



KR-DE ROAD TO 2050:

한 - 독 탄소중립 2050:

FINANCING CLEAN ENERGY TRANSITION

에너지 전환을 위한 금융



Inquiries (문의) : Sunwoo Lee 이선우, SFOC, sunwoo.lee@forourclimate.org



Scan QR code

September 30th, 2021 - Thursday

Location : Glad Hotel, Yeouido, Seoul

TIME (KST)

15:00 - 15:05	INTRODUCTION AND ZOOM HOUSKEEPING Joojin Kim, Managing Director for Solutions for Our Climate
15:05 - 15:10	CONGRATULATORY SPEECH Soyoung Lee, Member of the National Assembly of the ROK (Democratic Party)
15:10 - 15:15	WELCOME SPEECH Michael Reiffenstuel, H.E. Ambassador of Germany, Embassy of Germany in Korea
15:15 - 15:30	KEYNOTE : GLOBAL ENERGY ROADMAP & NET ZERO 2050 Tom Howes, Head of Energy and Environment Division, IEA
15:30 - 15:45	FINDINGS OF THE KOREA OIL AND GAS FINANCE REPORT Sejong Youn, Climate Finance Program Director, Solutions for Our Climate
15:45 - 16:15	CASES AND STATUS FROM GERMANY Christof Wegner, Deputy Head of Division, German Ministry for Economic Affairs and Energy
16:15 - 17:15	ROUNDTABLE DISCUSSION : ARRIVING AT ENERGY TRANSITION FINANCE Moderator : Sejong Youn Tom Howes, Head of Energy and Environment Division, IEA Peter Winkler, Deputy Head of Mission, Embassy of Germany in Korea Christof Wegner, Deputy Head of Division, German Ministry of Economic Affairs & Energy Seung Dal Baek, Vice Preident of K-SURE / Project Finance Department Head Yongho Son, Executive Director of Samsung C&T and Team Lead on Gangneung Project
17:15 - 17:30	CONCLUDING REMARKS Gerd Leipold, Program Director, Climate Transparency





온라인 자료집
QR코드

2021년 9월 30일 목요일

글래드 여의도
TIME (KST)

15:00 - 15:05	행사 안내 및 개회 김주진, 기후솔루션 대표
15:05 - 15:10	축사 국회의원 이소영 (더불어민주당)
15:10 - 15:15	환영사 미하엘 라이펜슈틀, 주한독일대사
15:15 - 15:30	기조발표 : 2050 글로벌 에너지 로드맵 툼 하우스, 국제에너지기구 에너지 & 환경부 국장
15:30 - 15:45	한국 공적금융의 화석연료 투자 윤세종 변호사, 기후솔루션 기후금융이사
15:45 - 16:15	에너지 전환을 위한 금융의 역할 : 독일의 경험 크리스토프 웨그너, 독일연방 경제에너지부 부과장
16:15 - 17:15	ROUNDTABLE DISCUSSION : ARRIVING AT ENERGY TRANSITION FINANCE 진행 : 윤세종 변호사, 기후솔루션 툼 하우스, 국제에너지기구 에너지 & 환경부 국장 피터 빙클러, 주한독일대사관 부대사 크리스토프 웨그너, 독일연방 경제에너지부 부과장 백승달, 무역보험공사 프로젝트금융 본부장 손용호, 삼성물산 상무/강릉사업지원팀장
17:15 - 17:30	폐회사 거드 레이플드, 기후투명성 프로그램 이사



<탄소중립 2050 : 에너지 전환을 위한 금융> 축사

안녕하십니까? 더불어 민주당 탄소중립특별위원회 실행위원회 간사를 맡고 있는 경기 의왕/과천 국회의원 이소영입니다.

오늘 '탄소중립 2050 : 에너지 전환을 위한 금융'을 주제로 주한 독일 대사관과 기후솔루션, 그리고 Climate Transparency와 함께 이 세미나를 개최하여 매우 뜻깊습니다. 오늘 이 자리를 위해 발표와 토론을 위해 바쁘신 가운데 참여해 주신 여러분들께도 깊은 감사의 말씀을 전합니다.

2021년에도 기후위기로 인한 재난이 지구 곳곳에서 발생하고 있습니다. 우리나라의 기록적인 폭염, 캐나다와 미국의 산불과 폭염, 유럽의 전례 없는 홍수 등 일상화된 재난은 기후위기의 심각성에 경종을 울렸습니다.

기후변화의 핵심은 에너지 전환입니다. 화석연료에 대한 의존도를 줄이고 재생에너지를 중심으로 한 탄소중립 경제로 산업과 경제의 구조를 전환하기 위해서는 금융의 녹색 전환도 빠르게 추진해 나가야 합니다. 유럽투자은행(EIB)과 영국 수출금융은 올해까지 화석연료사업에 대한 투자를 중단할 것을 약속했고, 미국 재무부도 최근 다자개발은행의 신규 화석연료 사업에 대해 원칙적으로 반대하겠다는 입장을 밝혔습니다.

우리도 이러한 논의가 필요한 시점에 왔습니다. 2050년 탄소중립 목표를 달성하고 우리 사회와 경제의 구조를 바꾸는 근본적인 전환을 위해선 금융의 핵심적인 역할이 필요합니다. 우리 국회는 지난 달 「탄소

중립기본법」을 제정하였고, 내년 3월에 시행을 앞두고 있습니다. 탄소 중립 달성의 법적 근거가 마련된 만큼 금융 부문의 녹색 전환도 본격적으로 시작되어야 할 것입니다.

탈석탄과 에너지 전환, 그리고 제조업 중심의 산업 국가라는 점에서 독일과 한국은 서로 많이 닮아있습니다. 오늘 토론회를 통해 양국의 경험을 공유하고, 의미 있는 진전을 이룰 수 있기를 바랍니다. 그리고 탄소중립 달성을 위한 과정에서 양국의 협력이 더욱 돈독해지기를 희망합니다. 오늘 토론회에 참석해주신 여러분께 다시 한 번 진심으로 감사드립니다.

감사합니다.

Honorable Lee So-young,

Ladies and Gentlemen,

Thank you for joining our seminar. Let me also thank our partners, „Solutions for Our Climate“ and „Climate Transparency“, which have co-organized this event together with the German Embassy. We are grateful to them as cooperation with Civil Society is crucial on the issue of climate mitigation and adaptation .

The UN Climate Summit COP 26 in Glasgow is around the corner. The recent IPCC report shows what is at stake: Achieve Net Zero by mid-century or earlier to safeguard livelihoods all over the globe and ensure the future of our economies!

The good news is: A lot has happened in the past year – despite Covid!

In Germany, we have tightened our recent "Climate Change Act". Our highest court has tasked us with ensuring that today's decision-making does not unfairly burden the younger generation after 2030.

Germany now intends to be climate neutral by 2045. In addition, we are setting more ambitious medium-term climate targets. Instead of reducing emissions by 55% (EU goal) we aim for at least 65% by 2030.

President Moon's announcement to end international public coal finance is also promising. It is another milestone after the Korean government's commitment to become carbon neutral by 2050. We also welcome President Moon's pledge to an ambitious revised climate goal 2030 in line with net zero. We remain hopeful that Korea's national contribution goes beyond the 40%-threshold which would bring not only Korea but the world even closer to the Paris climate goals.

There is no doubt that the transformation of the energy sector, away from coal, oil and gas, brings with it challenges, but the benefits outweigh the risks by far. Cheaper, cleaner and smarter alternatives already exist. In Germany, almost 50 % of electricity comes from renewables. And according to the provisional Korean Carbon Neutrality 2050 Scenario, we expect a rapid increase in renewables here in Korea, too and we will need to see the financial sector transitioning to clean energy solutions.

While we see some movement into this direction, we still need a giant leap to turn our 1,5 degrees commitments into reality. With this seminar we wanted to touch upon an area that needs further attention. In fact, today's clean energy investment remains far short of what will be required to avoid severe impacts from climate change. It would need at least to double in the 2020s to be consistent with a well-below-2°C temperature outcome.

So, the decisive question is: How can both governments and private investors best play their part to tackle this challenge and specifically, how governments can set the right regulatory conditions and set the right incentives to leverage the maximum amount of private investment into clean energy.

The EU is set to become the first climate-neutral continent by 2050. To achieve this, the new EU taxonomy will facilitate sustainable investment decisions. The European Investment Bank is no longer financing fossil fuels, including gas.

One other instrument that has the potential to channel clean transition technology is export finance. The gap between today's investment trends and a sustainable pathway is largest among emerging market and developing economies: They account for nearly two thirds of the global population, but only for one third of global investment - and an even smaller 20% share of clean energy investment.

However, providing the financial means for the energy transition is not the only bottleneck that requires our urgent attention. The IEA warns: Currently, climate pledges and sustainable finance are not translating into large increases in actual spending on clean energy projects. In short: There is a shortage of projects rather than money.

Hence government policies, regulation and incentives must not stop at providing the right finance environment. Smart rules and procedures, incentivising standards and support for innovation need to go hand in hand with financing concepts.

As industrialized, export-oriented nations with a focus on manufacturing both Korea and Germany have an interest in sustainable and affordable energy supply. For long, we have been cooperating in this area, inter alia through our energy partnership. Together with Korea, we are working on a G20 Sustainable Finance Roadmap in order to better coordinate policy action worldwide.

I am sure that this workshop will be beneficial to further these discussions. I am looking forward to all the presentations. Let me thank in particular our keynote speaker from the IEA, Tom Howes, Christoph Wegner from the Ministry of Economic Affairs and Energy and Sejong Youn from Solutions for our Climate! Germany stands ready to further share its experience and to closely work together with Korea to achieve our common goals for a better future..

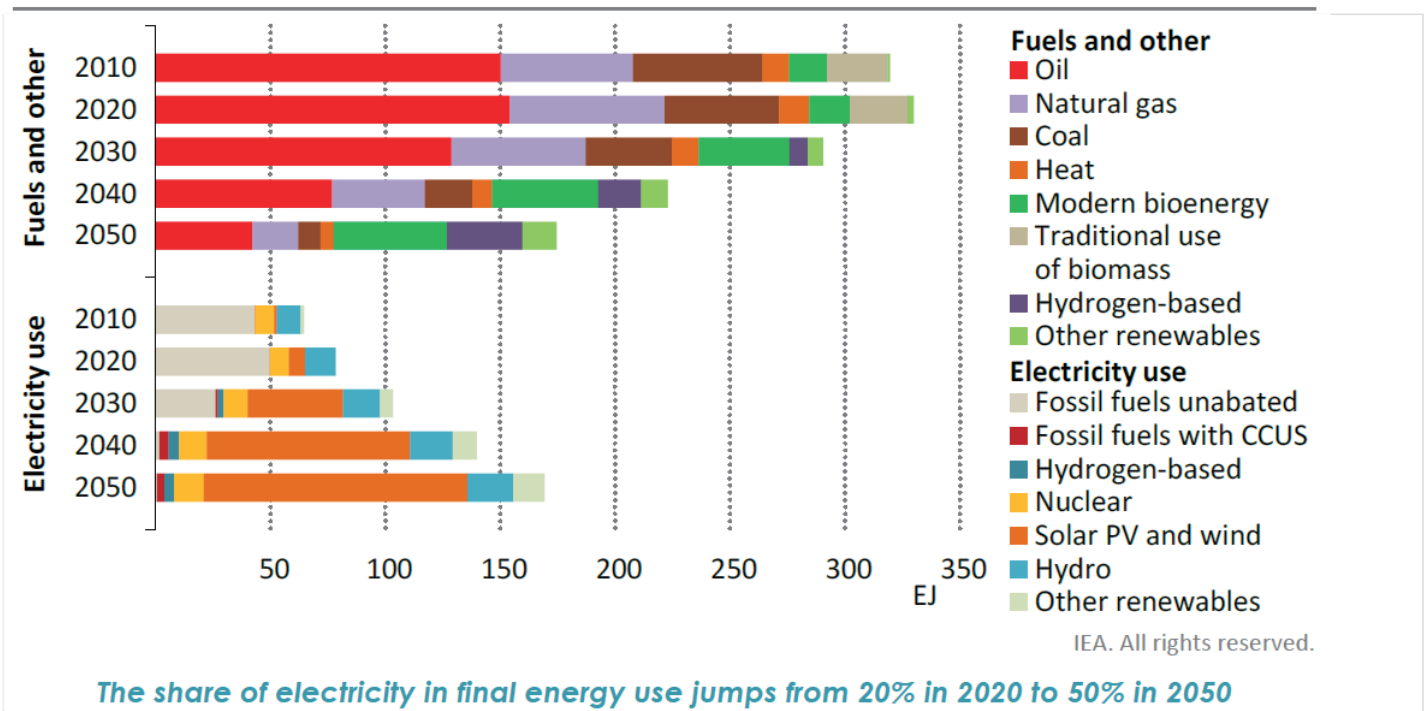


The road to 2050: Financing the Clean Energy Transition

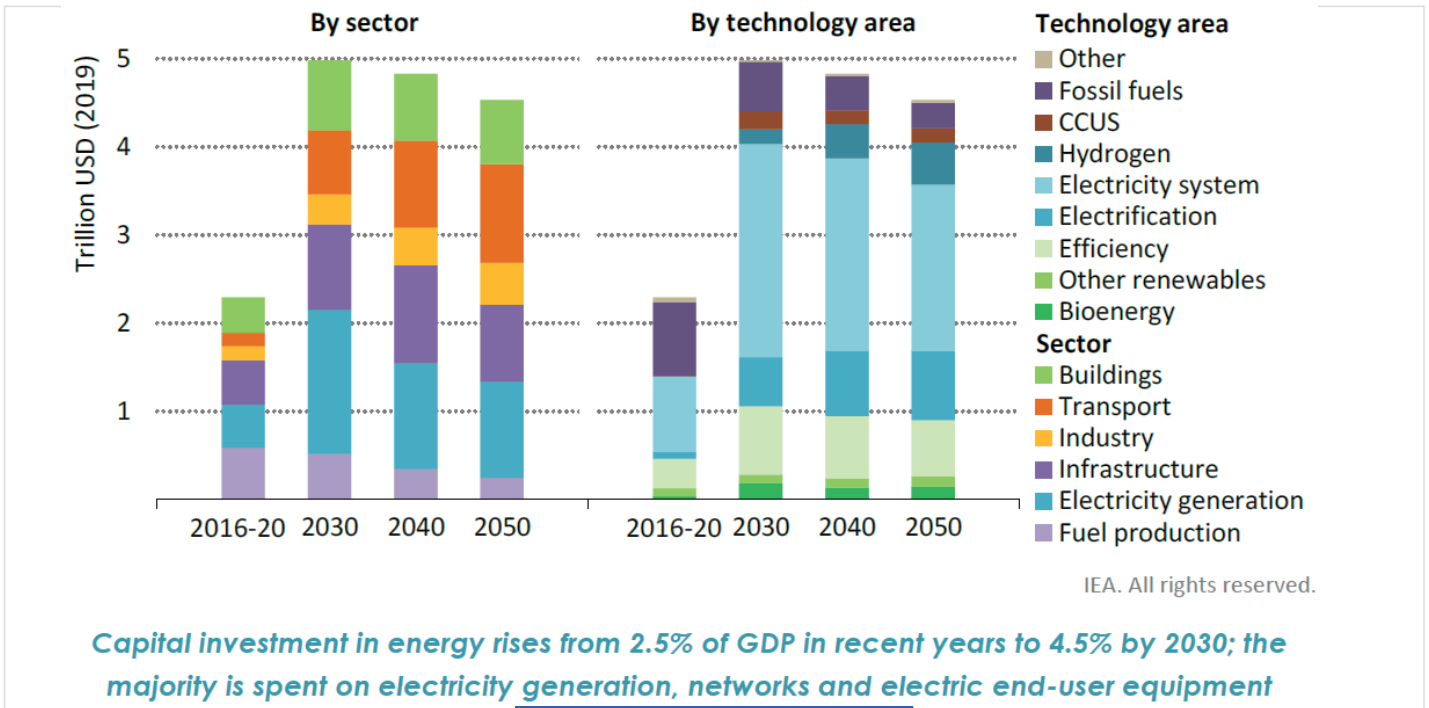
Tom Howes, Head of Energy and Environment Division
30 September 2021



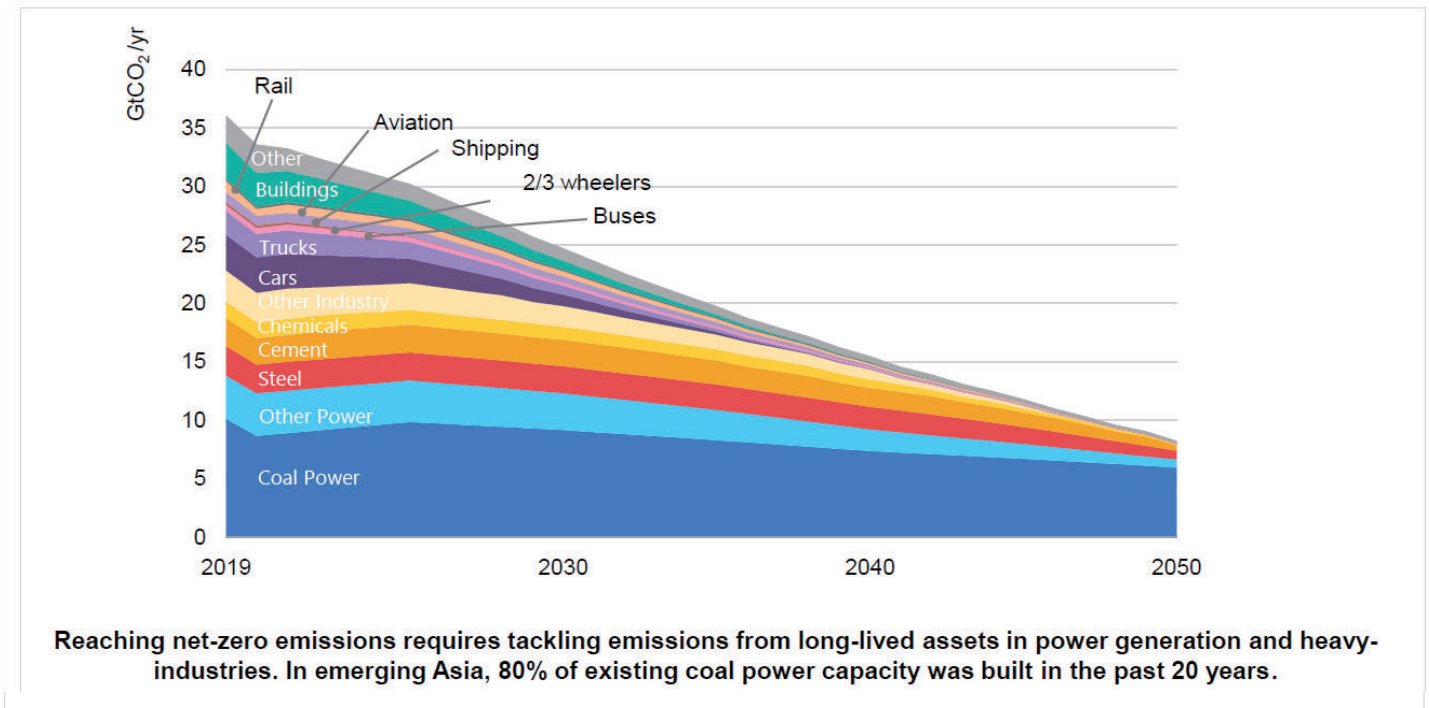
Global total final consumption by fuel in the NZE scenario



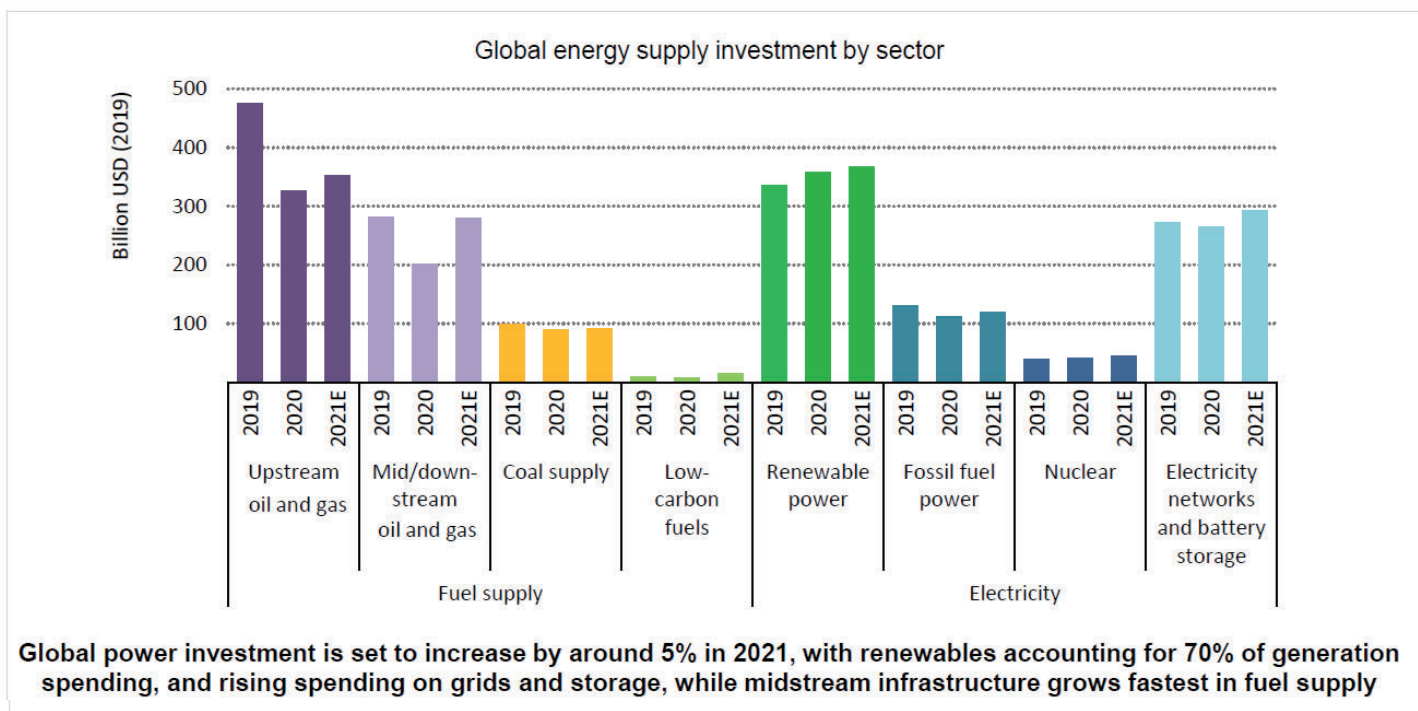
Average annual capital investment in NZE scenario



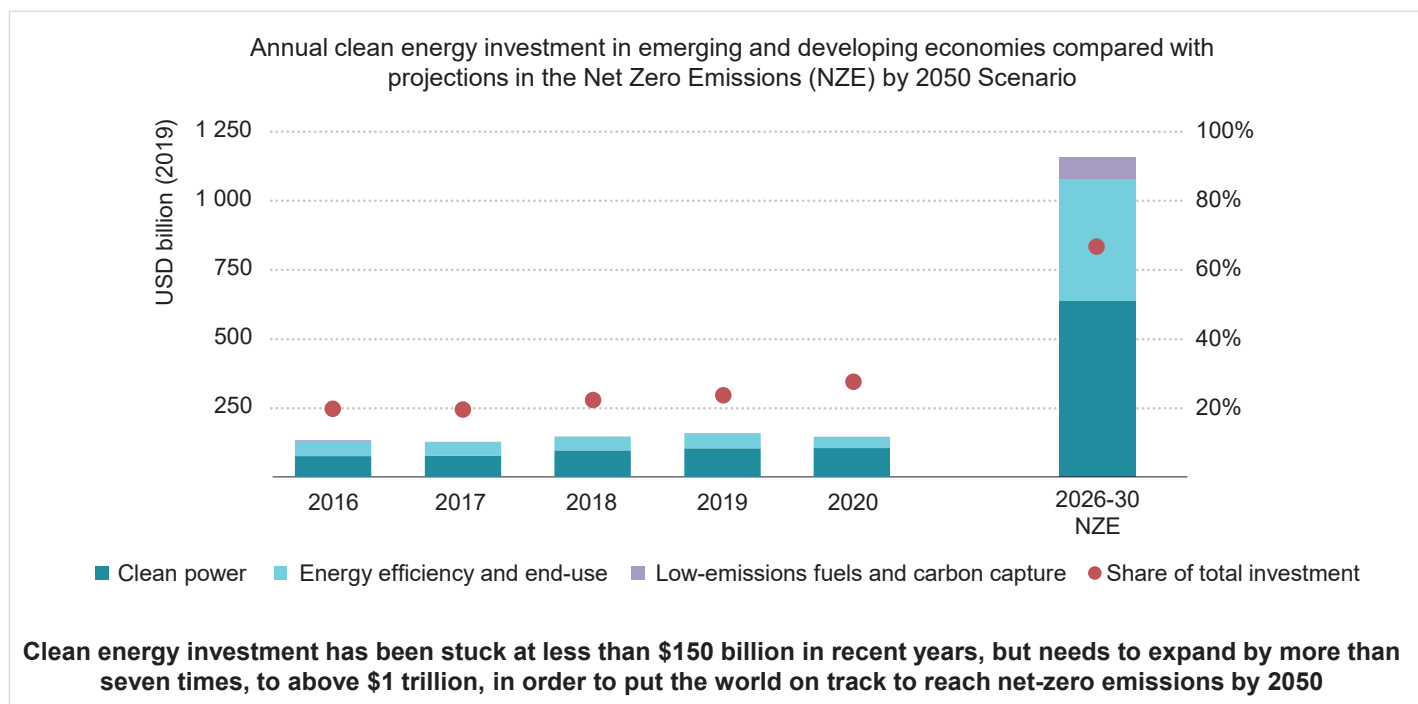
Our existing energy infrastructure is too big to ignore



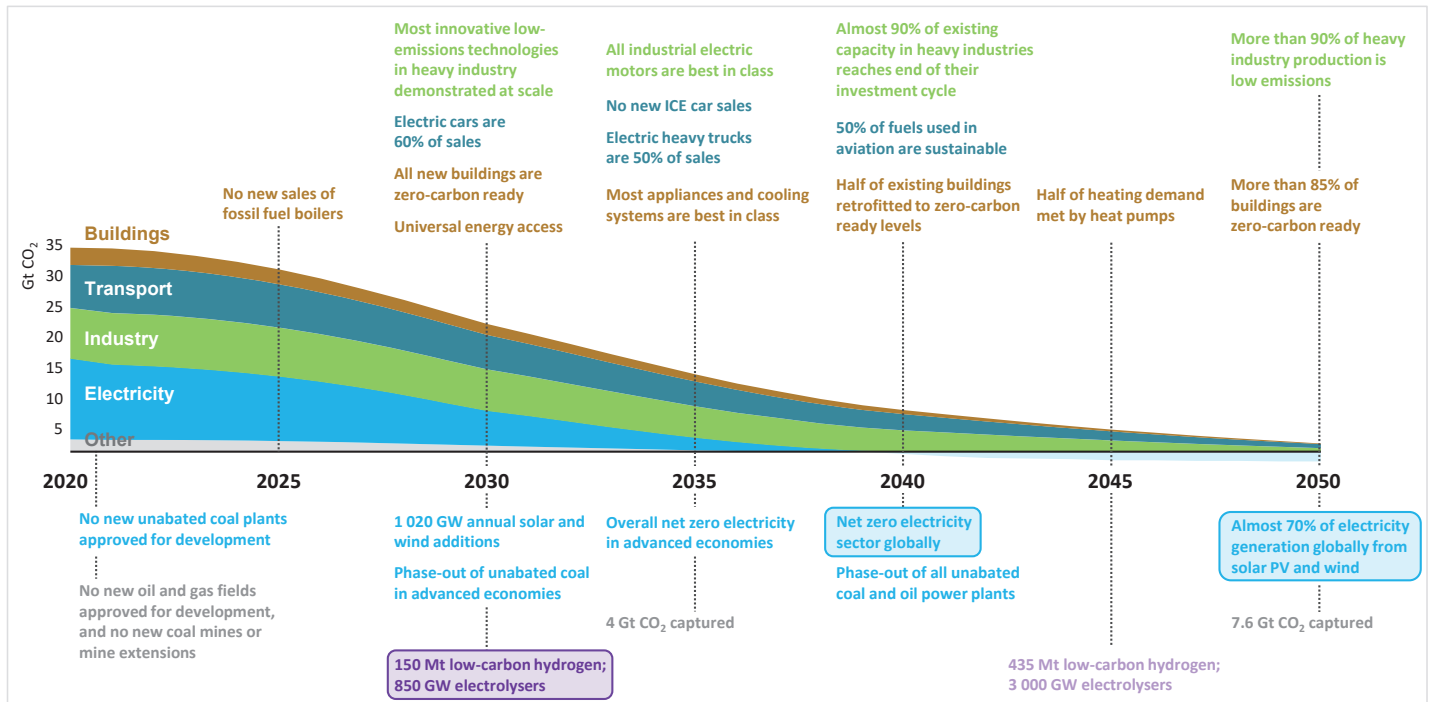
Power, led by renewables, remains the largest part of supply spend



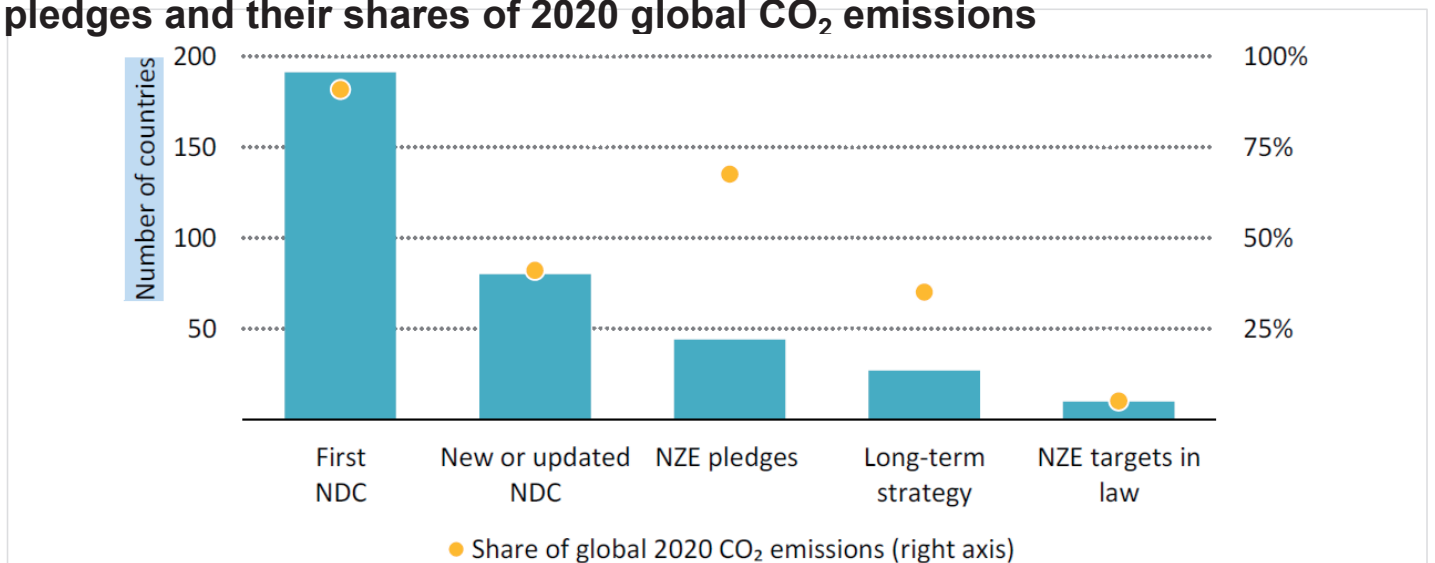
A surge in clean energy investment is needed to change course



Set near-term milestones to get on track for long-term targets



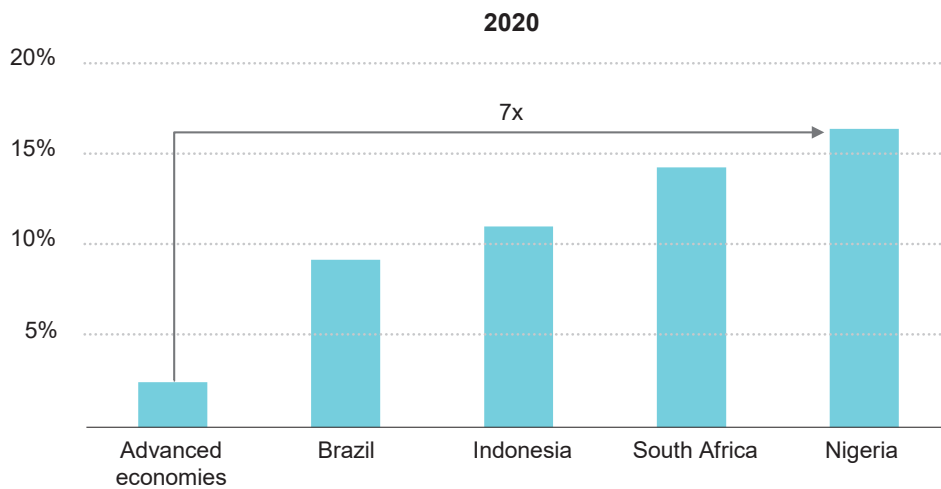
Number of countries with NDCs, long term strategies and net zero pledges and their shares of 2020 global CO₂ emissions



Around 40% of countries that have ratified the Paris Agreement have updated their NDCs, but net zero pledges cover around 70% of global CO₂ emissions

Capital is significantly more expensive for those areas most in need

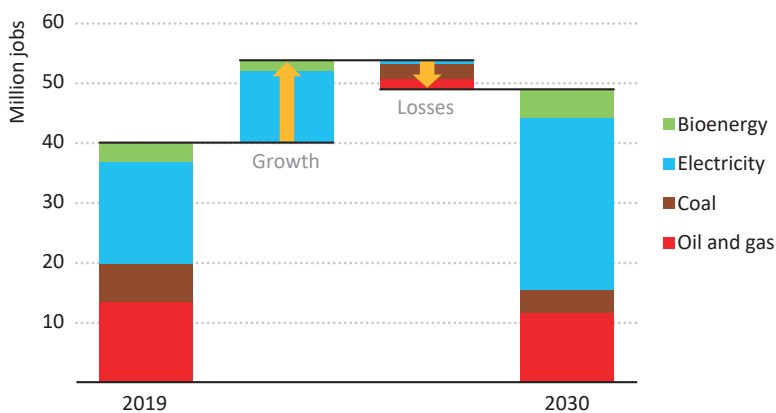
Indicative cost of capital by economy (nominal base rates plus market risk premium)



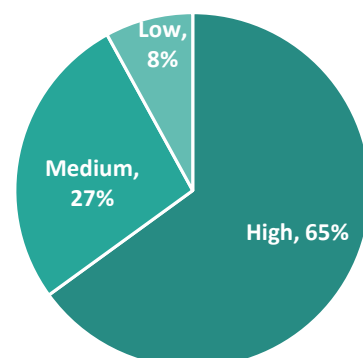
Although financing costs have come down in many countries, the cost of capital is up to seven times higher in emerging and developing economies, raising the bar for projects to access debt finance and clear equity hurdle rates

Clean energy jobs will grow strongly but must be spread widely

Jobs in energy supply in the NZE



Skill level of new workers in the NZE, 2030



By 2030 there are 14 million jobs created in global energy supply, and a further 16 million in clean energy end-uses; but inclusive policies are needed to support reskilling & diversification in fossil-fuel dependent communities

Redouble international support

Strong strategic mandate for public finance institutions

Better use of blended finance Boost delivery of

Get international capital markets engaged in clean energy in emerging and developing markets **international climate finance**

Tackle cross-cutting investment issues

Better disclosure of climate risks *Empower local entrepreneurs*
 Put state-owned utilities on a firmer financial footing **More robust banking and capital markets**
Get price signals right
Make it easier to prepare clean energy projects

Push on clean power & efficiency

Sustainable energy access for all

More electrified and efficient mobility **Harness investor readiness**
Embed efficiency in all new buildings and appliances *Expand and modernise grids* **to back renewable power**

Get to grips with the toughest tasks

Prepare the ground for low-carbon fuels and industries *Innovative strategies for cement, steel, chemicals*
 Leave no one behind as countries leave coal
A new development model for producer economies



Korea's Public Financing for Oil and Gas

2021.9.30.



Sejong Youn

Copyright © 2016 SFOC Inc. All rights reserved.

South Korean Public Finance Steps Out of Coal

S.Korea's Moon vows to end new funding for overseas coal projects

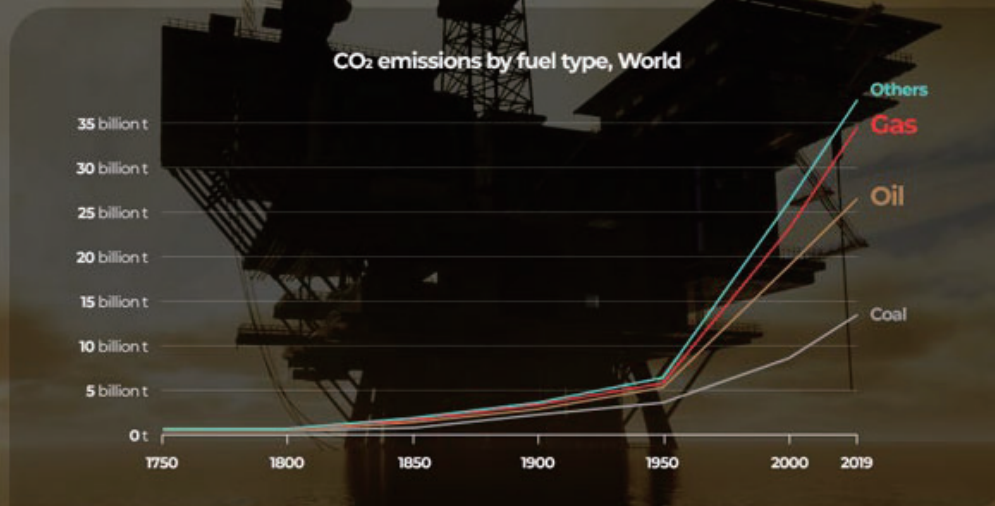


https://pds.joins.com/news/component/htmlphoto_mmdata/202104/19/91f1e8fc-95d3-41bf-a291-2fdb00cd7716.jpg

<https://www.reuters.com/article/global-climate-summit-southkorea-idUSL4N2MF3R2>

Beyond Coal : Public financing for Oil and Gas

94.7% of the world's CO₂ emissions comes from burning fossil fuels.
Emissions from oil and natural gas account for 54.4% of global CO₂ emissions.

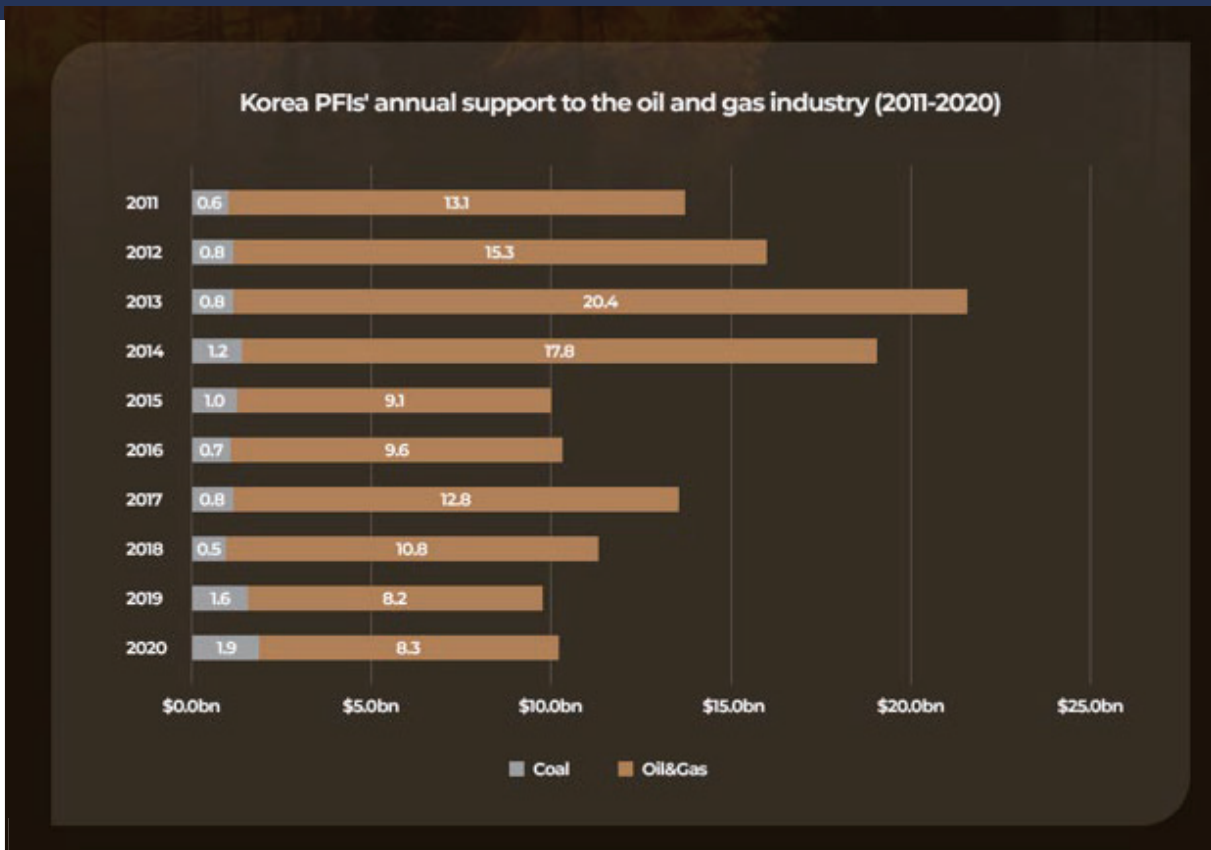


Source: Our World In data

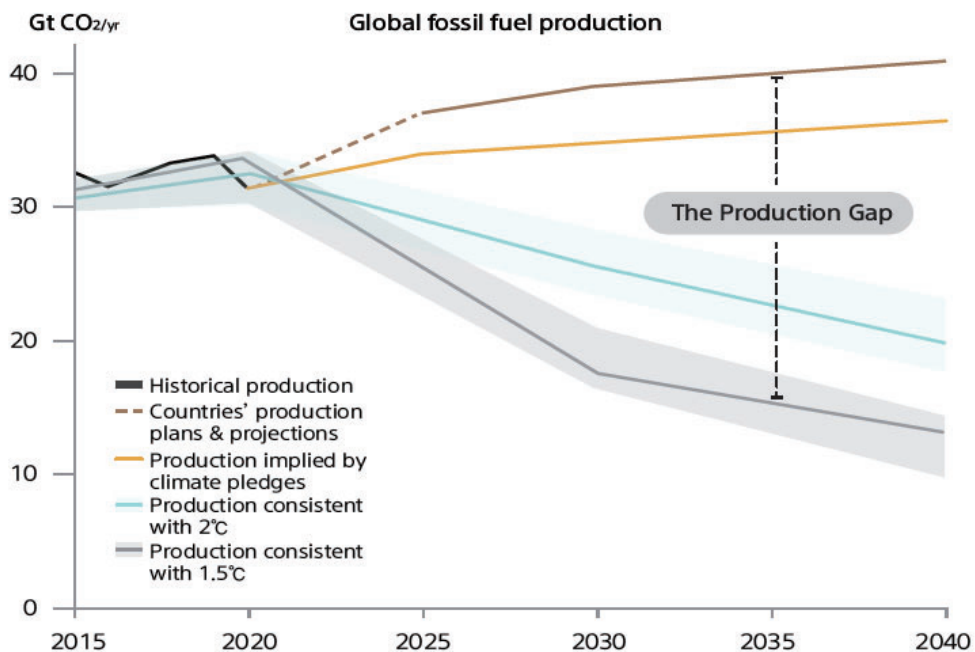
Beyond Coal : Korea's Public Finance on Oil and Gas



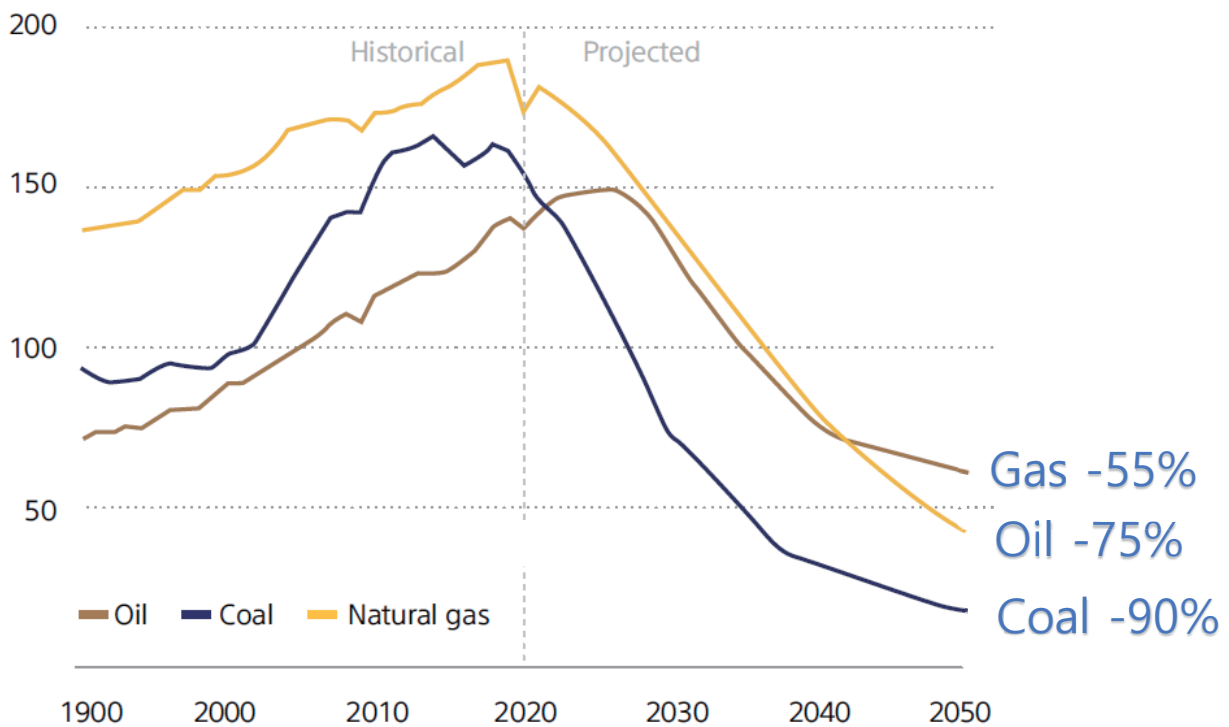
Beyond Coal : Public financing for Oil and Gas



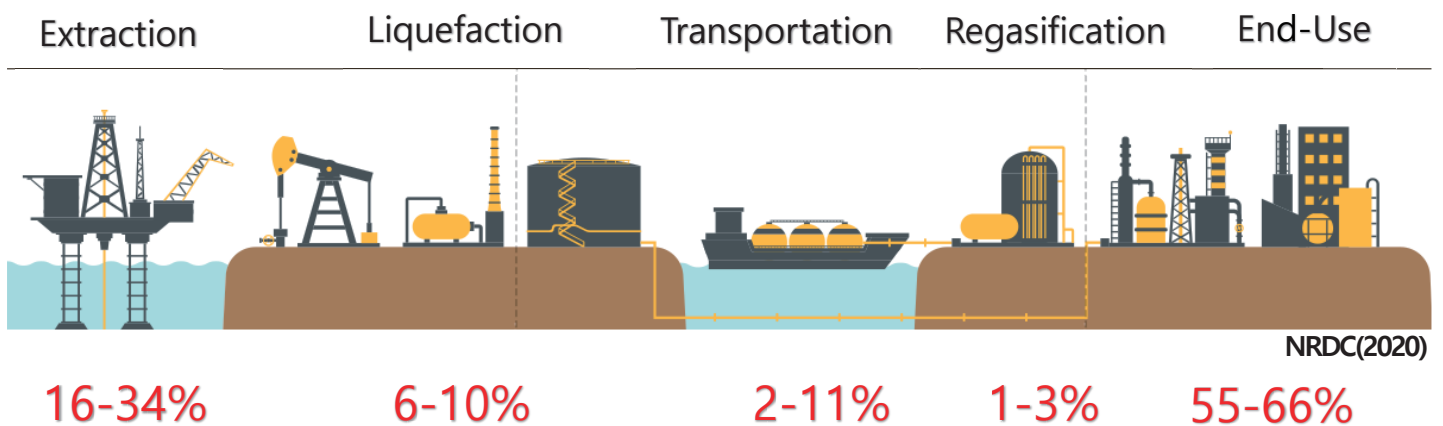
UNEP Production Gap Report



IEA 2050 Global Energy Roadmap



LNG is not a bridge



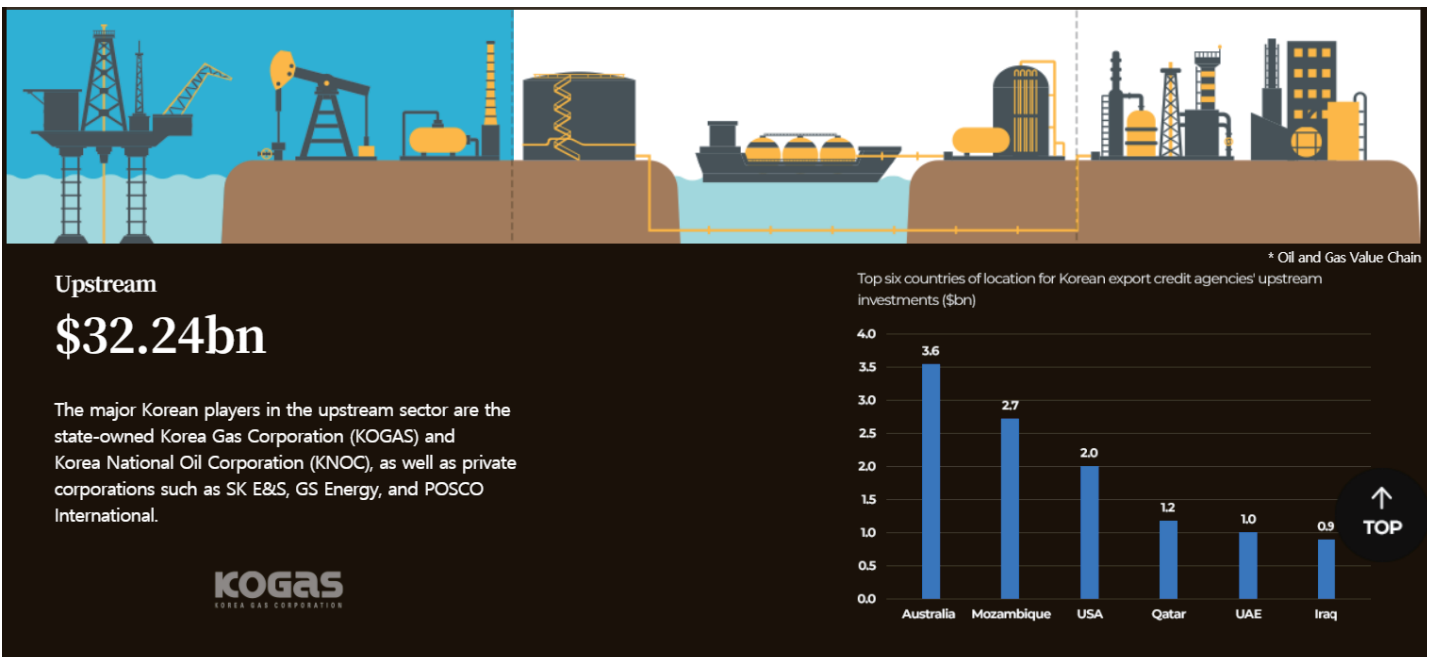
Life-Cycle LNG : 688gCO₂/kWh
Coal Power Plant : 887gCO₂/kWh

78%

Korea's Oil and Gas Financing throughout the Value Chain



Oil and Gas : Upstream



Oil and Gas : Midstream



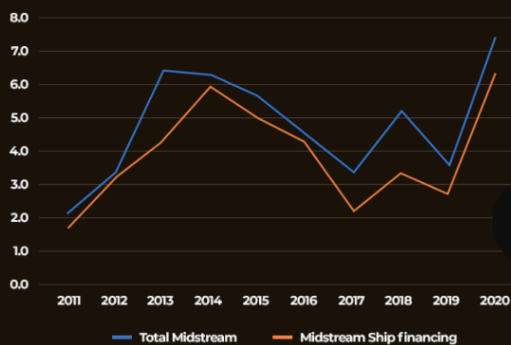
Midstream

\$49.71bn

Korean shipbuilders and construction companies are very active in the midstream sector, building pipelines and terminals, as well as transportation vessels for crude oil and liquefied gas.

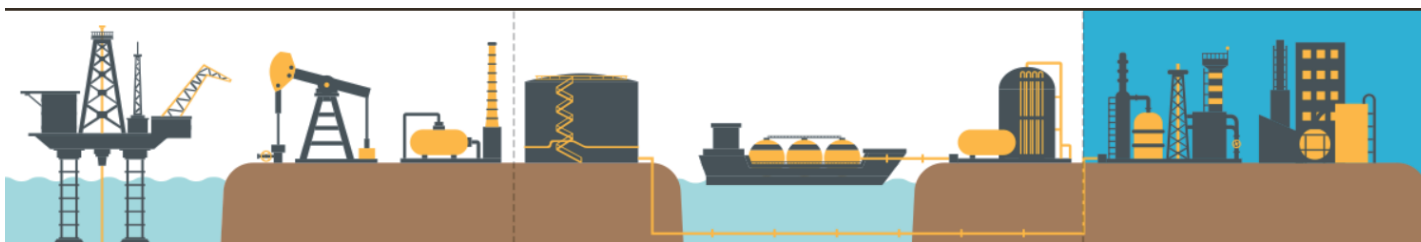
The majority of public financing in the midstream sector is going into ship financing, particularly in the form of guarantees, with a noticeable increase in recent years.

* Oil and Gas Value Chain
Annual trend of public financing in the midstream sector (\$bn)



↑ TOP

Oil and Gas : Downstream

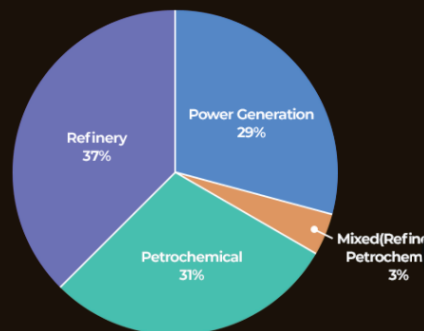


Downstream

\$45.15bn

Public financing in the downstream sector is provided to Korean construction companies including GS E&C, Daewoo E&C, SK Ecoplant, Hyundai E&C, and Samsung C&T. These companies have taken Engineering, Procurement, and Construction (EPC) projects for oil refineries, petrochemical plants, and thermal power plants.

* Oil and Gas Value Chain



↑ TOP

Downstream investments of PFIs by subsector



Korean Industry and the Transition Risk

46% of all Korea's oil and gas public finance has been invested in ship and offshore plant financing.

SHIP AND OFFSHORE FINANCING

Korea has the largest shipbuilding industry in the world, dominating 44.2% of the global market in 2018, followed by China (32.0%) and Japan (12.6%).

Shipbuilders received 46% of all Korean public finance to oil and gas in the past ten years, which amounts to \$57.7 billion.

Drillships, offshore plants, and transportation vessels are critical components of the oil and gas value chain and also major products for Korean shipbuilders.

In 2020, the top three Korean shipbuilders won 73% of the LNG carrier vessel orders and 81% of Very Large Crude Oil Carrier (VLCC) orders in the global market.

Shipbuilding Industry and the Transition Risk

SHIP TYPE

Ships and offshore plants play a key role in the production of oil and gas. Drillships are used for the exploration and drilling of new oil and gas wells in the ocean.

Offshore platforms are used for extraction, processing, and storage.

Transportation vessels include crude oil carriers, gas carriers, and regasification units for LNG.

Out of \$57.7 billion, 71% was provided to transportation vessels. LNG carriers received the most public funds, \$23.14 billion, as Korean shipbuilders are dominant in the LNG carrier market.



Natural Gas Carrier \$23.14bn



Oil Carrier \$13.97bn



Drillship \$13.71bn

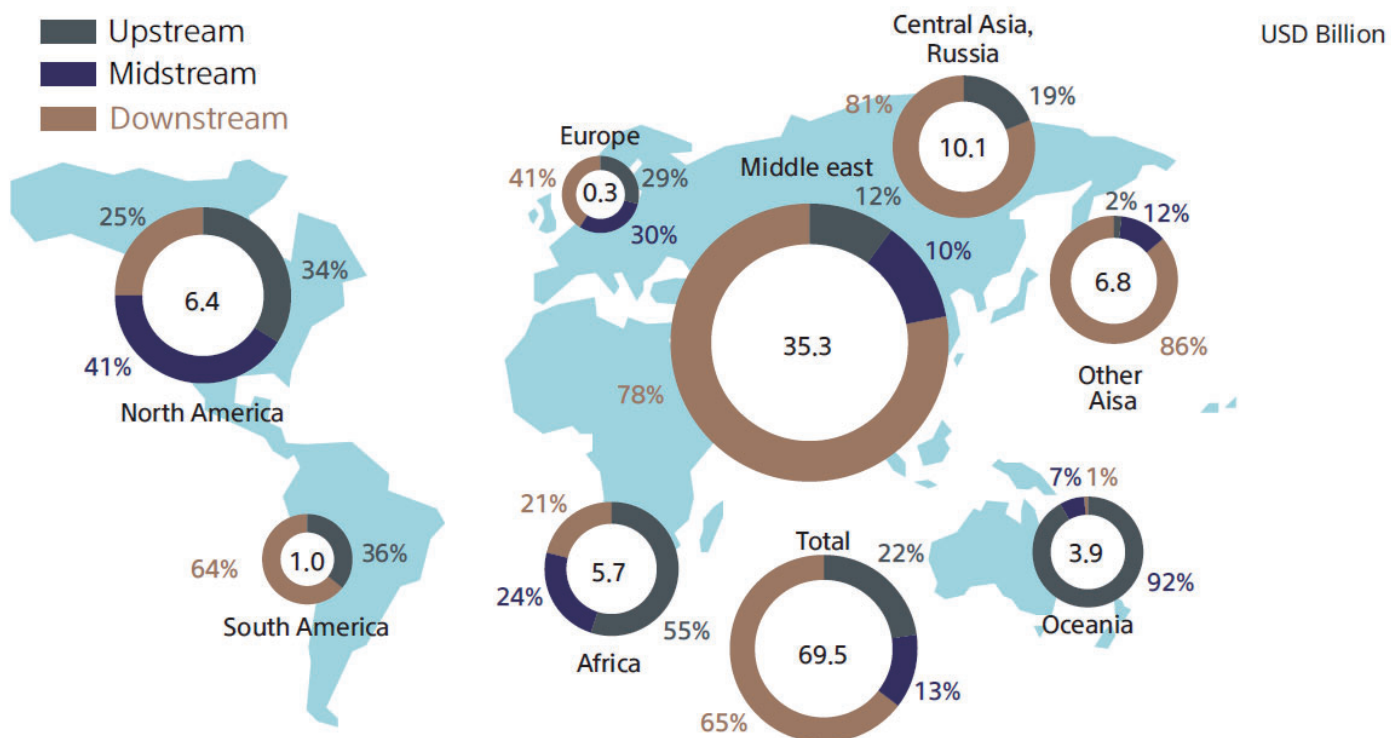


FSRU \$1.79bn

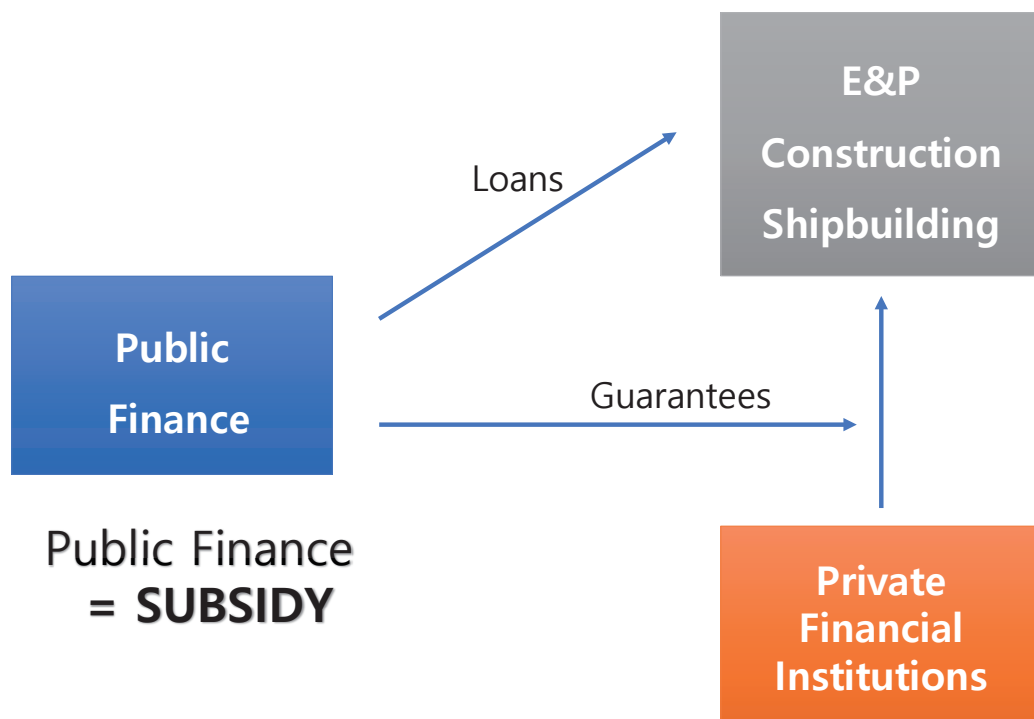


Offshore Platform \$3.04bn

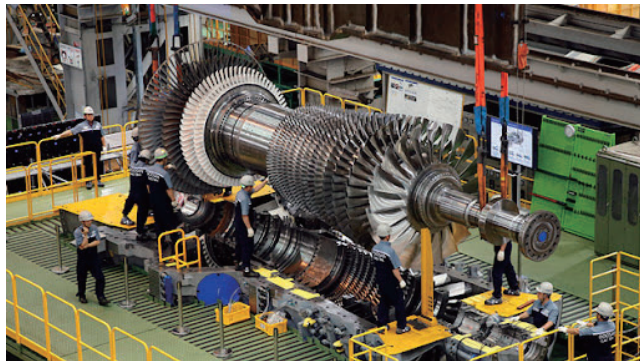
Oil and Gas Construction by Region



Public Finance and Transition Risk



Public Finance and Transition Risk



Public Finance and Stranded Asset Risk



IEA. All rights reserved

Financial Risk

Oil and gas projects are exposed to significant "stranded asset risk." Oil and gas infrastructure requires massive funding for construction and needs to operate for decades to recover initial investments. However, the phase-out pathway for fossil fuels is likely to render the asset useless before its end of life.

In Net Zero by 2050: A Roadmap for the Global Energy Sector, the IEA has suggested there is no need for investment in new fossil fuel supply for net-zero pathway.

Continued financing for oil and gas will compromise the financial stability of public financial institutions.

Public Finance and Stranded Asset Risk

SK E&S to invest 1.6 tln won in gas field off Australia



KOGAS kicks off construction of FLNG facility in Mozambique

<http://www.e2news.com/news/articleView.html?idxno=225227>
<http://www.gasnews.com/news/articleView.html?idxno=95121>

Public Finance is Moving Away from Fossil Fuel



U.S. DEPARTMENT OF THE TREASURY



- KEXIM / KSURE / KDB declares support for TCFD
- How do you measure climate-related risks?
- How much investment has been made to fossil fuel?
- What is the phase-out plan for carbon assets?

Thank you.

Export Credit Guarantees and the Climate

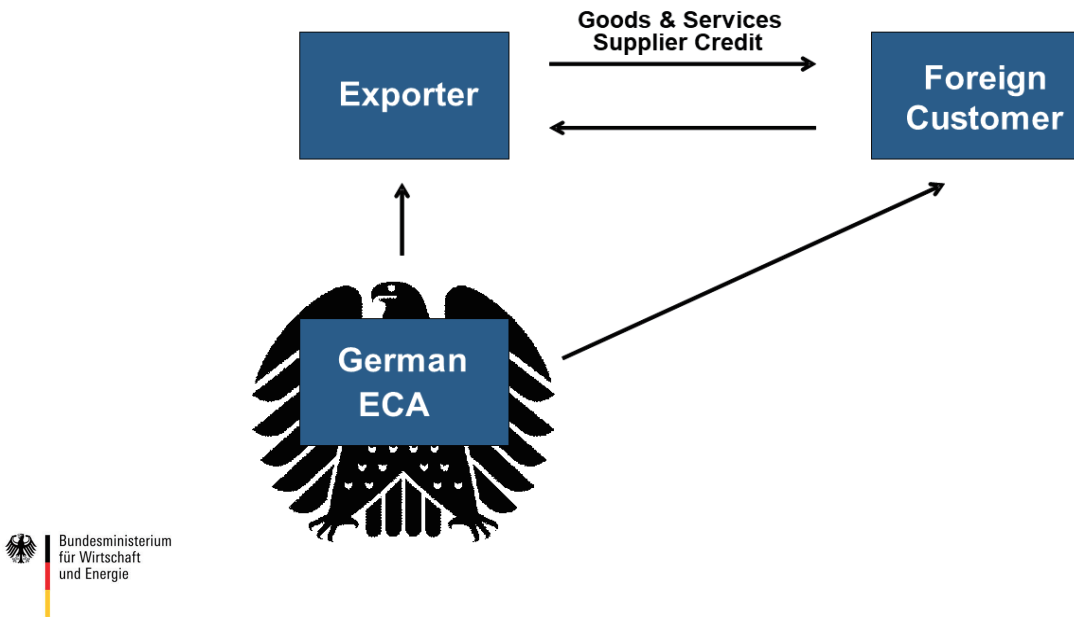
KR-DE ROAD TO 2050: FINANCING CLEAN ENERGY TRANSITION
September 30, 2021

German Federal Ministry for Economic Affairs and Energy

Purpose of the German Export Credits Scheme

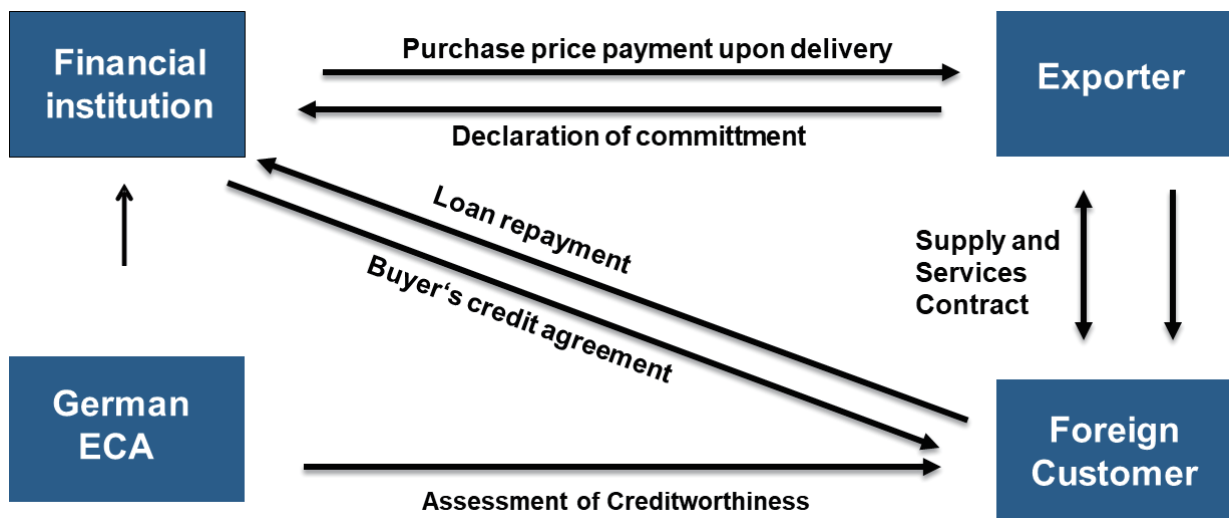
- ▶ Promotion of German exports through coverage against **political** and **commercial risks** in favour of exporters and banks
- ▶ Protection against bad debt losses
- ▶ **Safeguarding jobs**
- ▶ Facilitating the financing of exports
- ▶ Access to new markets
- ▶ Creating equal opportunities for the German export industry in international competition
- ▶ Promotion of small and medium-sized enterprises as a special task
- ▶ Maintaining trade relations in difficult economic circumstances
- ▶ Facilitating the financing of exports
- ▶ Subsidiarity to the private insurance market

Basic structure of an Export Credit Guarantee :



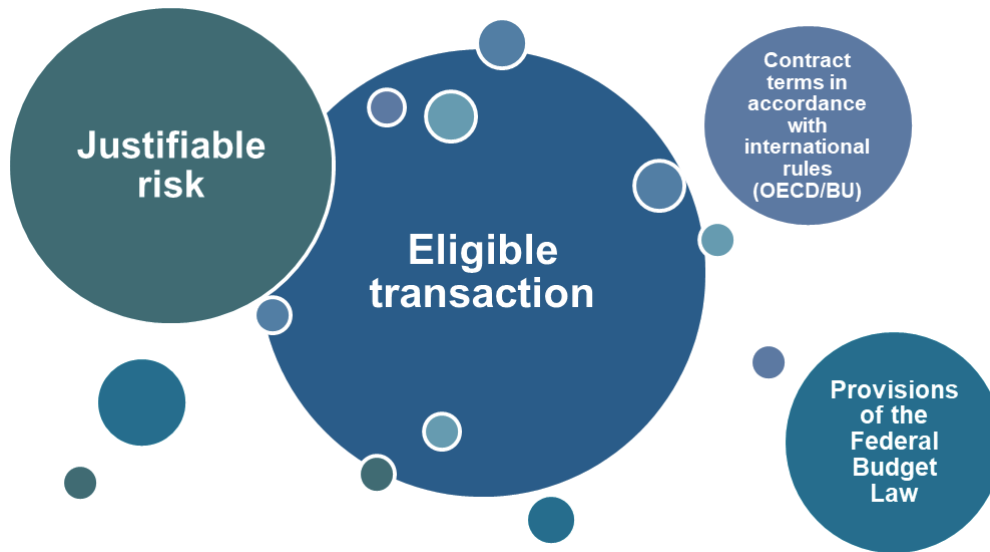
3

Basic structure of a Buyer Credit Guarantee



4

Requirements for Cover



Eligibility Criteria

Certain requirements have been defined, which need to be met in order to receive cover

- ▶ The transaction is **eligible** for support and/or deserves **particular governmental promotion**

Criteria that define eligibility of a transaction

- ▶ General German export interest, job security, structural policy considerations, national share
- ▶ Foreign and development policy significance
- ▶ Export law issues
- ▶ **Environmental, social and human rights compatibility**
- ▶ Type of goods/purpose/sensitivity of export business
- ▶ No corruption

Export Finance for Future (E3F)

- ▶ founded in **April 2021** to harness public export finance as a key driver in the fight against climate change
- ▶ current **members** of the coalition:
 - Denmark
 - France
 - Germany
 - The Netherlands
 - Spain
 - Sweden
 - United Kingdom



Export Finance for Future (E3F)

Statement of Principles

- » Develop **incentives** to better support the development of exports to **sustainable projects** in all sectors of the economy
- » **Ending** trade and export **support directed to unabated coal power**
- » **Reviewing** our trade and export finance **support to fossil fuels** and assess how to best phase it out, taking into account industries' respective characteristics
- » Starting a climate-oriented review of our respective trade and export finance activities, so as to have a shared and documented understanding of their climate impacts, and work on improving **transparency** on climate-related information, in particular when it comes to the identification of sustainable projects
- » Promoting the initiative and engage with other providers of official trade and export finance, in all relevant fora and in particular in the OECD, with a view to shape a level playing field that would duly take the climate emergency into account



Bundesministerium
für Wirtschaft
und Energie

Many thanks for your attention



To access materials online, please scan the QR code.

온라인 자료집은 좌측 QR 코드로 확인 가능합니다.

