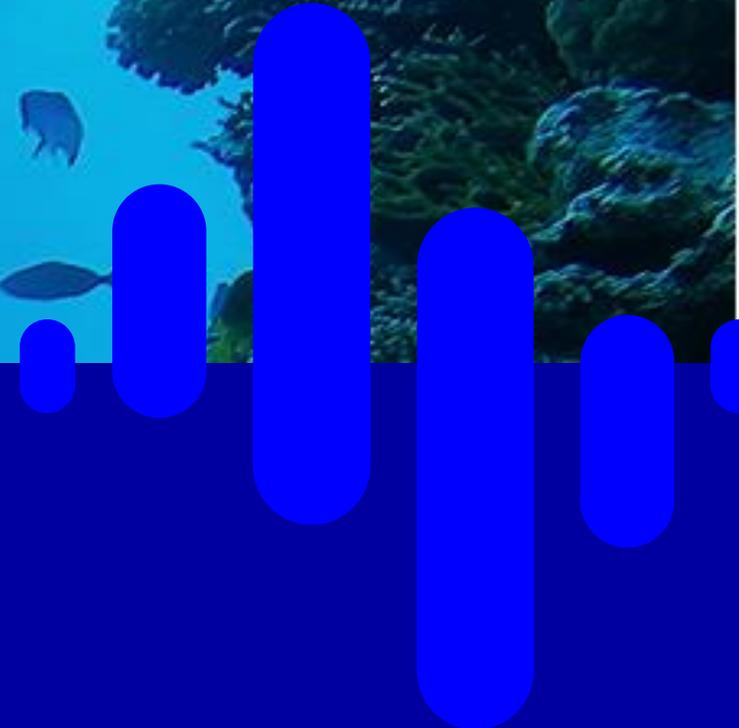


Sustainable Finance

An underwater scene with vibrant coral reefs and several fish swimming in clear blue water. The scene is partially obscured by a dark blue horizontal band that serves as a background for the text.

Global economics and market outlook

Thina Margrethe Saltvedt, 09 April 2019



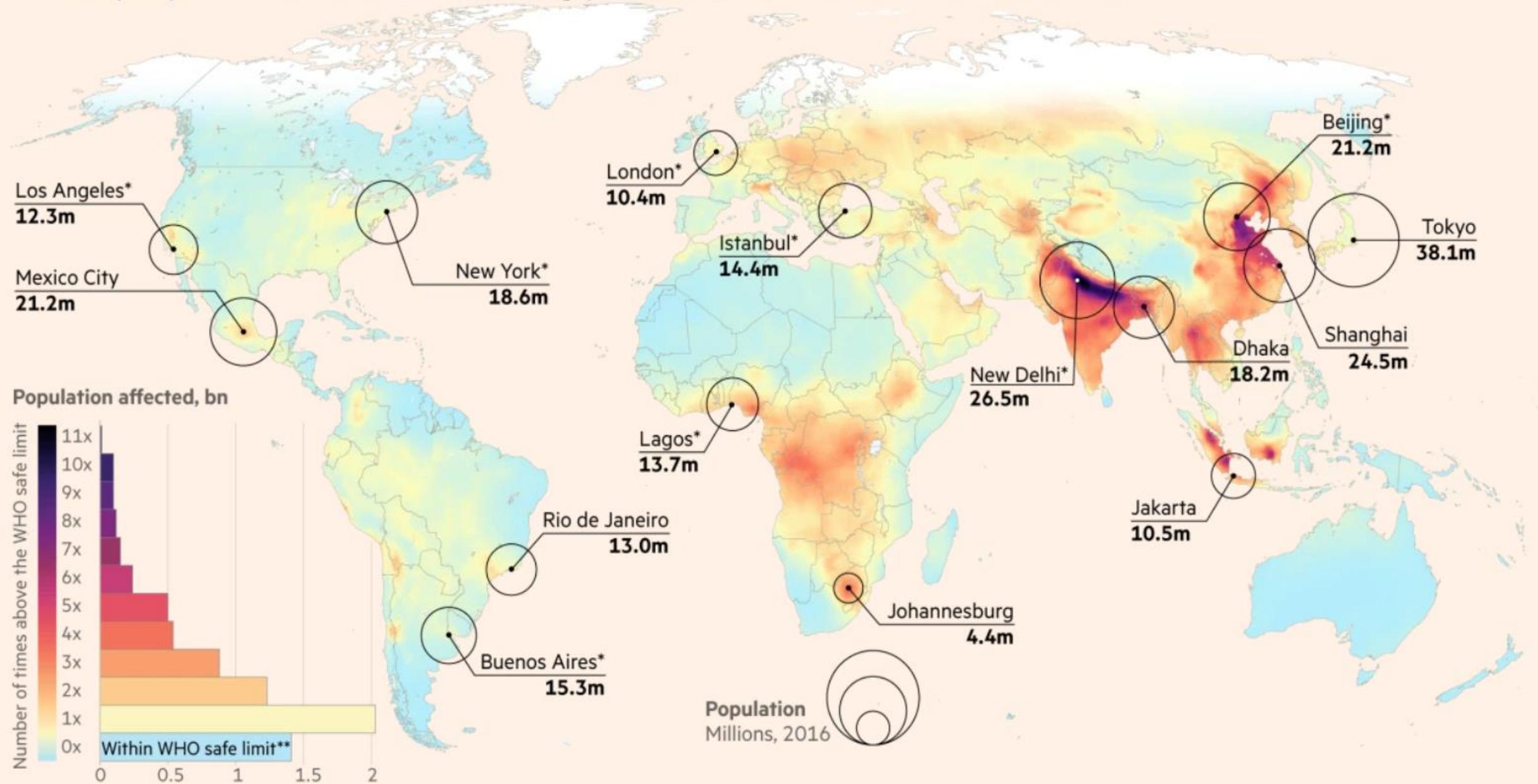
The Global Risk Report 2019: Likelihood and Impact – Climate related risks are at the top

Top 5 Global Risks in Terms of Likelihood

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1st	Asset price collapse	Asset price collapse	Storms and cyclones	Severe income disparity	Severe income disparity	Income disparity	Interstate conflict with regional consequences	Large-scale involuntary migration	Extreme weather events	Extreme weather events	Extreme weather events
2nd	Slowing Chinese economy (<8%)	Slowing Chinese economy (<8%)	Flooding	Chronic fiscal imbalances	Chronic fiscal imbalances	Extreme weather events	Extreme weather events	Extreme weather events	Large-scale involuntary migration	Natural disasters	Failure of climate-change mitigation and adaptation
3rd	Chronic disease	Chronic disease	Corruption	Rising greenhouse gas emissions	Rising greenhouse gas emissions	Unemployment and underemployment	Failure of national governance	Failure of climate-change mitigation and adaptation	Major natural disasters	Cyber-attacks	Natural disasters
4th	Global governance gaps	Fiscal crises	Biodiversity loss	Cyber-attacks	Water supply crises	Climate change	State collapse or crisis	Interstate conflict with regional consequences	Large-scale terrorist attacks	Data fraud or theft	Data fraud or theft
5th	Retrenchment from globalization	Global governance gaps	Climate change	Water supply crises	Mismanagement of population	Cyber-attacks	High structural unemployment or underemployment	Major natural catastrophes	Massive incident of data fraud/theft	Failure of climate-change mitigation and adaptation	Cyber-attacks

■ Economic
 ■ Environmental
 ■ Geopolitical
 ■ Societal
 ■ Technological

8 in 10 people in the world are breathing polluted air above the WHO's safe limit



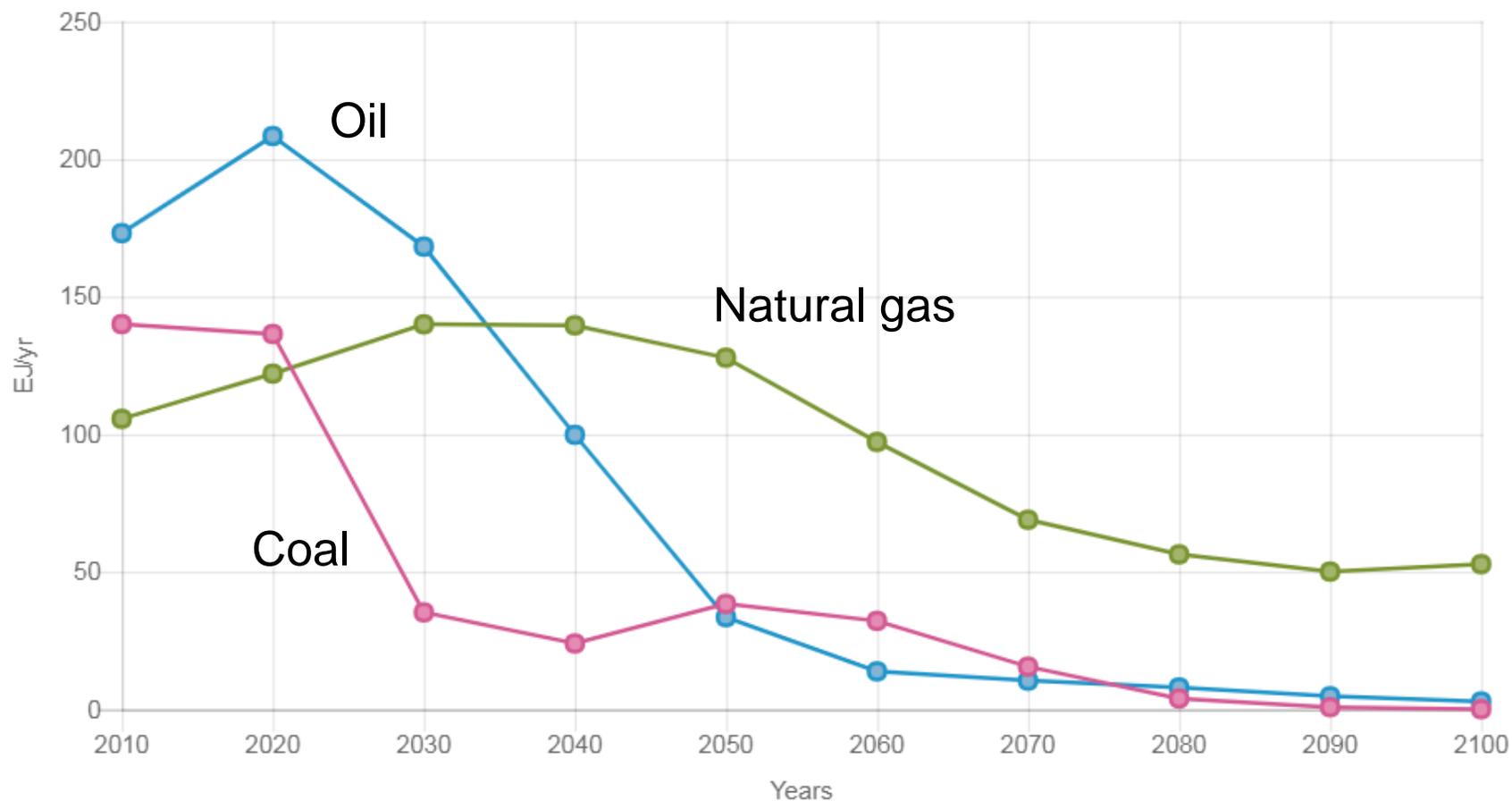
Sources: Nasa Socioeconomic Data and Applications Center; UN; European Commission, Joint Research Centre

* Urban agglomeration

**PM2.5 value of 10 micrograms per cubic metre, annual average

Visual journalism: Steven Bernard © FT

Fossil fuel demand need to decline sharply to reach 1.5 degree goal IPCC P2 scenario

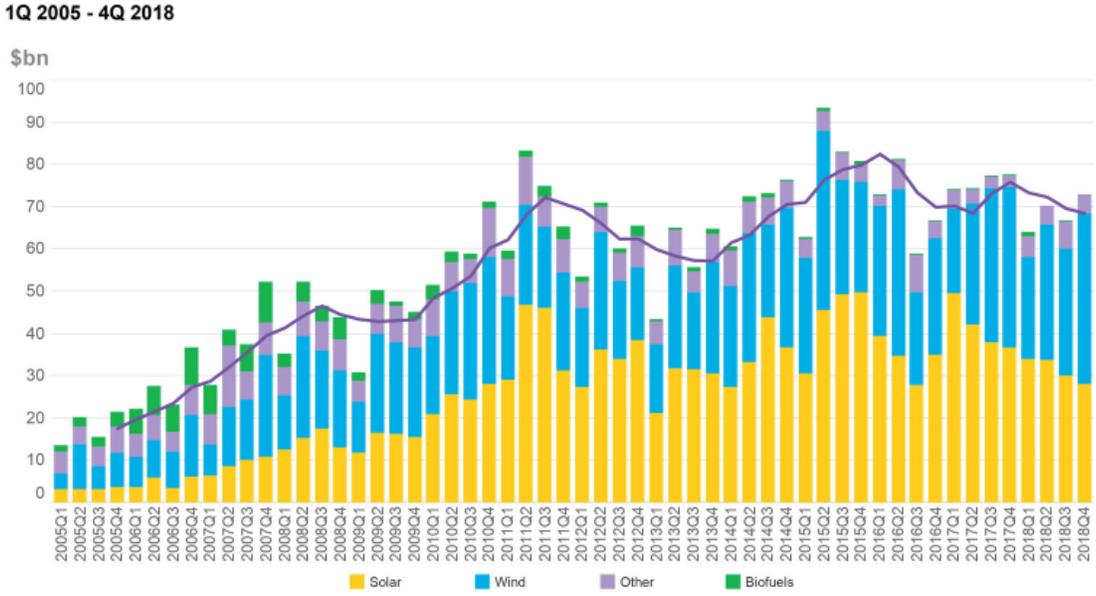


© IAMC 1.5°C Scenario Explorer hosted by IIASA <https://data.ene.iiasa.ac.at/iamc-1.5c-explorer>

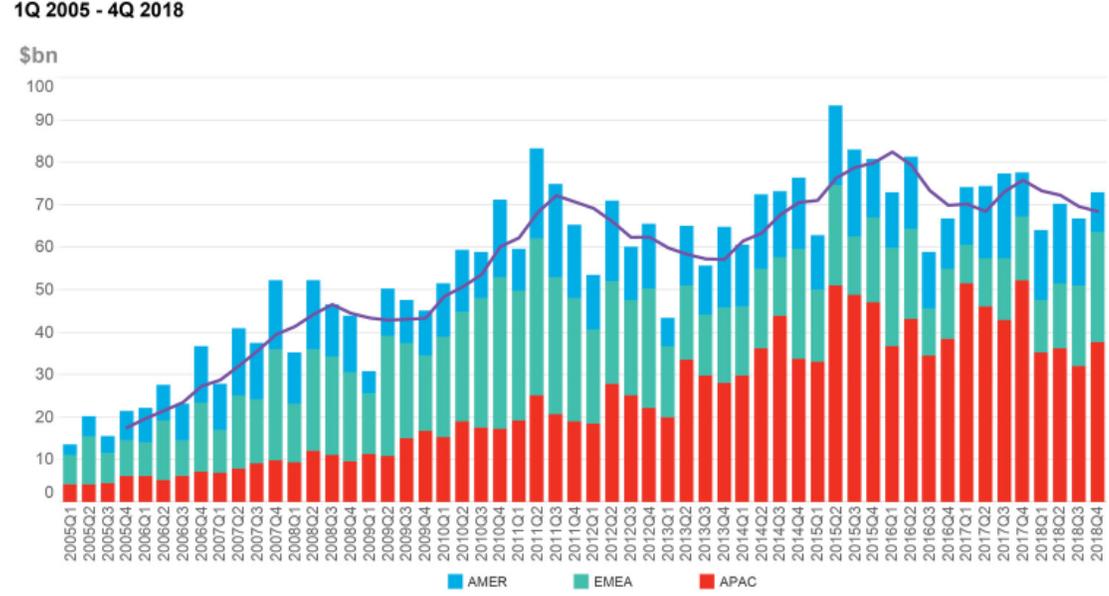
Source: IIASA

Global investments in renewables have levelled out, but production capacity is increasing as production costs are falling sharply. Investments in Europa are picking up

Global investments in renewable energy split on energy source

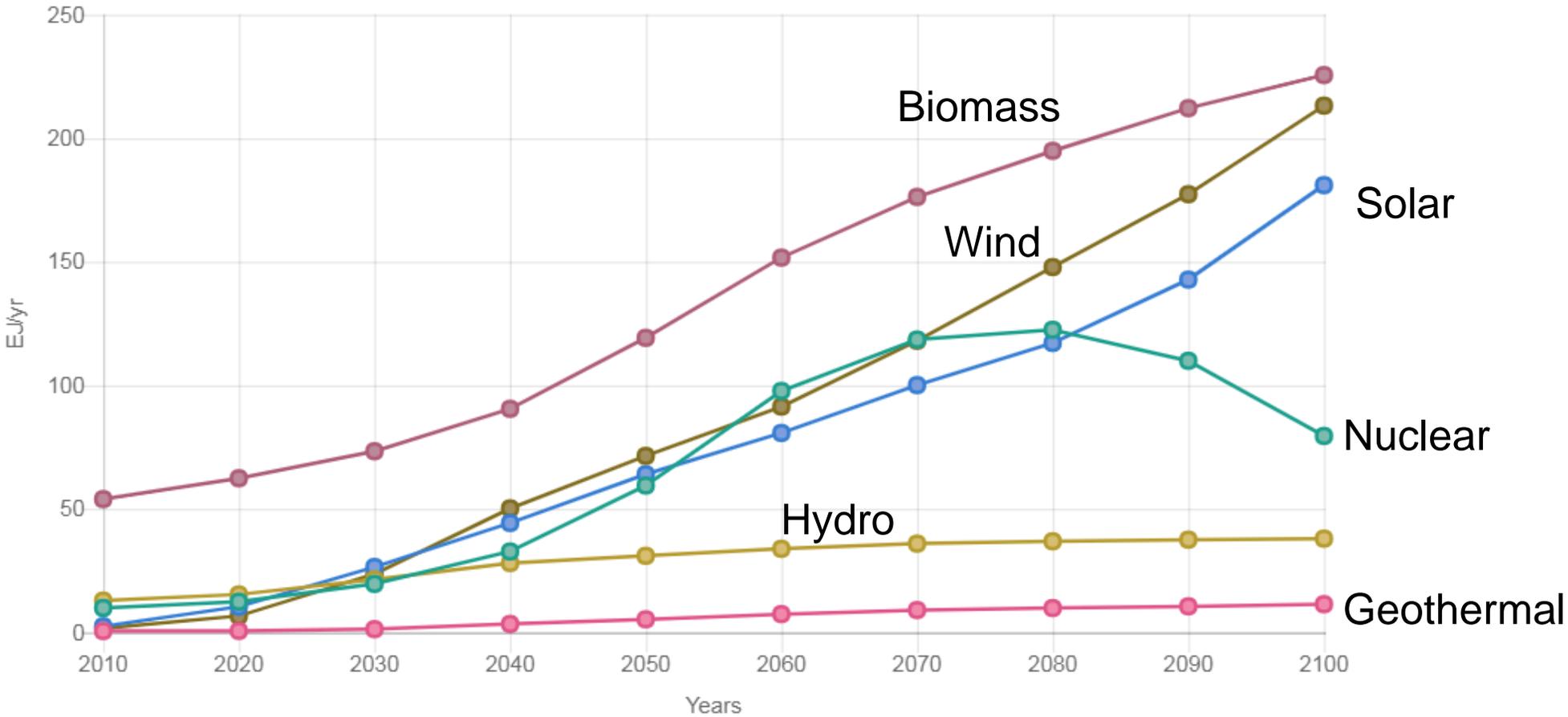


Global investments in renewable energy split on geographic area



Source: BNEF

Production of renewables need to rise sharply to meet the future demand for green energy



© IAMC 1.5°C Scenario Explorer hosted by IIASA <https://data.ene.iiasa.ac.at/iamc-1.5c-explorer>

Source: IIASA



SUSTAINABLE DEVELOPMENT GOALS



Source: UN in collaboration with Project Everyone

What is Sustainable Development?

Brundtland commission's definition:

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”





The financial sector has a pivotal role in society by providing funding for economic activities to create economic growth, employment and social welfare

**Capital is a powerful tool for driving
CHANGE**

BlackRock stakes claim on 'sustainable investing' revolution

“Sustainable investing will be a core component for how everyone invests in the future,” the [BlackRock](#) chairman and chief executive said in an interview with the FT. “We are only at the early stages.”

“We are going to see evidence over the long term that sustainable investing is going to be at least equivalent to core investments. I believe personally it will be higher,” he said.

Larry Fink: 'We are going to see evidence over the long term that sustainable investing is going to be at least equivalent to core investments. I believe personally it will be higher' © FT montage; Bloomberg

BLACKROCK



OCEAN SUSTAINABILITY

EXPECTATIONS
TOWARDS
COMPANIES



NORGES BANK
INVESTMENT MANAGEMENT

01 | 2018

THE SUSTAINABLE DEVELOPMENT GOALS AND THE GOVERNMENT PENSION FUND GLOBAL

ASSET MANAGER PERSPECTIVE

CLIMATE CHANGE STRATEGY

EXPECTATIONS
TOWARDS
COMPANIES

Investors shun climate risk

Tackle climate risk
say world's biggest investors

UN summit urged to end all carbon taxes on emissions

Church of England and large Australian banks among shareholders who pushed for



▲ Global investors managing \$32tn are urging UN summit to end all carbon taxes on emissions
Koerner/Getty Images



▲ Glencore has promised to prioritise investment in infrastructure and transport. Photograph: Carly Earl/The Guardian

Saudi Aramco chief executive
faces 'crisis of perception'



© Reuters

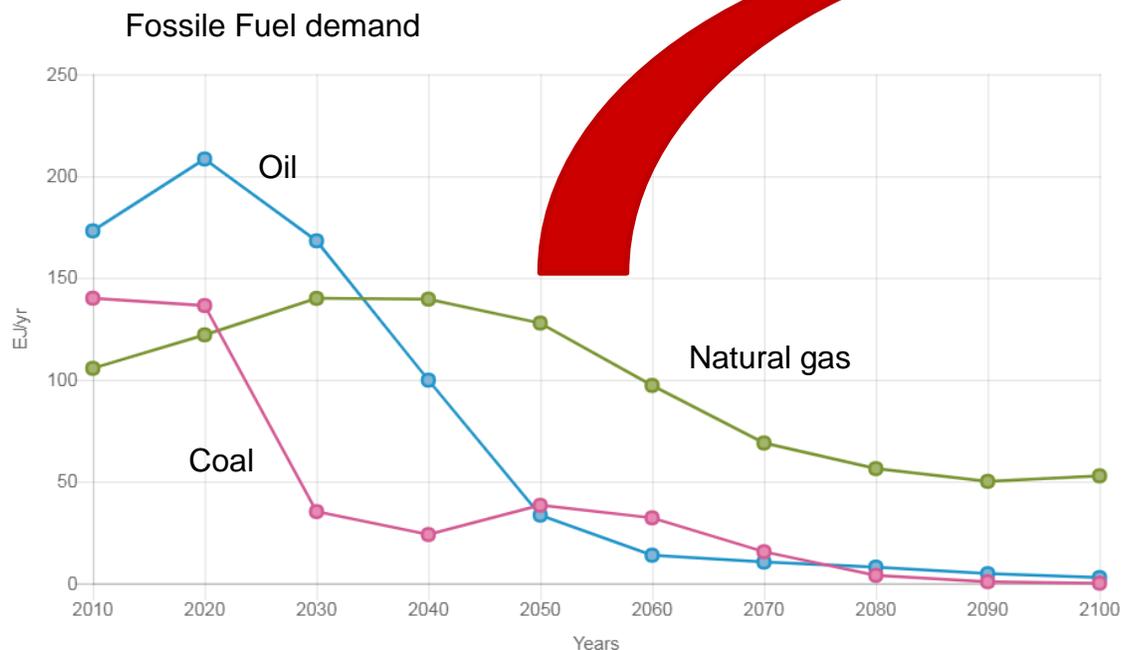
Norway's \$1tn wealth fund set to cut oil and gas stocks

Big groups reprieved as government recommends divestment from upstream producers

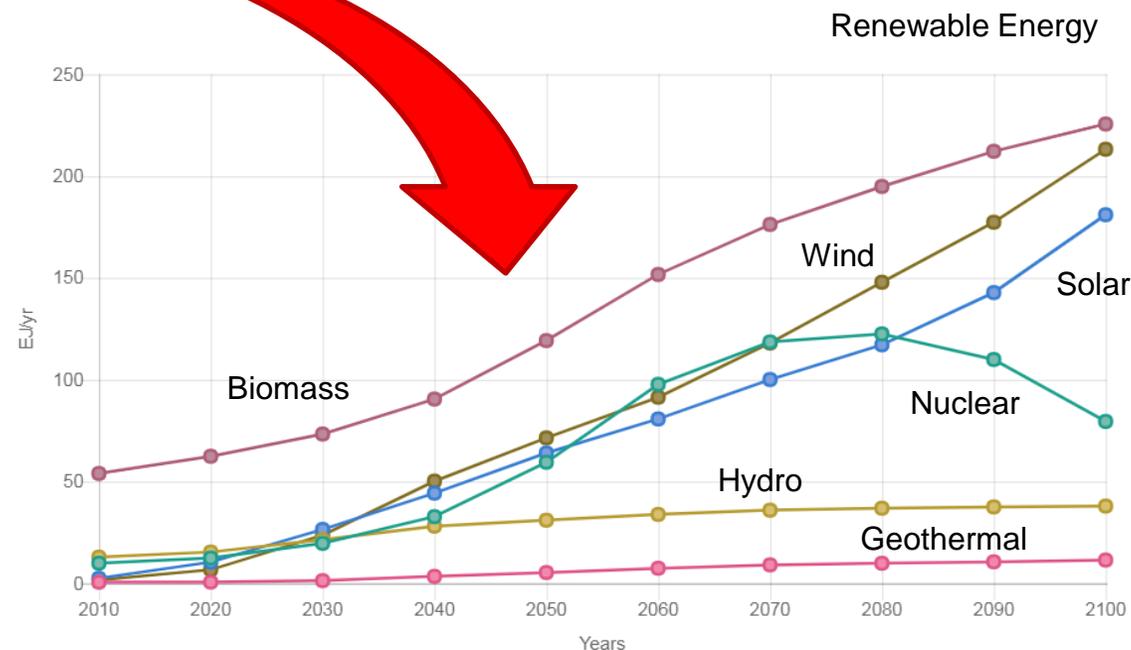


There have been increasing fears in Norway over the impact of a sustained drop in energy prices © Bloomberg

The UN IPCC 1.5 degree scenario (P2 scenario), split on energy source



© IAMC 1.5°C Scenario Explorer hosted by IIASA <https://data.ene.iiasa.ac.at/iamc-1.5c-explorer>



© IAMC 1.5°C Scenario Explorer hosted by IIASA <https://data.ene.iiasa.ac.at/iamc-1.5c-explorer>

**Transition Risk moving from fossil to renewable and green energy:
Changes in laws, regulations, markets, investors' & consumers' preferences may lead to unexpected massive movements in capital flows**



**We need a correct PRICE
ON SUSTAINABILITY AND
CLIMATE RISK to avoid
misallocation of capital**

An aerial photograph of a large log raft floating on a river. The raft is composed of numerous bundles of logs, each secured with thin wires. The logs are arranged in a grid-like pattern, creating a textured surface of brown and tan. The water is a deep, dark blue, providing a strong contrast to the light-colored wood. The perspective is from directly above, looking down at the raft as it moves through the water.

ESG

Environmental Social Governance

ESG – Environmental, Social and Governance

Environment

GHG emissions

Air quality

Energy & Fuel

Water & Wastewater

Waste & hazardous materials

Biodiversity impacts

**Lifecycle impacts of
products & services**

Material sourcing

Social

**Human rights & community
relations**

**Data security and customer
privacy**

**Human capital & labour
practices**

Health and safety

Product quality and safety

Supply chain management

Business Ethics (Governance)

Transparency of payments

Competitive behaviour

**Regulatory capture and
political influence**

Fair disclosure & labelling

Fair marketing & advertising

Pricing of climate risk (or sustainable risk) will affect the direction in which capital moves.

In the future, a large environmental, social or governance impact could give

Lower credit rating

Worsen credit terms/

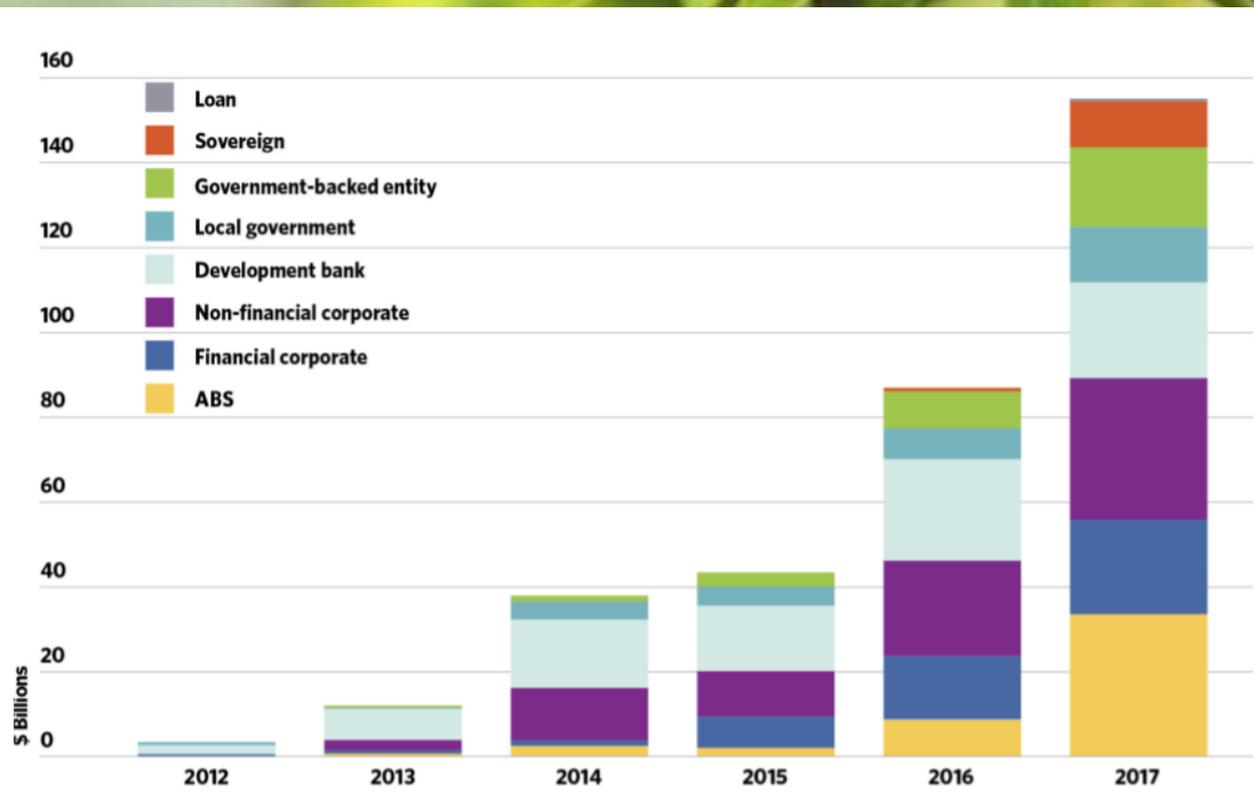
More expensive loans

**Limited or no access to capital and
new financing**

Climate changes have both challenges AND OPPORTUNITIES

– lower greenhouse gas emissions can lower your financing costs

Green bond market increasing fast



Green loans extend the product offering

PRIVAT > LÅN OCH KREDITER > GRÖNA BOLÅN

Gröna bolån – för dig som bor miljövänligt

Bor du i eller planerar att köpa ett energieffektivt boende? Då kan du få 0,10 procentenheter rabatt med Gröna bolån.

[Ansök om bolån](#)

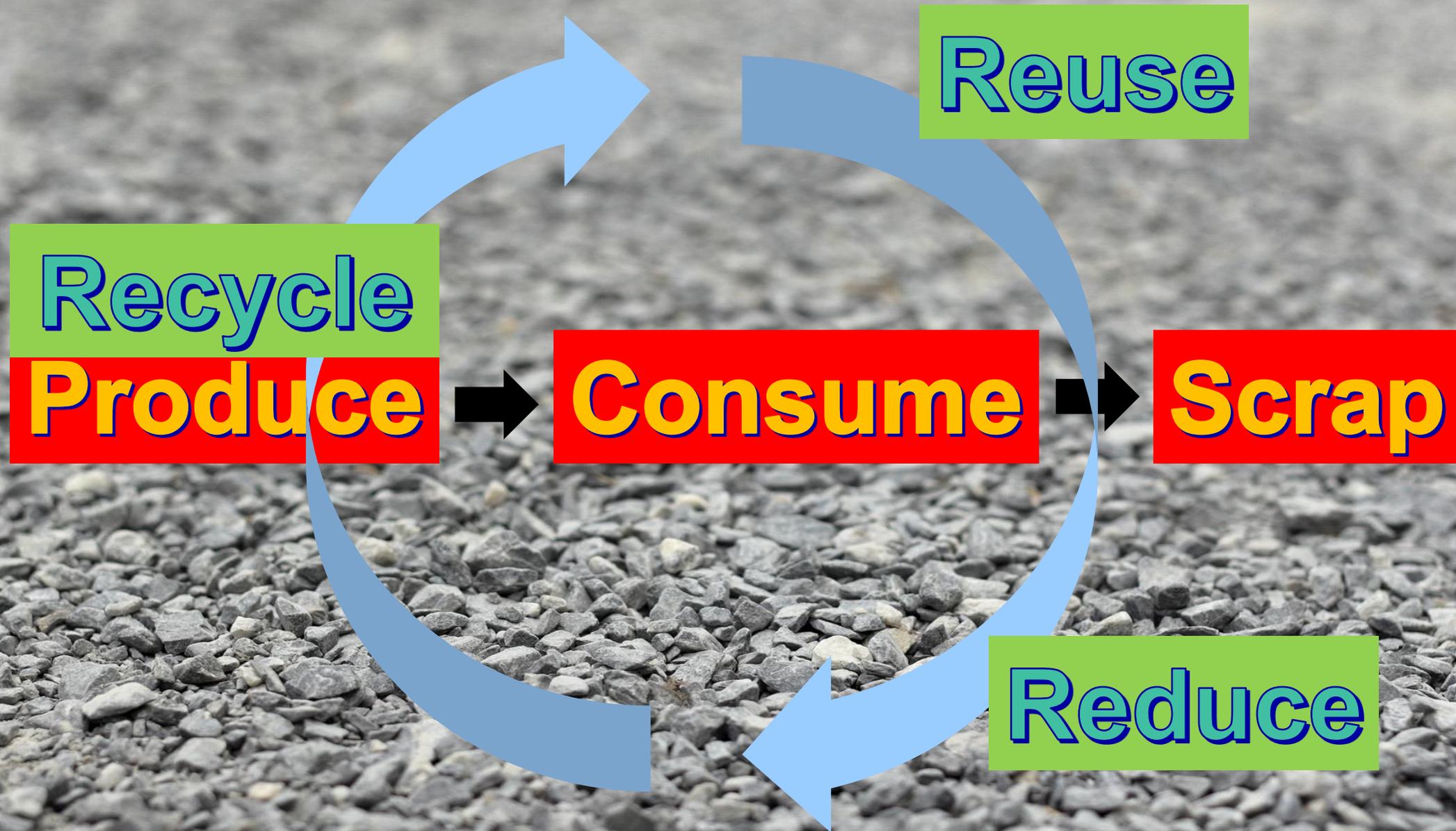
FÖRETAG > FINANSIERA > GRÖNA FÖRETAGSLÅN

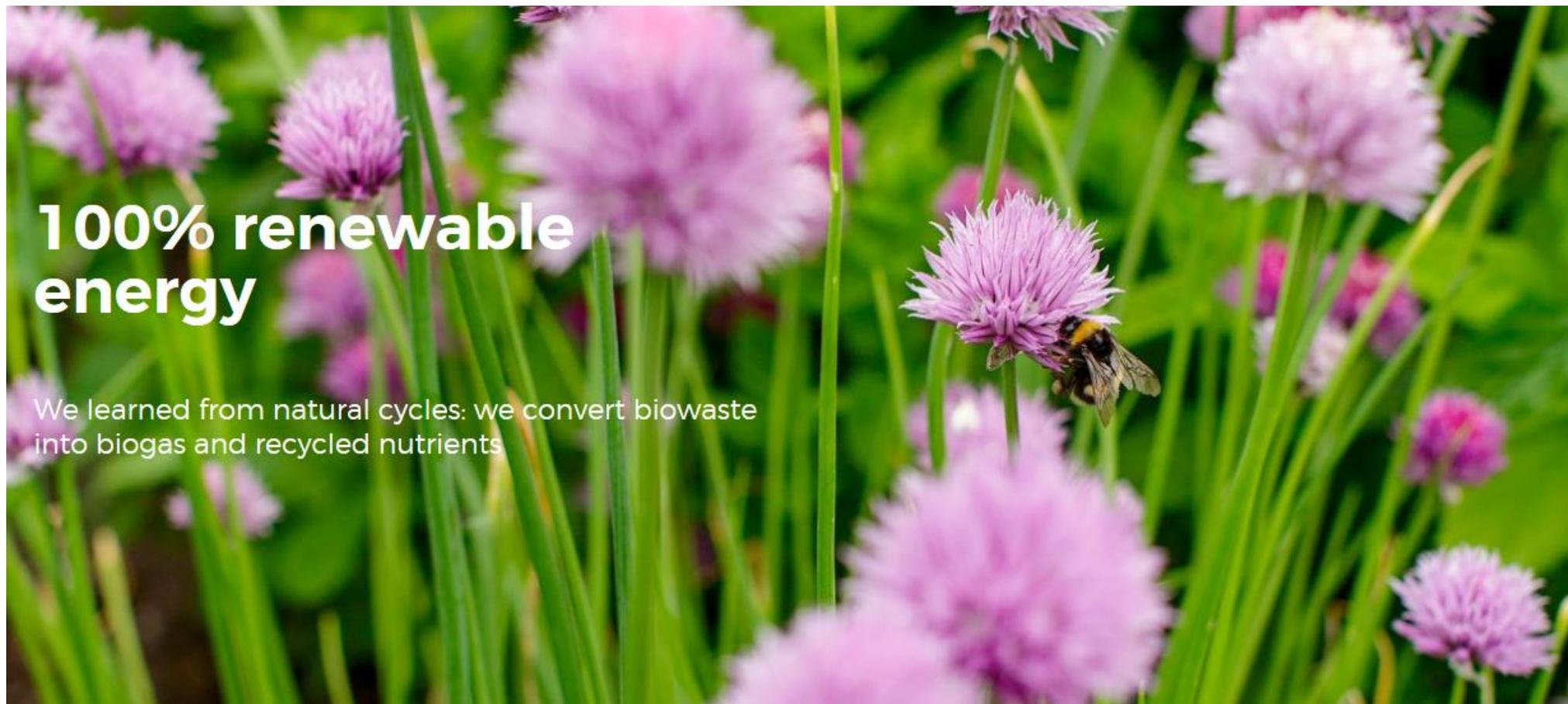
Gröna Företagslån

Låna klimatsmart av oss för att finansiera investeringar som minskar miljöpåverkan.

[Ring och ansök 0771-350 360](#)

From linear to circular business models





**100% renewable
energy**

We learned from natural cycles: we convert biowaste
into biogas and recycled nutrients

Source: Gasum

Skangas Fuels Its First Ship with Liquefied Biogas



Skangas has supplied Furetank's chemical/product tanker M/T Fure Vinga with liquefied biogas (LBG), representing the company's first delivery of this renewable and environmentally friendly fuel to a marine firm.

The fueling took place at the Port of Gothenburg,

Waste-Fueled Cars Face Steep Gradient Ahead to Rival EVs

80%

The greenhouse gas reduction potential in using biogas instead of gasoline to power a vehicle.

Dead fish to power cruise ships

Norwegian company to fuel liners with biogas made from leftovers of fish processing



▲ Hurtigruten aims to have converted at least six of its vessels to use biogas, liquefied natural gas and large battery packs by 2021. Photograph: Franz Gingele/EPA



Think Denmark
White papers for a green transition

FROM SUSTAINABLE BIOMASS TO COMPETITIVE BIOENERGY

Insights into Danish bioenergy solutions

INSIDE THIS WHITE PAPER

- Technical and regulatory approaches to encourage bioenergy use
- State-of-the-art bioenergy solutions
- Bioenergy challenges and potentials

State of Green
With the Future, Think Green

Source, BNEF, The Guardian, State of green

Drammen is producing biogas from sewage sludge and food waste...



Aktører: Veolia Miljø, AGA AS

...to supply green energy to the buses in Oslo

Thank you!

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Thank you!

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