

Energy Transition Diplomacy

Energy Security & Energy Diplomacy

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Disclaimer

“The views, information, or opinions expressed during the lecture and the following Q & A session are solely those of Dr Urban Rusnák

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Energy Security and Energy Diplomacy

Four pillars of the Energy Security - Security of Supply, Security of Demand, Security of Transit/Transportation, Security for the End Consumer (absence of energy poverty).

Impact of Russian invasion to Ukraine

OPEC, IEA, GECF, ECT.

Energy security trilemma.

Prevention and Early Warning of conflicts Managing emerging conflicts, resolving energy conflicts.

Energy Diplomacy vs. Climate Diplomacy - different goals

- Energy Security

to secure sufficient, affordable and consistent supply, transit and demand of energy for industrial, transport and military requirements necessary for development of nations

- Mitigation and Adaptation to the Climate Emergency

to combat and prevent dangerous human interference with the climate system and enable sustainable development of nations

Energy vs. Climate Diplomacy

Energy Security

- Forstering various aspects of the Energy Security

Bilateral

Multilateral



Climate Security

- Mitigation and Adaptation to the Climate Emergency

Plurilateral



Multilateral

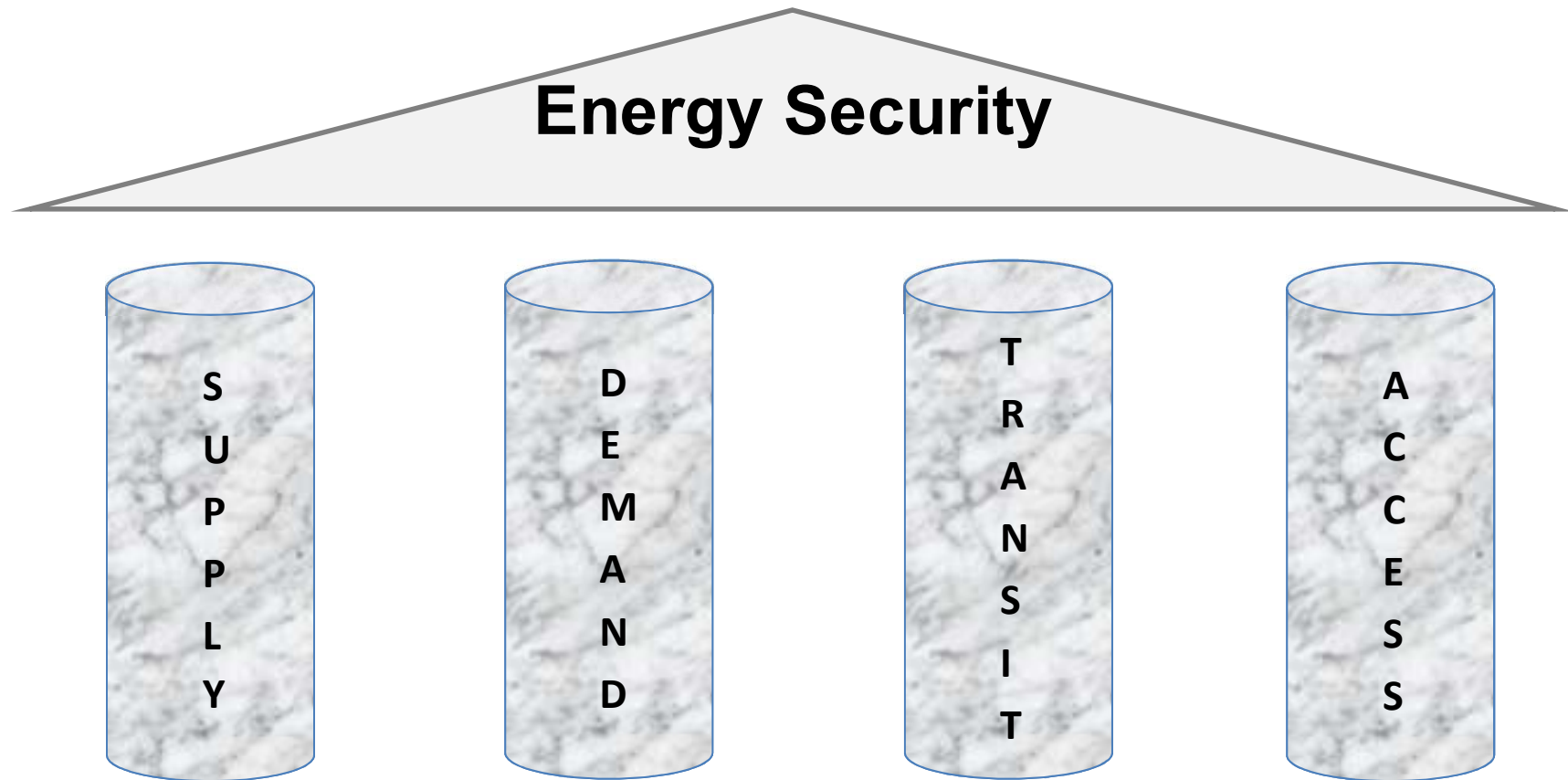


United Nations



Framework Convention on Climate Change

The 4 Pillars of Energy Security



Supply: The reliable security of **Energy Supply**

Demand: The reliable long term security **Energy Demand**

Transit/Transport: Safe, reliable **Transit and Transport of Energy Supplies**

Access to Energy: Access for all consumers, the **Alleviation of Energy Poverty**:

Uninterrupted availability of energy sources at an affordable price

legally binding commitments



Global dialogue on energy, providing authoritative analysis, data, policy recommendations, and real-world solutions to help countries provide secure and sustainable energy for all.

Co-ordination of a collective response to major disruptions in the supply of oil (legally binding 90 day reserves)



Common rules for global energy security: investment protection, transit, energy efficiency, trade and dispute resolution (legally binding)

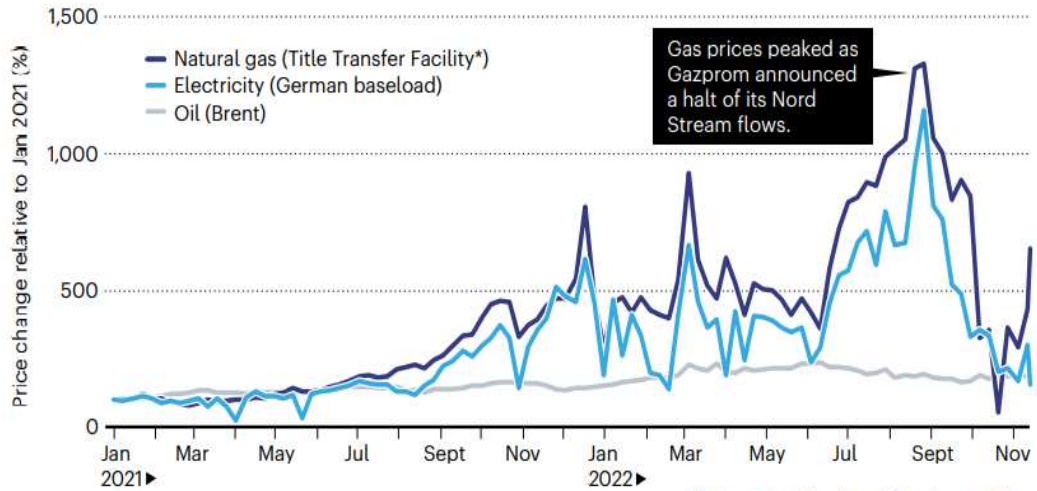


Coordinated petroleum policies for the stabilization of oil markets .. for steady income to producers and a fair return on capital for those investing in the petroleum industry. (legally binding production quotas)

Impact of RU Invasion to UA

Prices of natural gas, electricity and oil in Europe

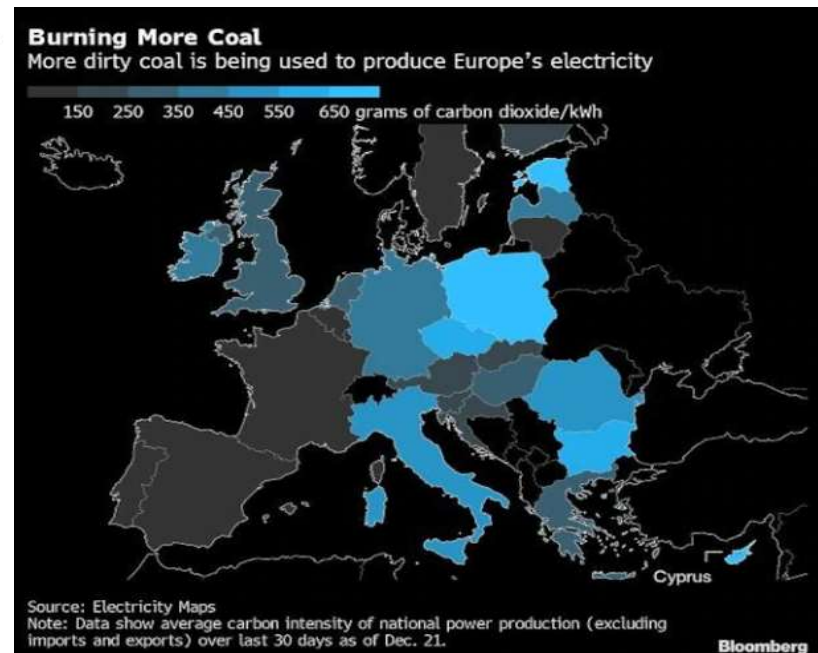
Energy prices rocketed from mid-2021 as Russia reduced its supplies.



Price for Gas and Electricity soars



Coal is back (at least for the winter 2022/23)



Impact of RU Invasion to UA - Europe

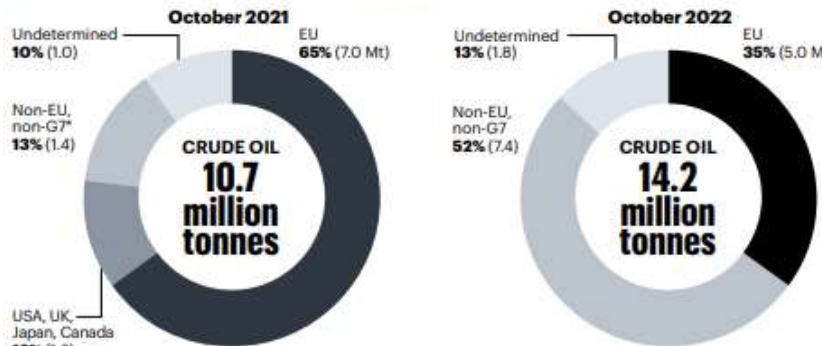
Changing geography of energy flows in Europe

State interventions to reduce energy bills

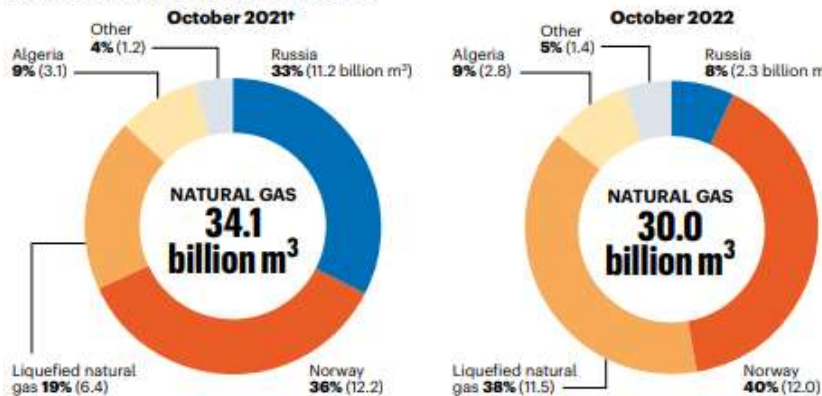
OIL AND GAS RESHUFFLE

Deliveries of crude oil and natural gas from Russia to the European Union and the United Kingdom slumped in 2022 as a result of Russia's invasion of Ukraine.

Russian crude-oil exports from its western ports



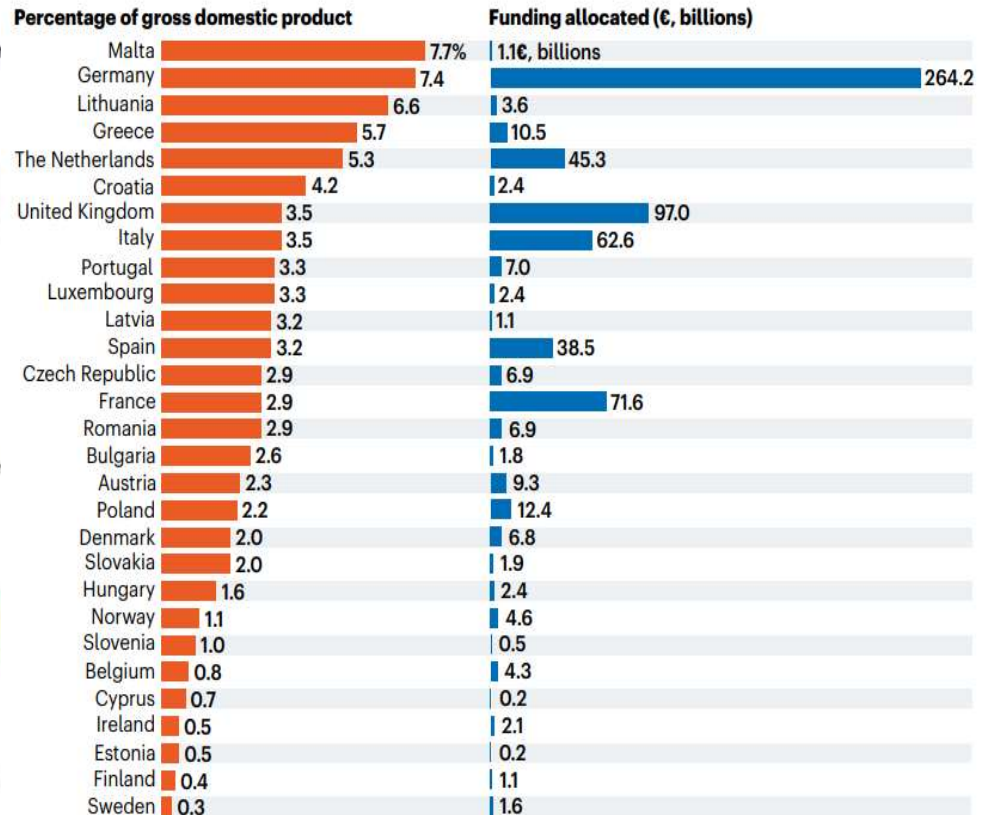
EU and UK natural-gas imports by source



*Non-G7 excludes Canada, France, Germany, Italy, Japan, United Kingdom and United States. †Percentage does not add to 100% because of rounding.

Government interventions to reduce energy bills

Since September 2021, governments in Europe have earmarked and allocated more than €700 billion (US\$743 billion) in energy subsidies.



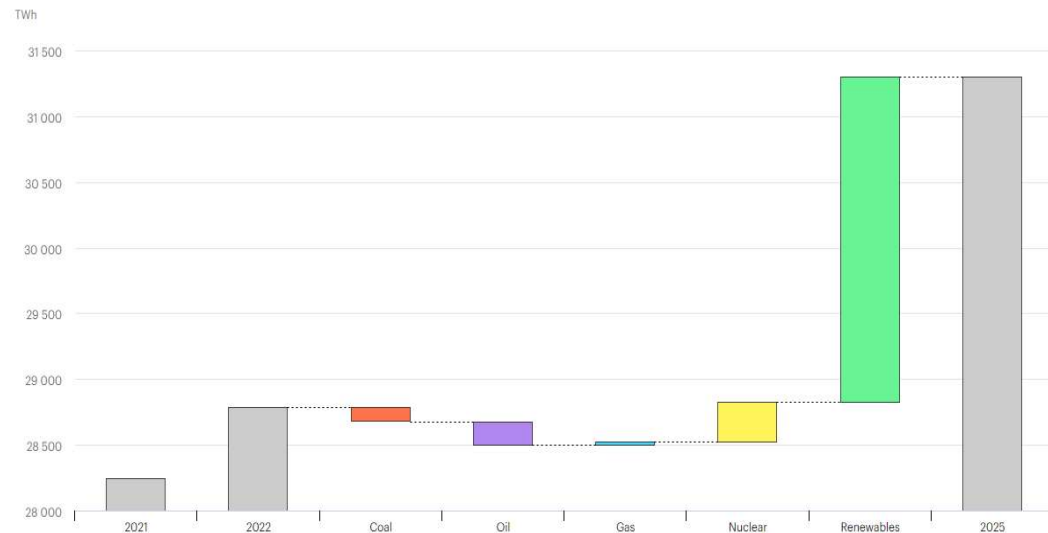
Impact of RU Invasion to UA - World

- Rebalancing oil supply and demand / sanctions vs. new markets for Russia e.g. India, increase in China
- Redirecting LNG supplies / pricing out spot consumers in South Asia
- Uptake of coal production and consumption 2022/23
- Electricity demand

Remains resilient and low emission sources are predicted to cover most of the new demand by 2025

Changes in global electricity generation by source, 2021-2025

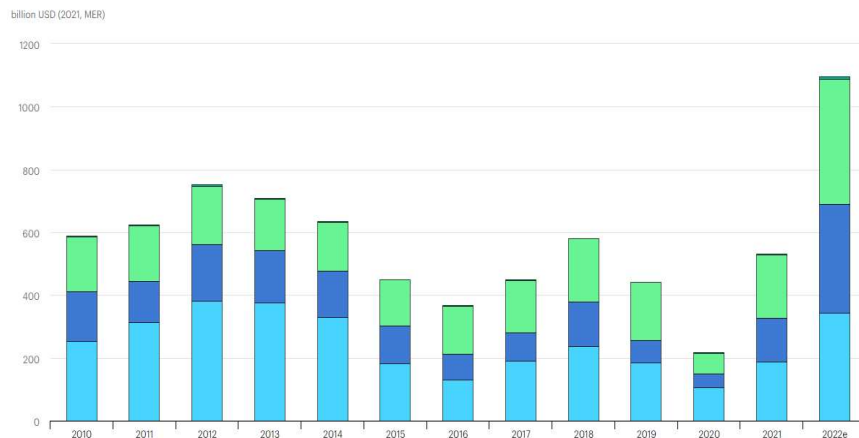
Open 



Impact of RU Invasion to UA - World

Global fossil fuels subsidies highest on records

Fossil fuel consumption subsidies by fuel, 2010-2022



Oil prices are reflecting fundamentals, but price differential reflects sanctions

OPEC Basket Price

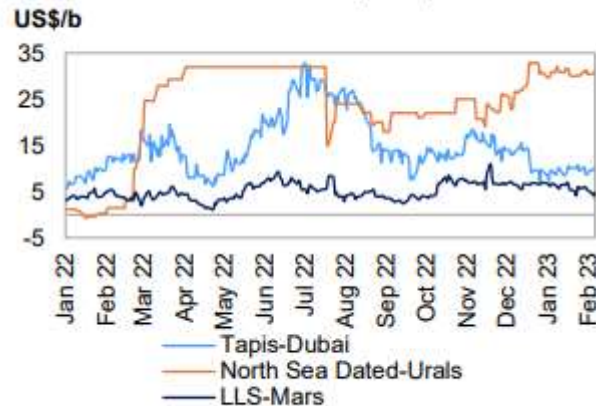


MONTHLY BASKET PRICE	
01/02/2023	\$ 82.06
01/01/2023	\$ 81.62
01/12/2022	\$ 79.68
01/11/2022	\$ 89.73
01/10/2022	\$ 93.62
01/09/2022	\$ 95.32
01/08/2022	\$ 101.9
01/07/2022	\$ 108.55
01/06/2022	\$ 117.72
01/05/2022	\$ 113.87

Previous Next

Oil Natural gas Electricity Coal

Graph 1 - 7: Differential in Asia, Europe and USGC



Sources: Argus, OPEC and Platts.

Long term Energy Security

- Investment – *Investment* - **Investment**
- Supply/Demand Balance
- Legal Framework
- Technological Evolution
- Climate Emergency
- Non-Proliferation and Nuclear



United Nations
Framework Convention on
Climate Change

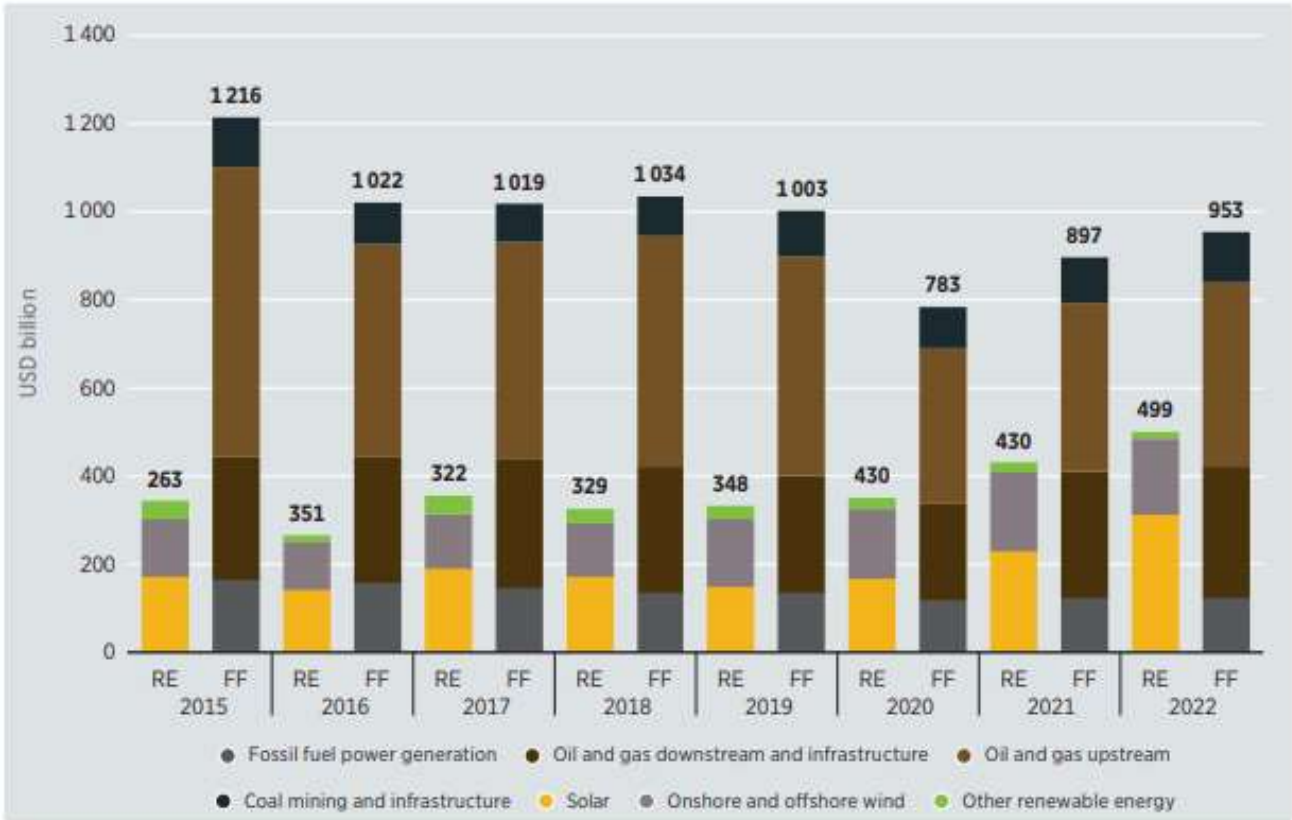


IAEA
International Atomic Energy Agency

Beware of the Geopolitical shift

Global annual energy investment

Figure S.2 Annual investment in renewable energy vs. fossil fuels, 2015-2022



Note: FF = fossil fuel; RE = renewable energy.
Based on: CPI (2022a) and IEA (2022b).

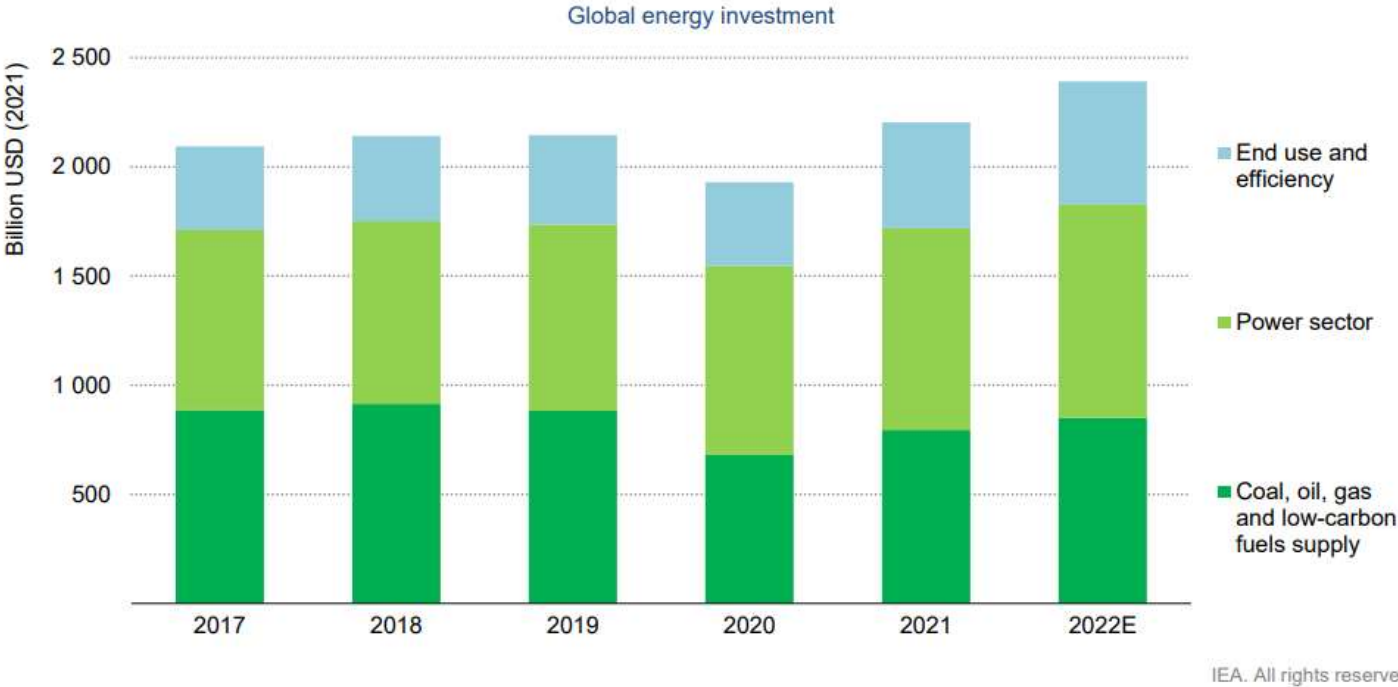
Recent increase of RES investments started before the war



IRENA, Annual in RES vs. FFS, 2015-2022, Abu Dhabi

Global annual energy investment

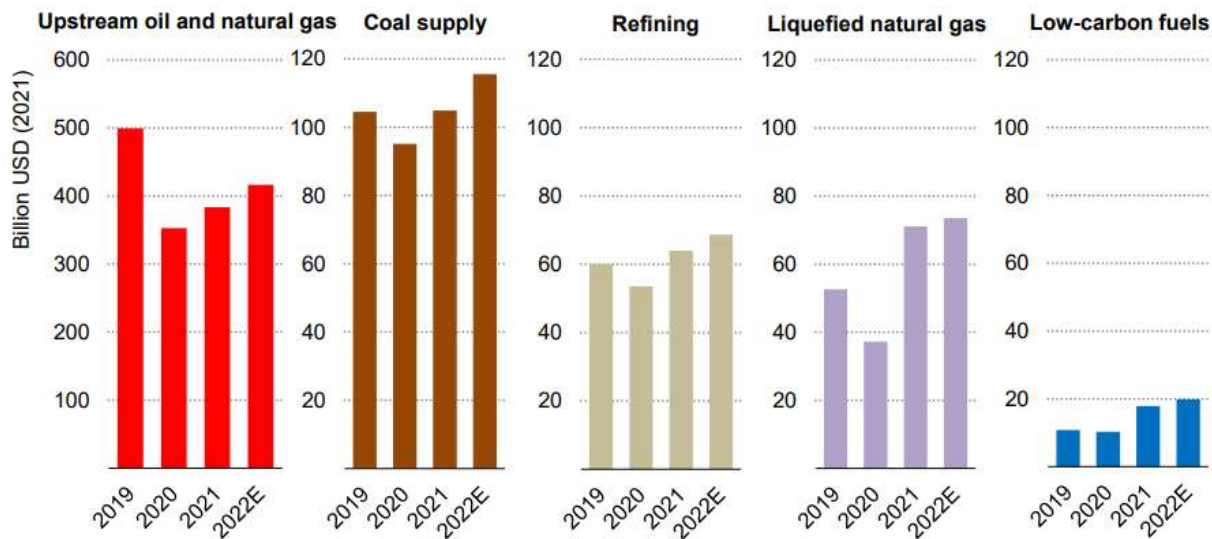
Energy investment is set to pick up by 8% in 2022 against the backdrop of the global energy crisis, but almost half of the increase in capital spending is linked to higher costs



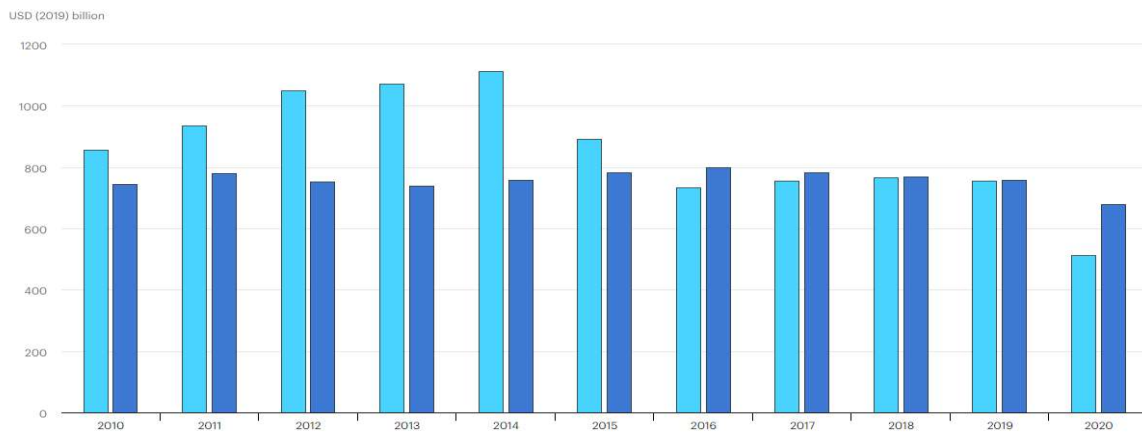
High prices, rising costs, economic uncertainty, energy security concerns and climate imperatives are reflected in current trend

Global annual energy investment

Change in fuel supply investment, 2019-2022E



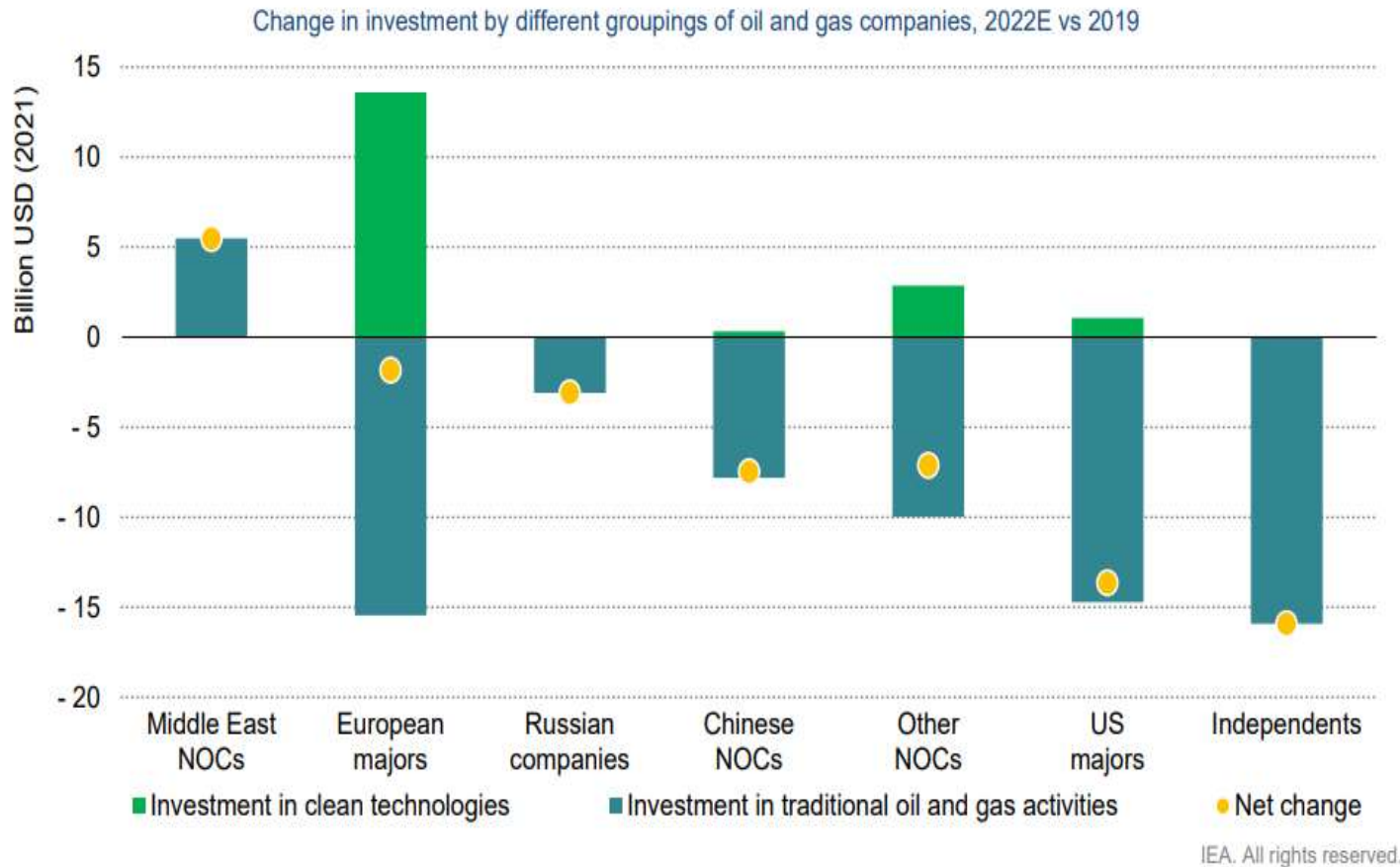
Global investment in energy supply, 2010-2020



The energy crisis and Russia's invasion of Ukraine are spurring new investment in fuels, including an expansion of coal supply in emerging Asian economies, but there is historical underinvestment relative to the overall energy consumption



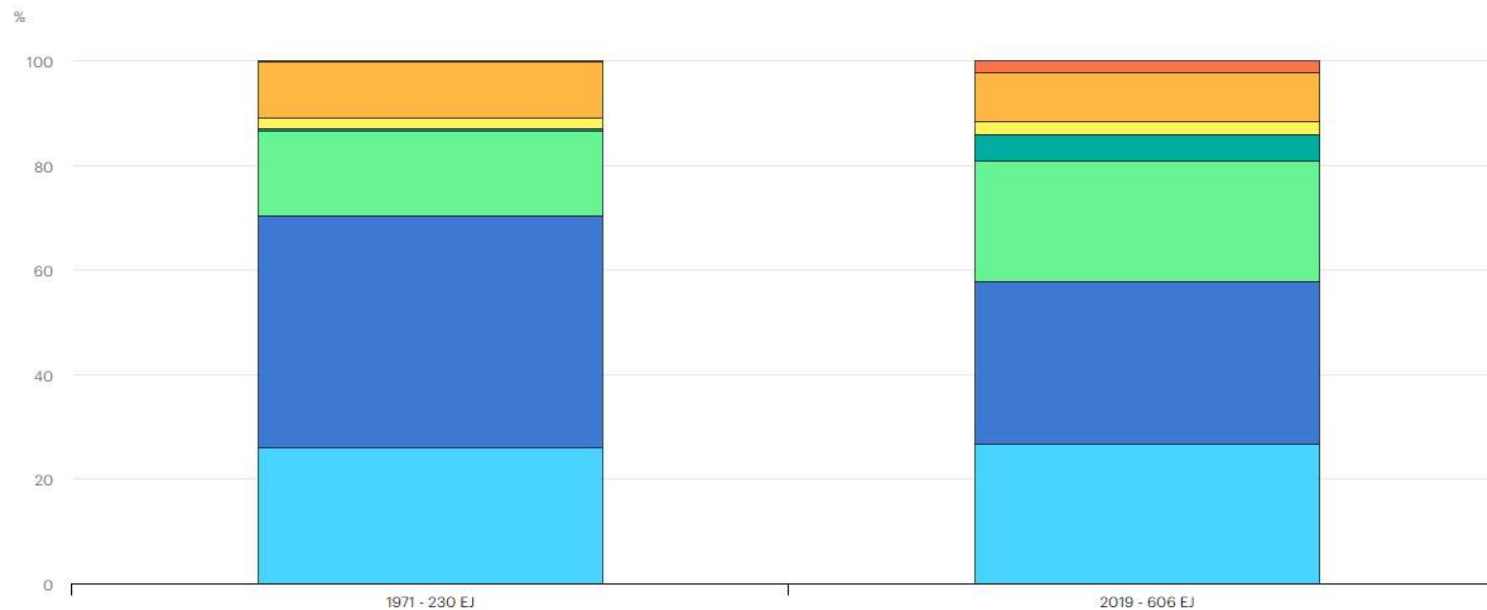
Change in energy investment



Investment in fossil fuels is on a rising trend, but is still almost 30% below where it was when the Paris Agreement was signed. Only Middle East NOCs are investing more in Oil & Gas than 5 y ago

IEA, World Energy Investment 2022, Paris

Total primary energy supply by fuel



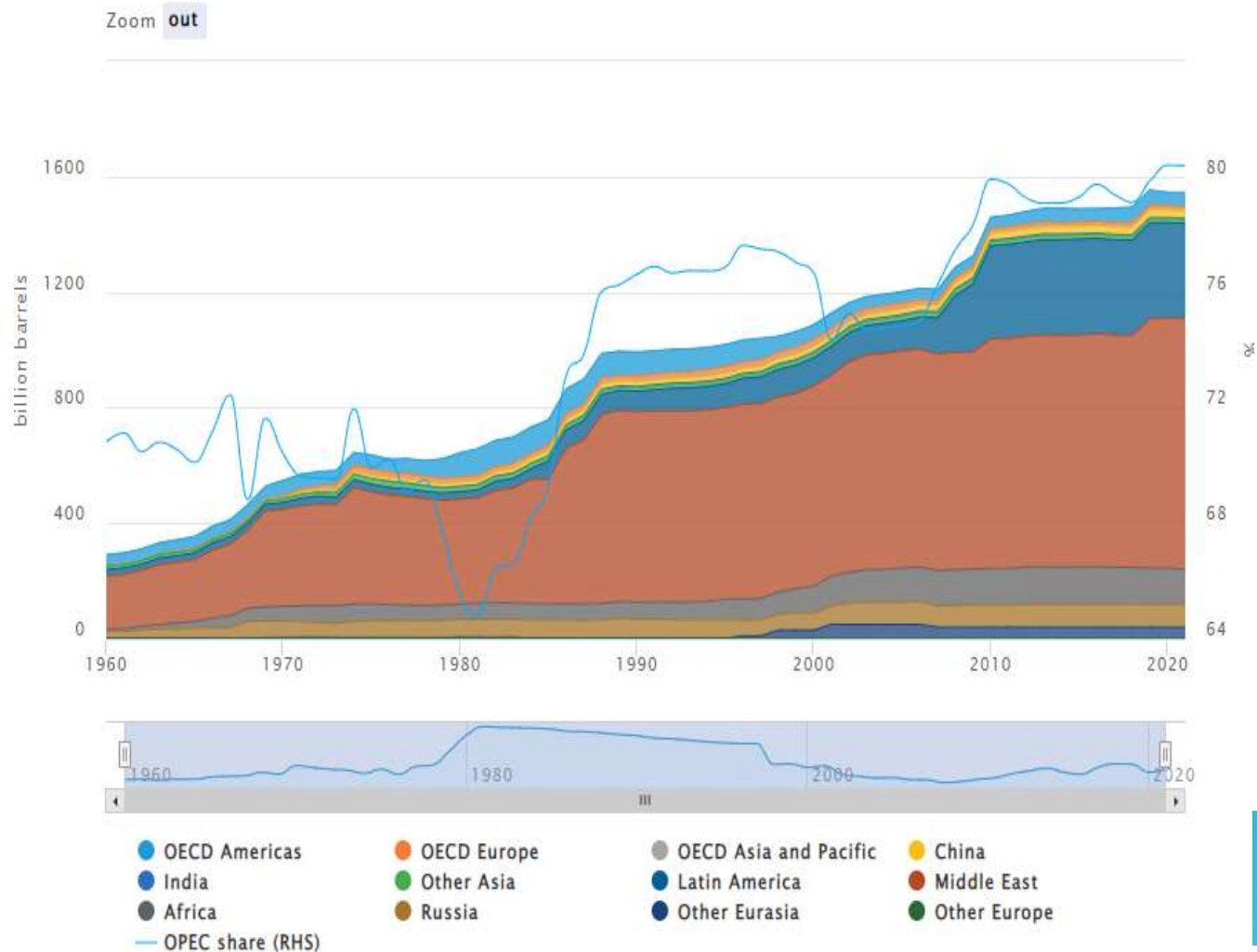
IEA. All Rights Reserved

● Coal ● Oil ● Natural gas ● Nuclear ● Hydro ● Biofuels ● Other renewables

IEA, Total primary energy supply by fuel, 1971-2019, IEA, Paris

Energy Security / Security of Demand

World proven crude oil reserves
(billion barrels)



Security of Energy demand dilemma: How much and when to invest to meet future demand for fuel?



Energy Security / Security of Demand

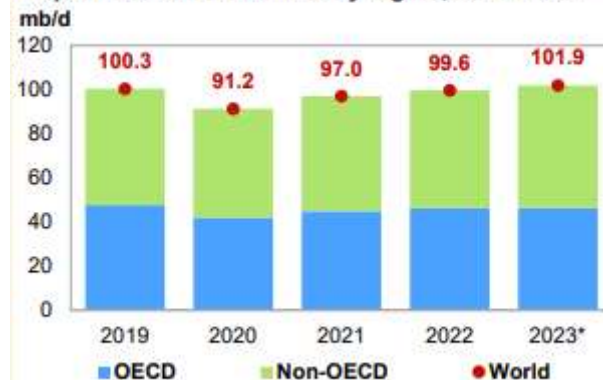
OPEC predictions 2006



Reference	2005	2010	2015	2020	2025
OECD	49.8	51.4	52.7	53.8	54.7
DCs	29.0	34.4	40.3	46.4	52.8
Transition economies	4.8	5.1	5.4	5.7	5.9
Total World	83.6	90.9	98.4	105.9	113.4

- World economic growth averages 3.5% p.a. over next two decades
- “Dynamics-as-usual”: observed patterns, no new strong policy drives
- Oil demand increases by 30 mb/d by 2025, or 1.5 mb/d annually
- Four-fifths of the increase in demand comes from developing countries
- Transportation continues to be the dominant source of growth (~60 %)
- Many uncertainties: GDP, technology, policy

Graph 1: Global oil demand by region, 2019–2023



Note: * 2023 = Forecast. Source: OPEC.

Predictions are based on the past experience, but investments are made for the future

Global oil demand is set to rise by 1.9 mb/d in 2023, to a **record 101.7 mb/d**, with nearly half the gain from China following the lifting of its Covid restrictions. Jet fuel remains the largest source of growth, up 840 kb/d.

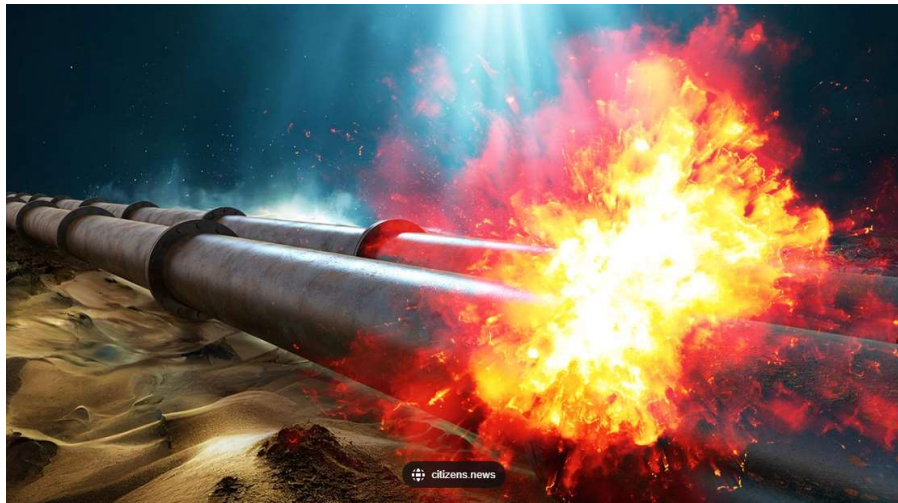
OECD oil demand slumped by 900 kb/d in 4Q22 as weak industrial activity and weather effects lowered use, while non-OECD demand was 500 kb/d higher.

Oil Market Report IEA, 2023,



Energy Security / Security of Transit

- Transit by pipelines / NordStream sabotage 2022



- Transit by sea / Piracy

Gulf of Aden

West Africa

Malacca Straights

(ransom, oil theft) decline since 2014

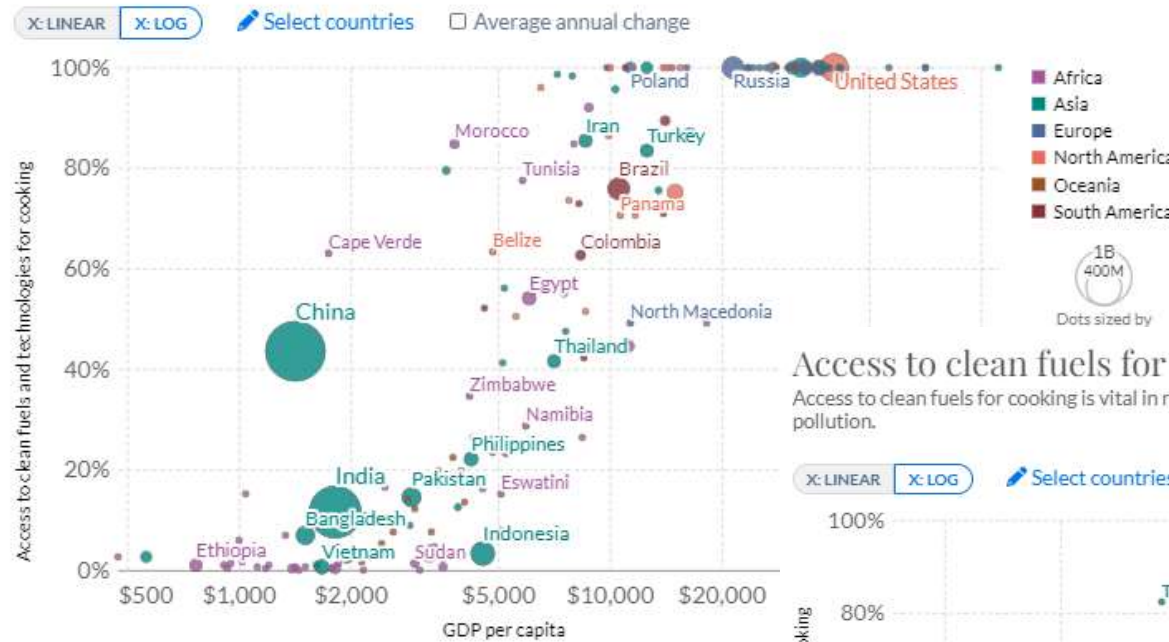


Energy Security / Energy Poverty

Access to clean fuels for cooking vs. GDP per capita, 1990

Access to clean fuels for cooking is vital in reducing the burden of health and mortality impacts of indoor air pollution.

Our World in Data



Source: World Bank, WHO

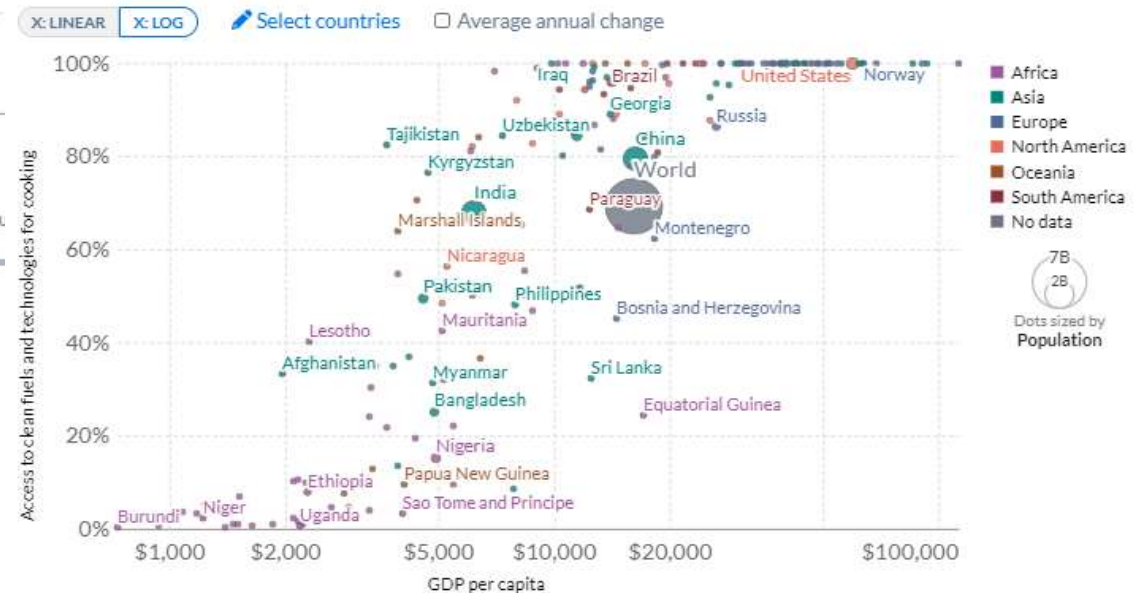


Energy poverty manifestation – no access to clean cooking fuels and technologies

Access to clean fuels for cooking vs. GDP per capita, 2020

Access to clean fuels for cooking is vital in reducing the burden of health and mortality impacts of indoor air pollution.

Our World in Data



Source: World Bank, WHO

OurWorldInData.org/indoor-air-pollution/ • CC BY



Geopolitical vulnerabilities

- **Interdependencies between producers and consumers – mutual benefit, stability and predictability**

NOT ANY MORE

- Ideological division/conflict

interdependencies  vulnerabilities

- Diversification, Resilience , Fuel substitution

Elusive peace dividend

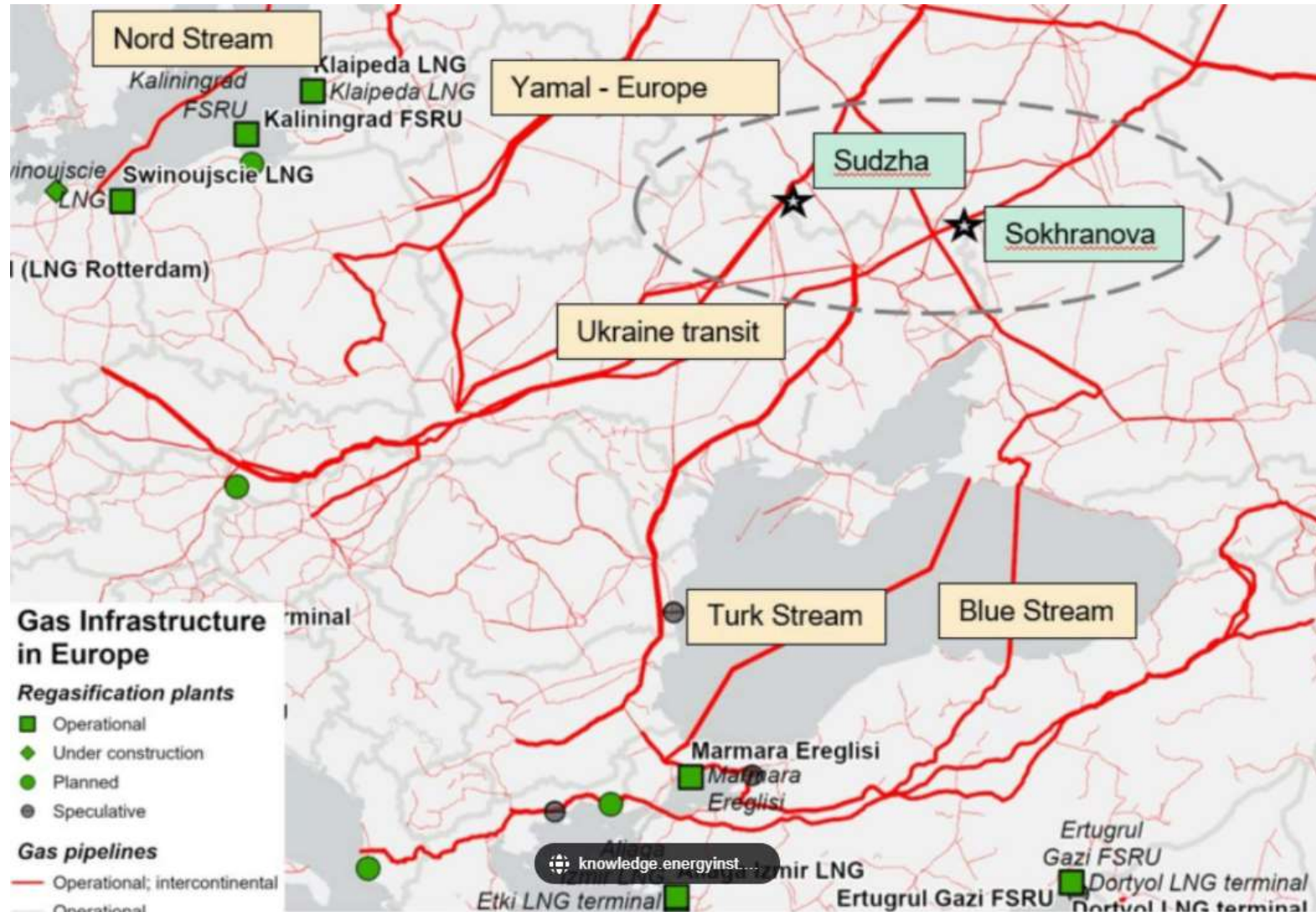
OPEC-USA (West) OECD 1973-74

Russia-Ukraine (West/OECD) 2022-?

Russia-China ?

Gas supply routes to Europe

from Eurasia, 2022



Source: Rystad Energy

Russian aggression to Ukraine

Gas supplies interruption

2006, 1-4 January - Russia interrupted gas flow to UA due to gas price and debt dispute

2009, 7 January - Russia interrupted gas flow to EU / RU-UA Gas price dispute. EU COM – “commercial conflict”, in reality geopolitics. Supplies and transit renewed on 20.1.2009. In **2010** Charkiv agreement (2017-2042 RU Black Sea fleet lease for gas price reduction – terminated by RU on 31 March 2014)

2014, 14 March - Russia annexing Crimea, armed conflict in Donbas. Energy Charter EWM – three meetings of contacts group / no supply interruption, no attacks on energy infrastructure

2022, 23 February - Russia invading Ukraine, full armed scale conflict – no supply interruption, but: EU/US sanctions, changes in contracts (RUB), heavy attacks on energy infrastructure, cash flows from RU to UA for gas and oil transit, from EU to RU for commodities, from UA to EU for gas and fuel

Weaponisation of Gas Supplies by Russia 2021/2022

Summer 2021

Gazprom fuels European gas anxiety through the depletion of its European underground storage sites and by not booking extra capacity at auctions. (Gazprom previously owned and operated ~10 percent of total European gas storage.)
Source: [Wilfried Martens Centre](#)

September 2021–December 2021

Gazprom reduces supplies to the European Union by 13.6 bcm. Russian gas exports via Ukraine and Belarus transits are cut by roughly 50 percent on each route during this period.
Source: [Wilfried Martens Centre](#)

February 2022

Russia invades Ukraine and starts a war.
Source: [The New York Times](#)

September 2022

A deliberate sabotage involving several explosions damages the Nord Stream 1 & 2 pipelines. Only NS1 had been bringing Russian gas via the Baltic Sea directly into Germany (albeit at much-reduced rates). NS2 has never become operational.
Source: [The Washington Post](#)

September 2021

The IEA states that Russia is withholding supplies from Europe. Hub gas prices in Europe average more than \$30/mmbtu in Q4 2021 as Russia reduces its pipeline gas deliveries by 25 percent.
Source: [International Energy Agency](#)

Winter 2021–2022

Russia uses gas as a political weapon to force the European Union to approve the start-up of Nord Stream 2 pipeline. By holding back supply, the Kremlin manipulates European gas prices and refills its state coffers ahead of its planned Ukraine invasion.
Sources: [Bloomberg](#), [Wilson Center](#)

June 2022–October 2022

In June, Nord Stream 1 pipeline gas flows are cut on-year from 160 mcm/d to 60 mcm/d. Gazprom cuts flows again to 37 mcm/d following July pipeline maintenance. TTF closes at \$99.6/mmbtu on Aug. 26.
Sources: [E&E News](#), [Associated Press](#)

Fall 2022

Russia continues to send 70–75 mcm/d of gas exports to the EU notably via Ukraine and Turkey; Russia pipeline exports to the EU are set to fall to 63 bcm in 2022 or -55 percent (compared to ~170 bcm in 2021), their lowest level since the 1980s according to the IEA. TTF has averages \$41.5/mmbtu so far compared to its \$16/mmbtu 2021 average.
Sources: [The World Bank](#), [ENTSOG](#)

How to reduce EU reliance on Russian Gas

(March 2022)



- **1. No new gas supply contracts with Russia**
- **2. Replace Russian supplies with gas from alternative sources**
- **3. Introduce minimum gas storage obligations to enhance market resilience**
- **4. Accelerate the deployment of new wind and solar projects**
- **5. Maximise generation from existing dispatchable low-emissions sources: bioenergy and nuclear**
- **6. Enact short-term measures to shelter vulnerable electricity consumers from high prices**
- **7. Speed up the replacement of gas boilers with heat pumps**
- **8. Accelerate energy efficiency improvements in buildings and industry**
- **9. Encourage a temporary thermostat adjustment by consumers**
- **10. Step up efforts to diversify and decarbonise sources of power system flexibility**

Energy Security and the war in Ukraine 1/3

Global

296,979,119,271 EUR

Oil (67%) 199,128 M EUR Gas (24%) 72,014 M EUR Coal (9%) 25,835 M EUR



European Union

139,687,192,757 EUR

Oil (59%) 83,753 M EUR Gas (37%) 52,688 M EUR Coal (4%) 3,244 M EUR



Russia exported fossil fuels for over USD 300 bln. since the invasion in Ukraine started (27 Feb 2023)



Figure 1 | Heatmap of Russian fossil fuel shipments in the first six months of the invasion

Energy Security and the war in Ukraine 2/3

- Safety of Nuclear sites
Feb-Mar 2022
Former Chernobyl NPP area

Aug-Sep 2022

Zaporizhzhia NPP

(6x1100 MW) – shut down



ОБСТАНОВКА В РАЙОНІ ЗАЕС

ZN,UA



28

● Окупована територія

Energy Security and the war in Ukraine 3/3

Critical energy
infrastructure – is it
legitimate military target or
state terror?

Crude Oil/ Refineries /Fuel

Natural Gas / Gas Pipelines

Electricity Generation and
Grid

- Price manipulation and sanctions
- Energy Transformation to local sources

EU-US LNG Energy Security Arrangement

EU-28 Natural Gas Imports, 2021–2022

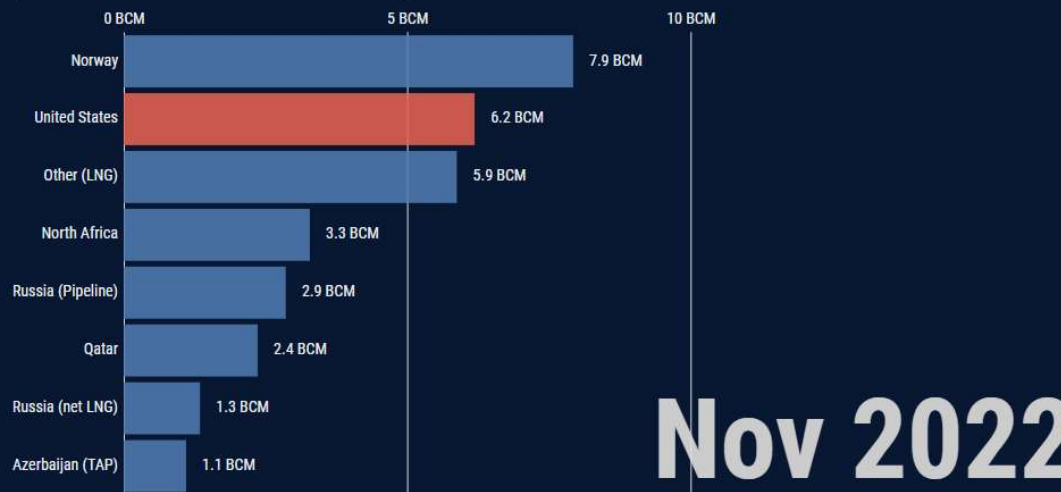
With the Russian invasion of Ukraine in February 2022, EU supplies shifted dramatically away from Russia to Norway and the United States.

All units in billion cubic meters (bcm). EU-28 defined as EU-27 + UK; Russian LNG exports are net (i.e., Russian exports consumed in Europe).

Use the pause button at the bottom left to focus on a specific time period.



Aug 2021



Nov 2022



Jan 2021 Mar 2021 May 2021 Jul 2021 Sep 2021 Nov 2021 Jan 2022 Mar 2022 May 2022 Jul 2022 Sep 2022 Nov 2022

Sources: ENTSOG, Gassco, GasVista's Leviaton

CSIS CENTER FOR STRATEGIC & INTERNATIONAL STUDIES



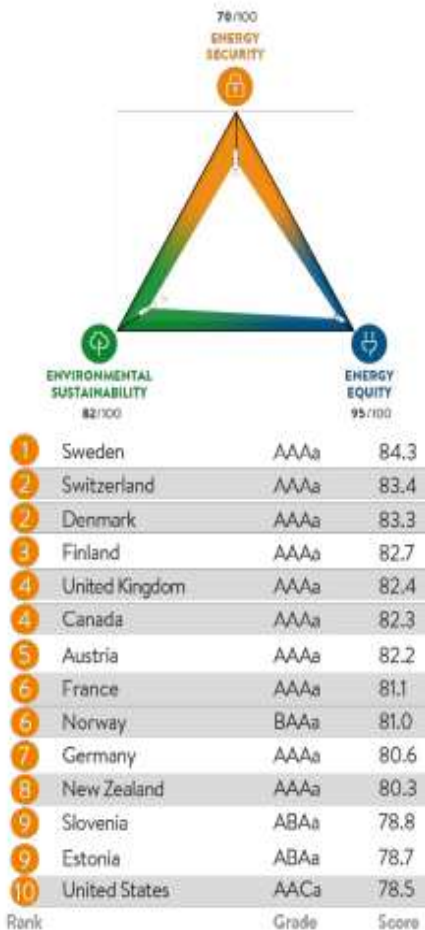
Suppliers, volumes and gas prices in EU 2021-22

Energy Security Trilemma

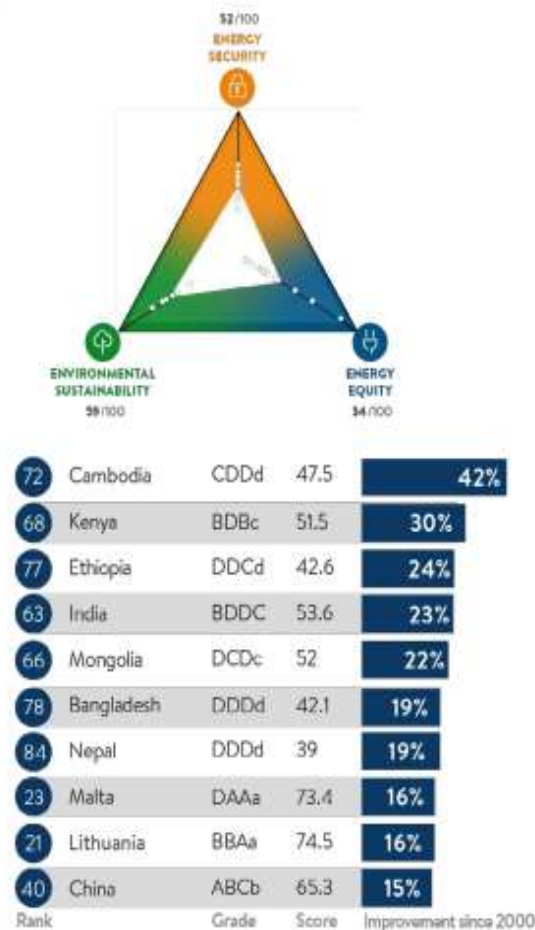


2022 TOP PERFORMERS AND IMPROVERS

TOP 10 RANK OVERALL PERFORMERS



TOP 10 COUNTRIES OVERALL IMPROVERS



World Energy Trilemma Index Energy Security

- Reflects a nation's capacity to meet current and future energy demand reliably, withstand and bounce back swiftly from system shocks with minimal disruption to supplies.

Energy Equity

- Assesses a country's ability to provide universal access to affordable, fairly priced and abundant energy for domestic and commercial use.

Environmental Sustainability

- Represents the transition of a country's energy system towards mitigating and avoiding potential environmental harm and climate change impacts.

Early Warning of Energy Conflicts

EU-Russia Early Warning Mechanism (2009)

To shield EU consumers from future potential RF-UA gas disputes
(EC+RF - UA not invited !!!)

Energy Charter Treaty Early Warning Mechanism (2014)

To prevent energy supplies disruptions
Open for all ECT Members and Observers

In 2014 three meetings of the Energy Security Contact Group
convened by ECT Secretary General / no gas flow interruption

Energy Related Disputes Management



Energy Charter Treaty provides for dispute resolution of Investment disputes (art. 26, 27), certain Environmental disputes (art. 19), Transit disputes (art. 7), Competition disputes (art. 6) and Trade disputes (for non members of the WTO (Art. 5).

MODEL INSTRUMENT ON MANAGEMENT
OF INVESTMENT DISPUTES
(WITH EXPLANATORY NOTE)

CCDEC2018 26

WTO provides dispute resolution mechanism for its members



GUIDE ON INVESTMENT MEDIATION

U.S.-Mexico-Canada Agreement 2020 (USMCA – replaced NAFTA), BITs, EU Agreements (Canada, Singapore, Japan,...)

??? Questions for Participants ???

What covers Energy Security?

What are the impacts of Russian Invasion on EU Energy Security?

What are the impacts of Russian Invasion on Global energy Trends?

What are the available dispute resolution mechanisms in energy cooperation?

Key Takeaways

- Achieving Energy Security is in vital interest of any state entity. However its content may differ broadly
- Energy interdependency doesn't bring peace dividend on its own merit
- Only handful of countries can provide full energy security / autarchy based on its own resources
- Energy investment and variability of resources and transit routes strengthen resilience and energy security
- Energy Security is not free of charge
- Reaction to crises is shaping the future
- In the short term states prioritise energy security measures over climate security

People in Energy Transition Diplomacy



B.N.Zanganeh, Iran, F.Kishida, Japan. Energy Charter Conference 2016, Tokyo

The End

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LESSON 6 – ENERGY SECURITY AND DIPLOMACY

NEXT

LESSON 7 – CLIMATE DIPLOMACY