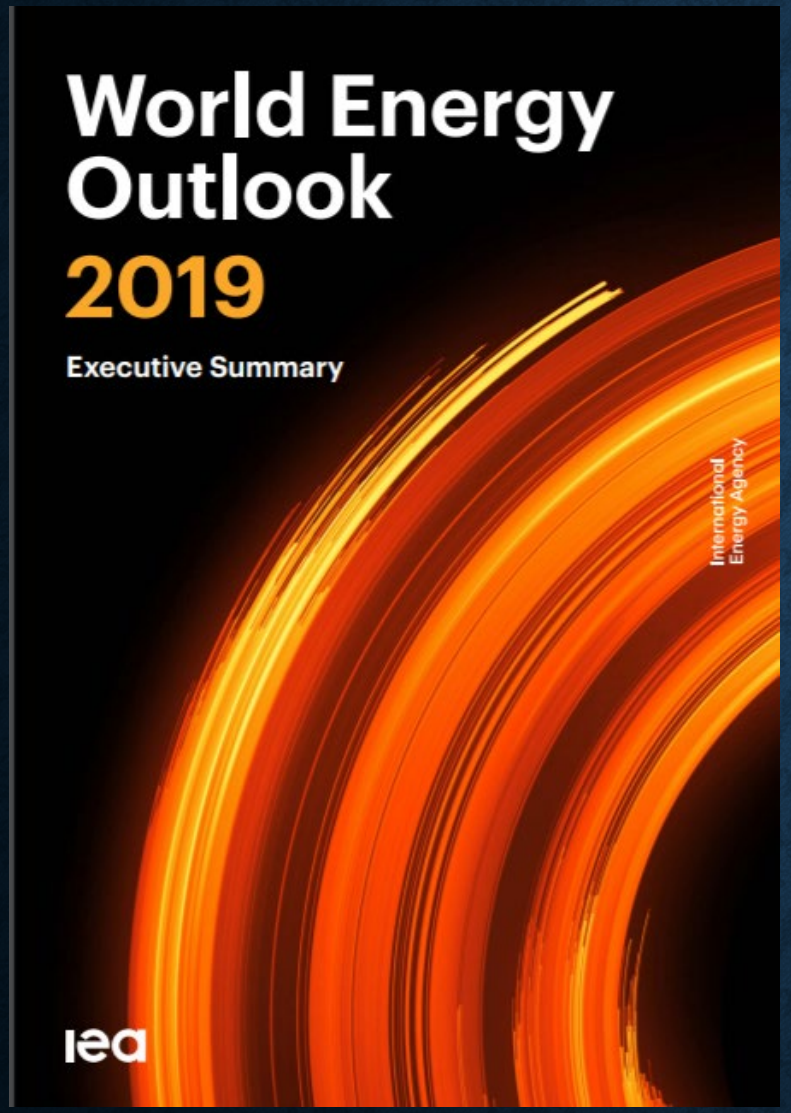
The Future

Fiske og havbruk Transport Olje og gass Mangfold

Prof Ingrid Schjølberg, Ntnu: «Bare en liten del av havet er utforsket»

Av all biomasse i verden er halvparten i havet, og det er bred enighet om at en større del av fremtidens mat vil komme fra det blå dypet.

– 98 prosent av det vi spiser kommer fra land. Fisk og havbruk har et kjempepotensial, sier **Karl Almås** ved forskningsinstituttet Sintef.



"Offshore wind is gathering speed
Cost reductions and experience gained in Europe's North Sea are opening up a huge renewable resource. Offshore wind has the technical potential to meet today's electricity demand many times over. It is a variable source of generation, but offshore wind offers considerably higher capacity factors than solar PV and onshore wind thanks to ever-larger turbines that tap higher and more reliable wind speeds farther away from shore. There are further innovations on the horizon, including floating turbines that can open up new resources and markets. Increasingly cost-competitive offshore wind projects are on course to attract a trillion dollars of investment to 2040. Europe's success with the technology has sparked interest in China, the United States and elsewhere. In the Sustainable Development Scenario, offshore wind rivals its onshore counterpart as the leading source of electricity generation in the European Union, paving the way to full decarbonisation of Europe's power sector. Even higher deployment is possible if offshore wind becomes the foundation for the production of low-carbon hydrogen."

1 trillion USD = 10^{12} USD = 10^{13} NOK = 10 000 mrd NOK = 7 x statsbudsjettet = Oljefondet

20 MANDAG 20. JANUAR 2020
STAVANGER AFTENBLAD

UTENRIKS

Greta Thunberg er blitt invitert til Verdens økonomiske forum (WEF) av grunnleggeren Klaus Schwab.
PIERRE ALBOUY

Klima på topp når toppmøtet i Davos runder 50

50-årsminner

- Månelanding Apollo 11
- World Economic Forum
- UK Offshore
- Brasil Offshore
- Moms

Energi

Hydrogen

Fornybar

Batterier

Autonomi

DE NESTE 50

Bærekraft

Klima

Befolkning

Vannstand

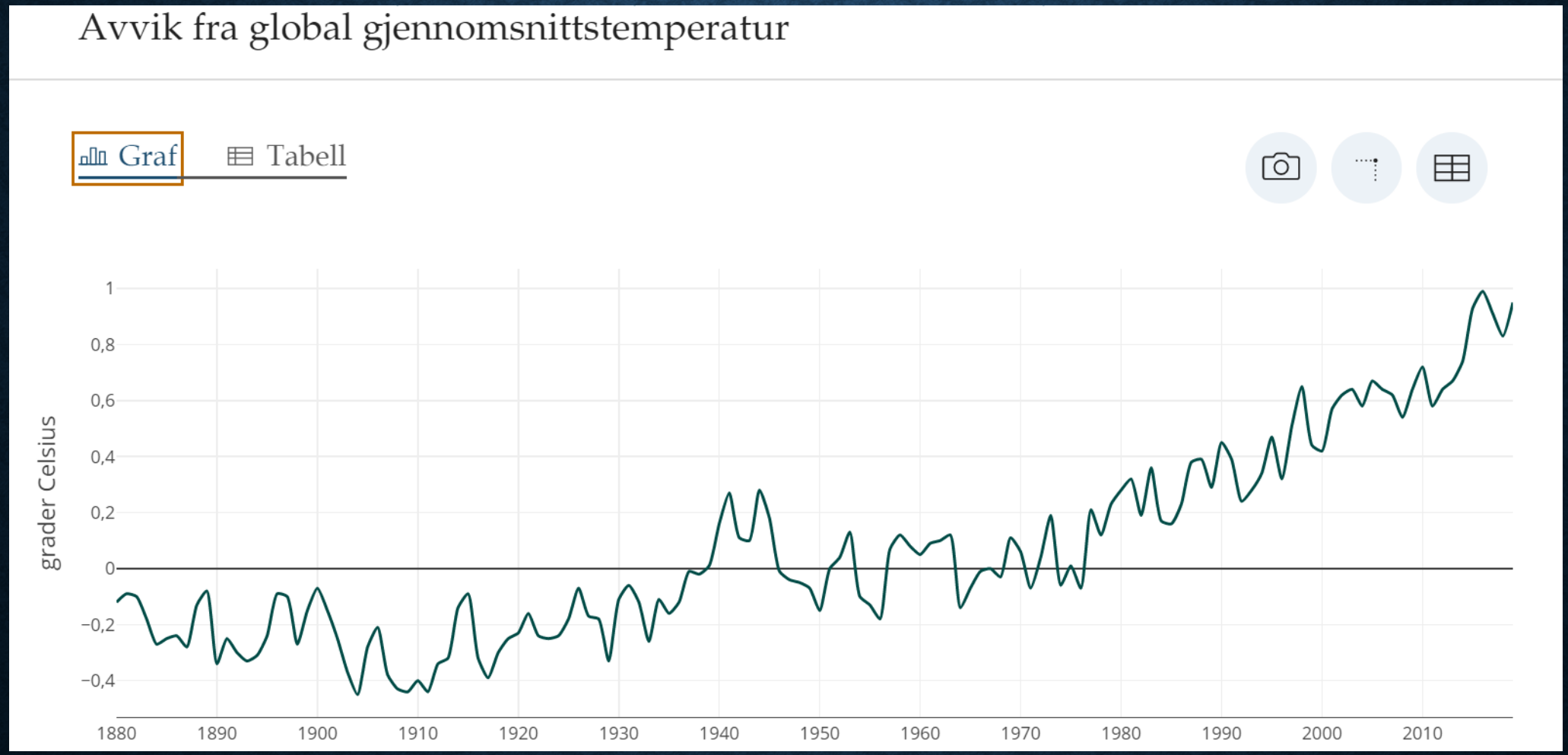
Temperatur

Digitalisering

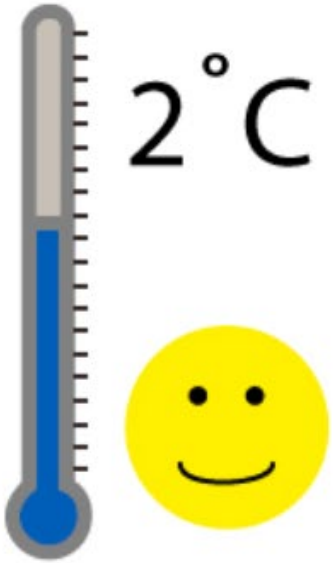
Demografi

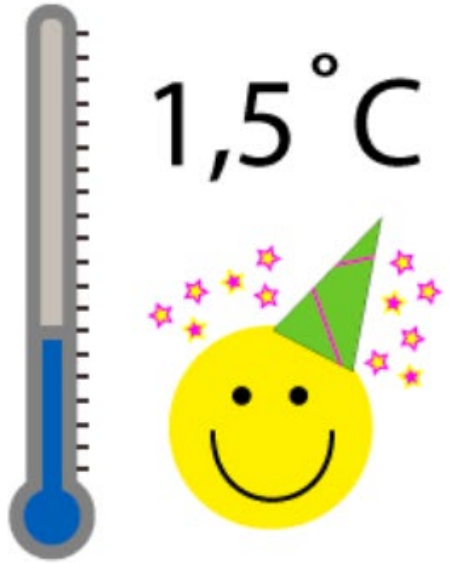
Johan Sverdrup

Elektrifisering



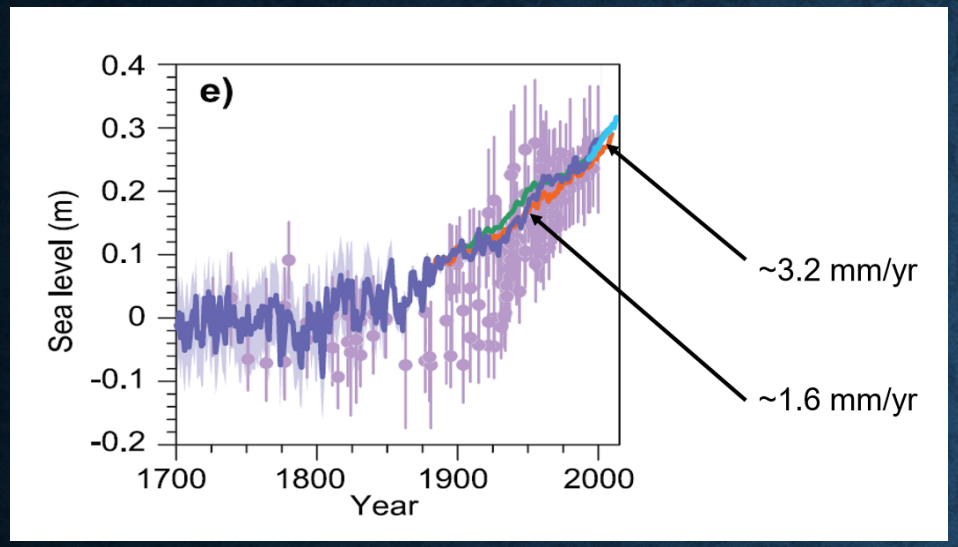
(Miløjødirektoratet/NOAA/NCEI)

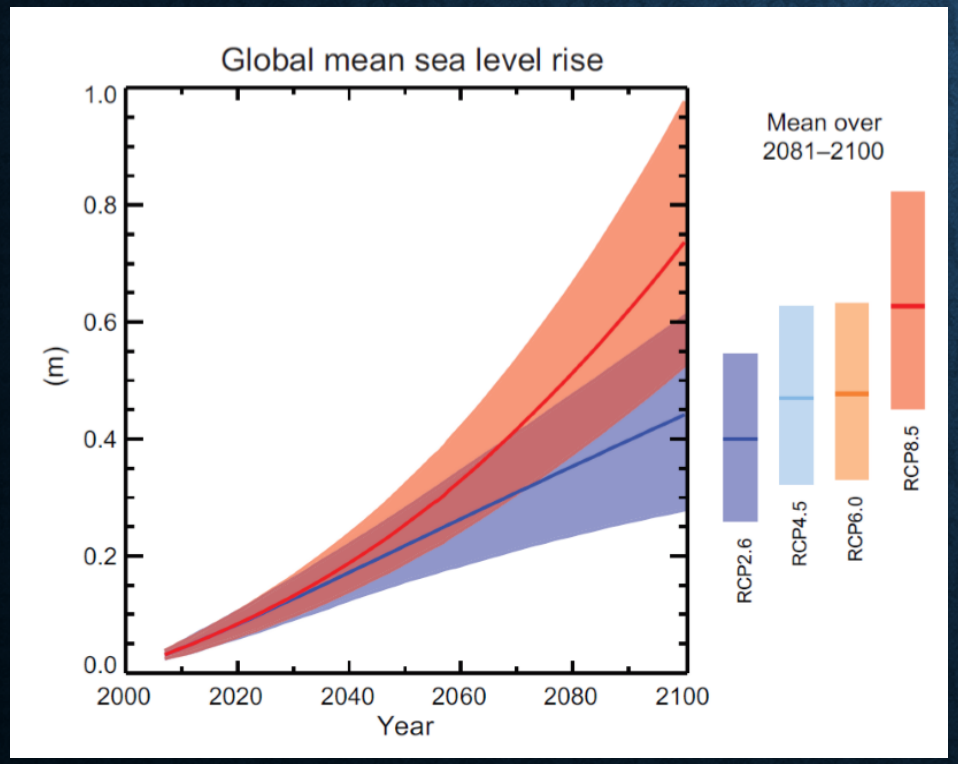




To termometre: ett som viser 2 grader, og ett som viser 1,5. Grafikk: FN-sambandet

Parisavtalen desember 2016

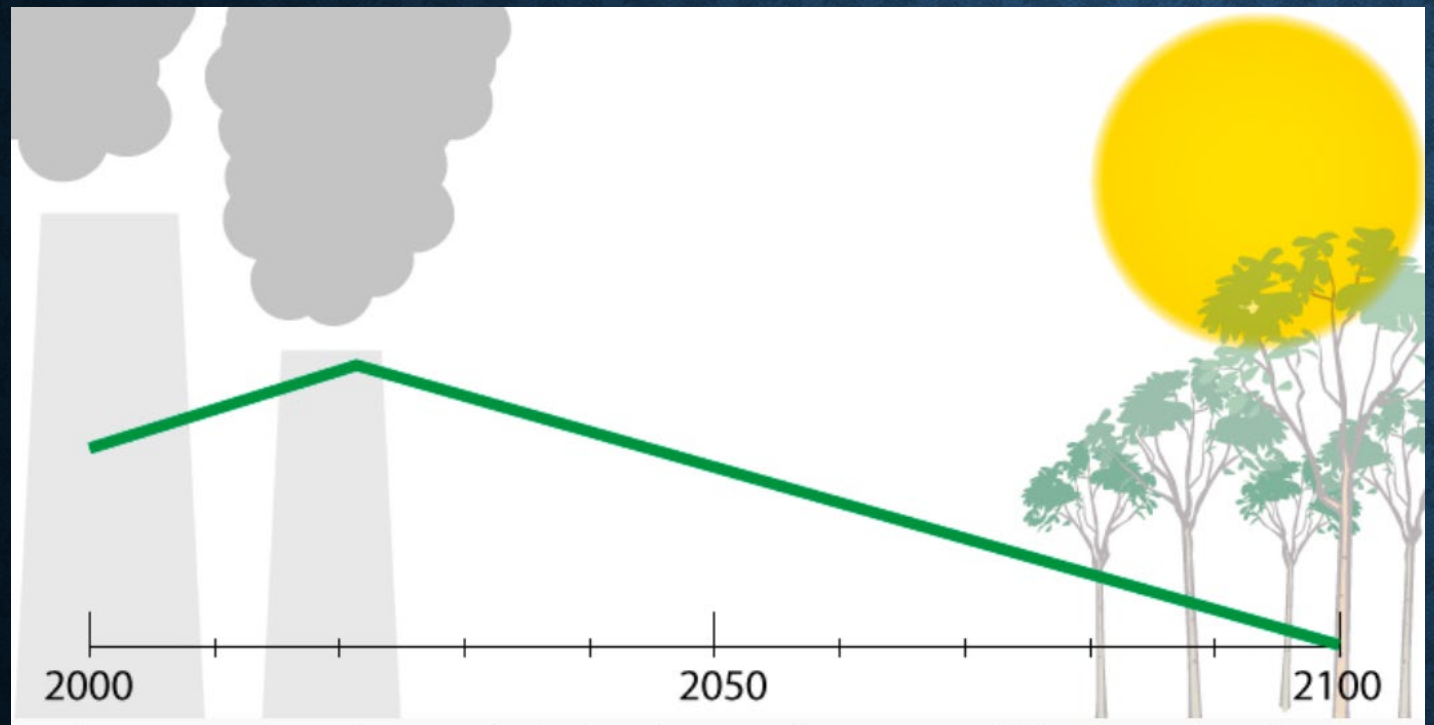




1970 – 2020: 2.4 mm/år ➡ 12 cm

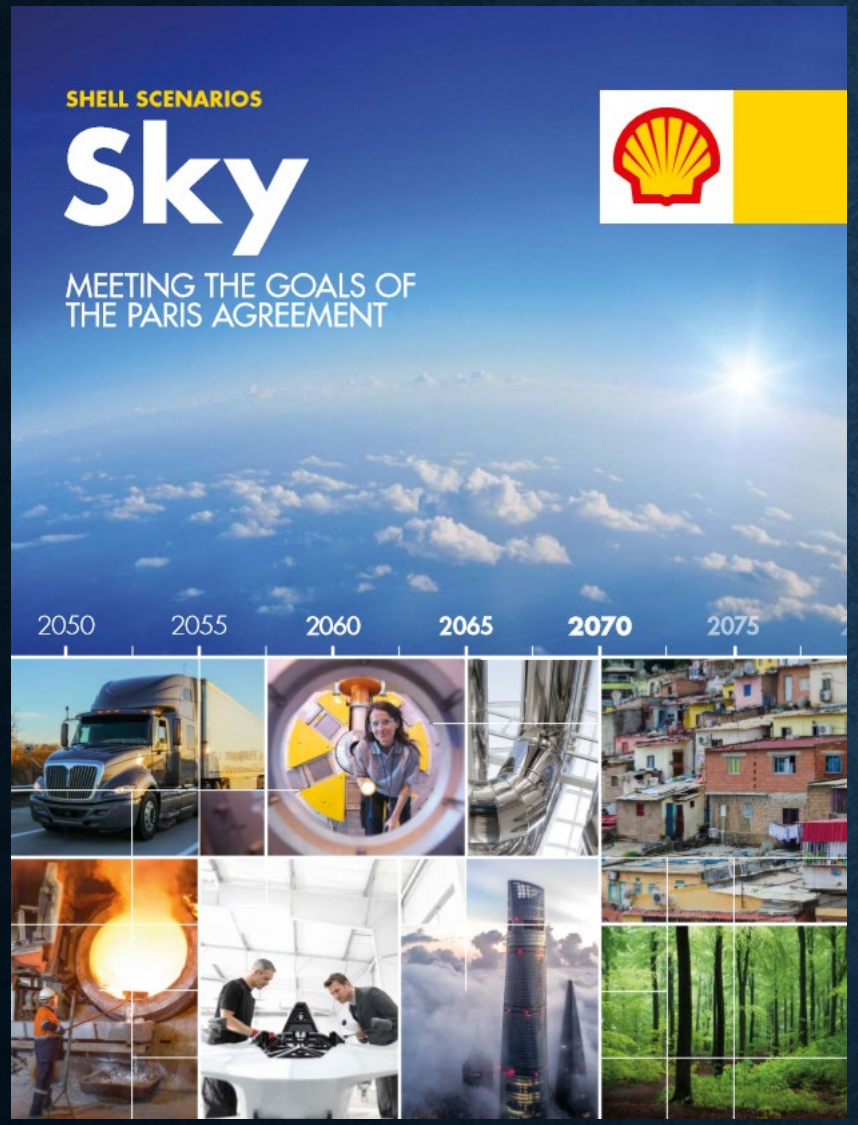
2020 – 2070: 15 – 55 cm

(Kilde Kristian Vasskog, UiB)

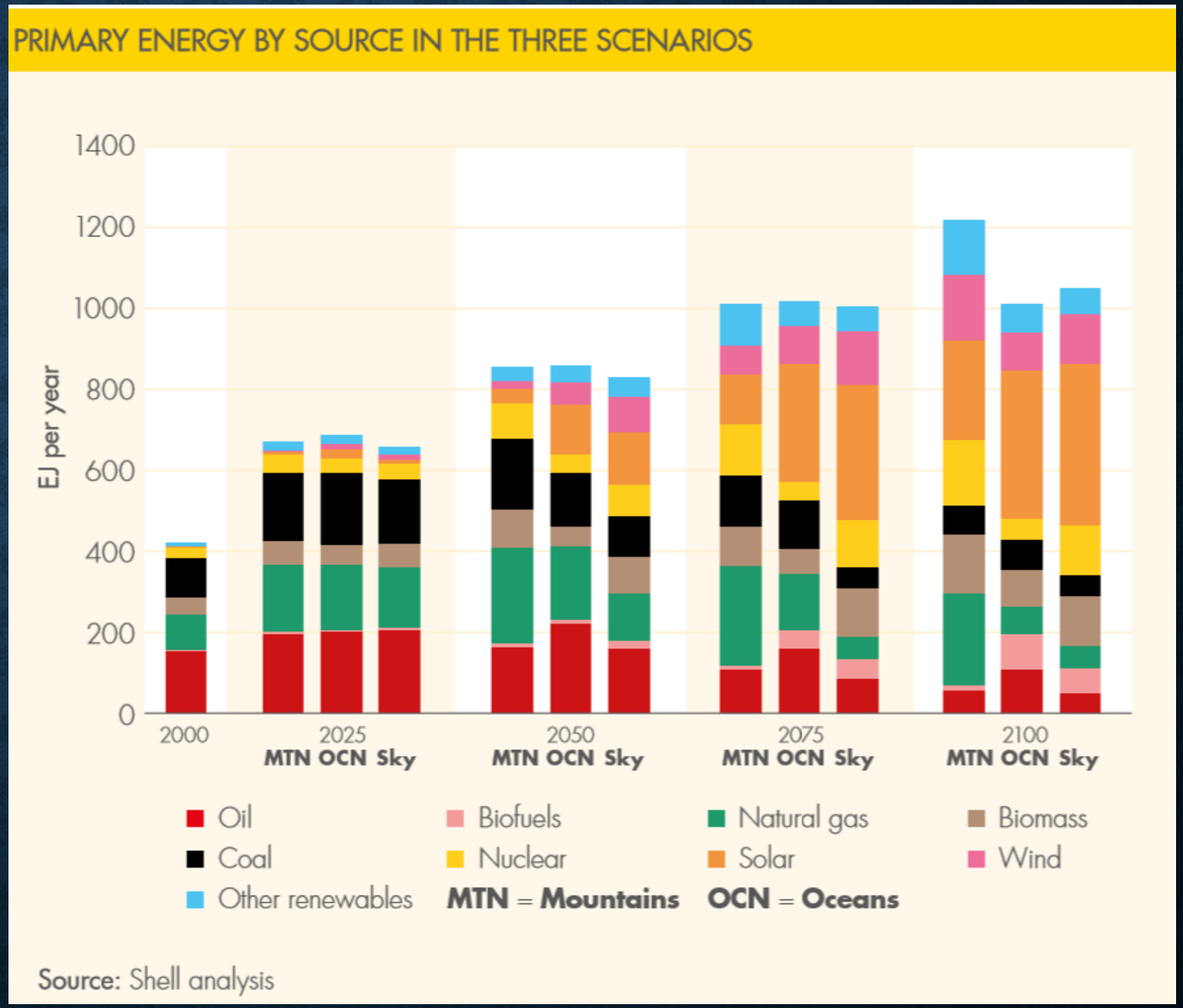


Graf som viser at utslippene skal gå ned mot null i 2100. Grafikk: FN-sambandet

«I andre del av århundret, en gang mellom 2050 og 2100, skal vi være klimanøytrale.»


SHELL SCENARIOS
Sky
MEETING THE GOALS OF
THE PARIS AGREEMENT
2050
2055
2060
2065
2070
2075

Scenarier


PRIMARY ENERGY BY SOURCE IN THE THREE SCENARIOS
EJ per year
1400
1200
1000
800
600
400
200
0
2000
2025
2050
2075
2100
MTN OCN Sky
Oil
Coal
Other renewables
Biofuels
Nuclear
Natural gas
Solar
Biomass
Wind
MTN = Mountains
OCN = Oceans
Source: Shell analysis

De neste 50 år…..

From now to 2070 –

1. A change in consumer mindset means that people preferentially choose low-carbon, high-efficiency options to meet their energy service needs.
2. A step-change in the efficiency of energy use leads to gains above historical trends.
3. Carbon-pricing mechanisms are adopted by governments globally over the 2020s, leading to a meaningful cost of CO_2 embedded within consumer goods and services.
4. The rate of electrification of final energy more than triples, with global electricity generation reaching a level nearly five times today's level.
5. New energy sources grow up to fifty-fold, with primary energy from renewables eclipsing fossil fuels in the 2050s.
6. Some 10,000 large carbon capture and storage facilities are built, compared to fewer than 50 in operation in 2020.
7. Net-zero deforestation is achieved. In addition, an area the size of Brazil being reforested offers the possibility of limiting warming to 1.5°C, the ultimate ambition of the Paris Agreement.

(Shell Scenarios Sky: Meeting the Goals of the Paris Agreement)

1 Forbrukervalg
2 Energieffektivisering
3 Karbonprising
4 Elektrifisering x 5
5 'Ny' energi x 50
6 10 000 CCS enheter
7 Net-zero avskoging

2. desember 2019

REPSOL / GLOBAL

English | Select website | Contact Us | Client Area

ABOUT US | REPSOL WORLDWIDE | SUSTAINABILITY | ENERGY AND INNOVATION | PRODUCTS AND SERVICES | SHAREHOLDERS AND INVESTORS | PRESS ROOM | CAREERS

Home › Press Room › Press releases

This target positions the company at the leading edge of the sector in the fight against climate change

Repsol will be a net zero emissions company by 2050

6. januar 2020

equinor

Hva vi gjør >

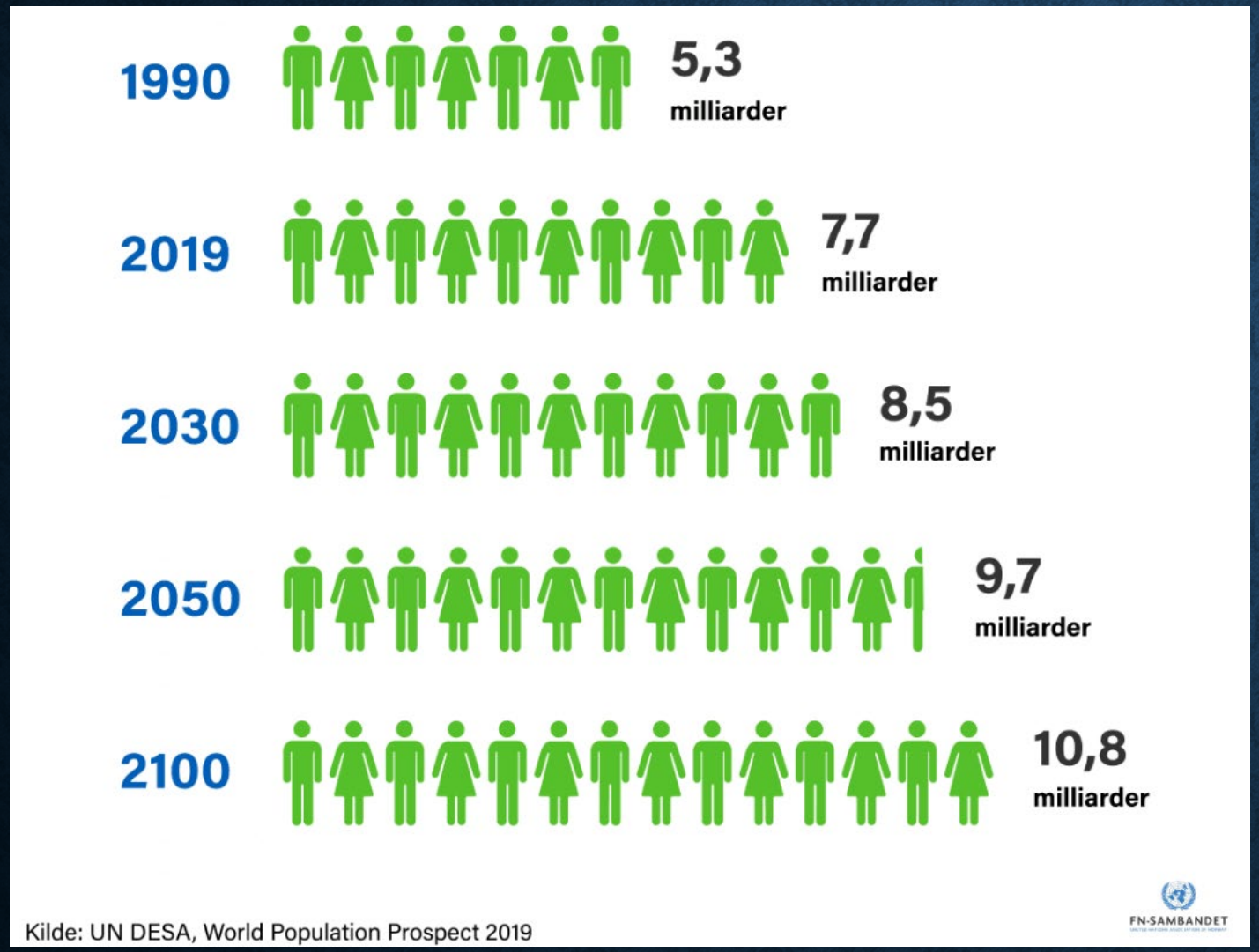
Hvor vi er >

Hvordan og hvorfor >

Karriere >

Equinor med ambisjon om å kutte utslippene i Norge til nær null i 2050

6. januar 2020 06:15 CET | Sist endret 7. januar 2020 13:37 CET

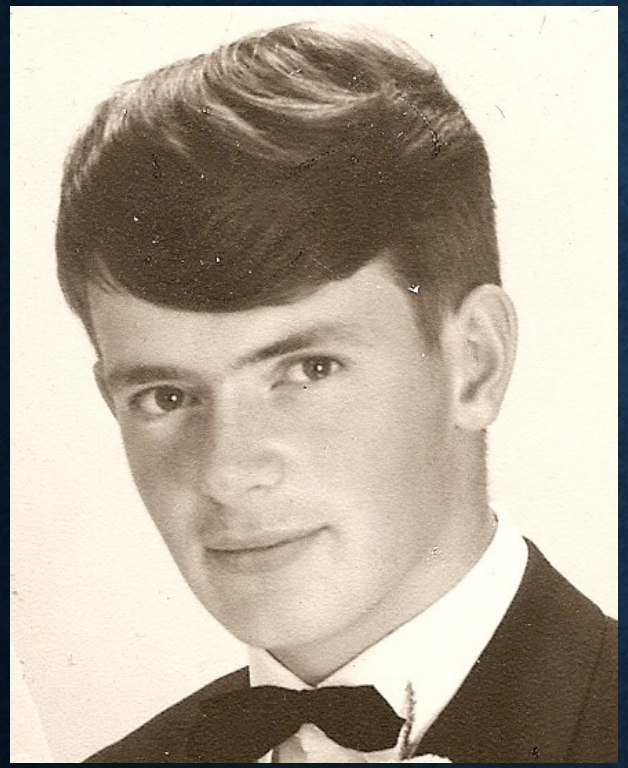


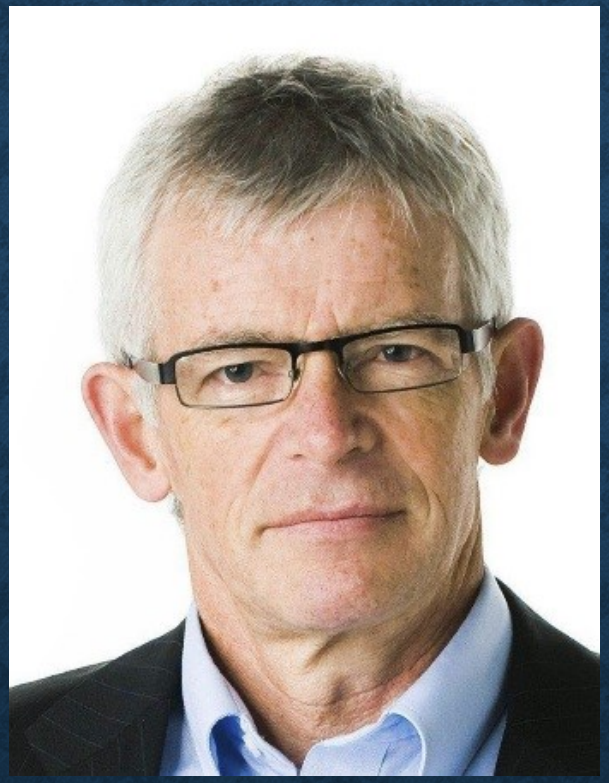
Verdens befolkning forventes å passere 10 milliarder i 2070

Hva med oss?

- 10 000 ansatte, halvparten av vår arbeidsstyrke globalt, skal pensjonere seg eller forlate Equinor ved naturlig avgang de neste ti år, sier Magne Hovden, personaldirektør i Equinor.

For egen regning…….





Godt seminar!

……50 år gjør en forskjell