

Fossil fuel production subsidies: Scale, Impacts & Opportunities for Reform

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Structure of the presentation

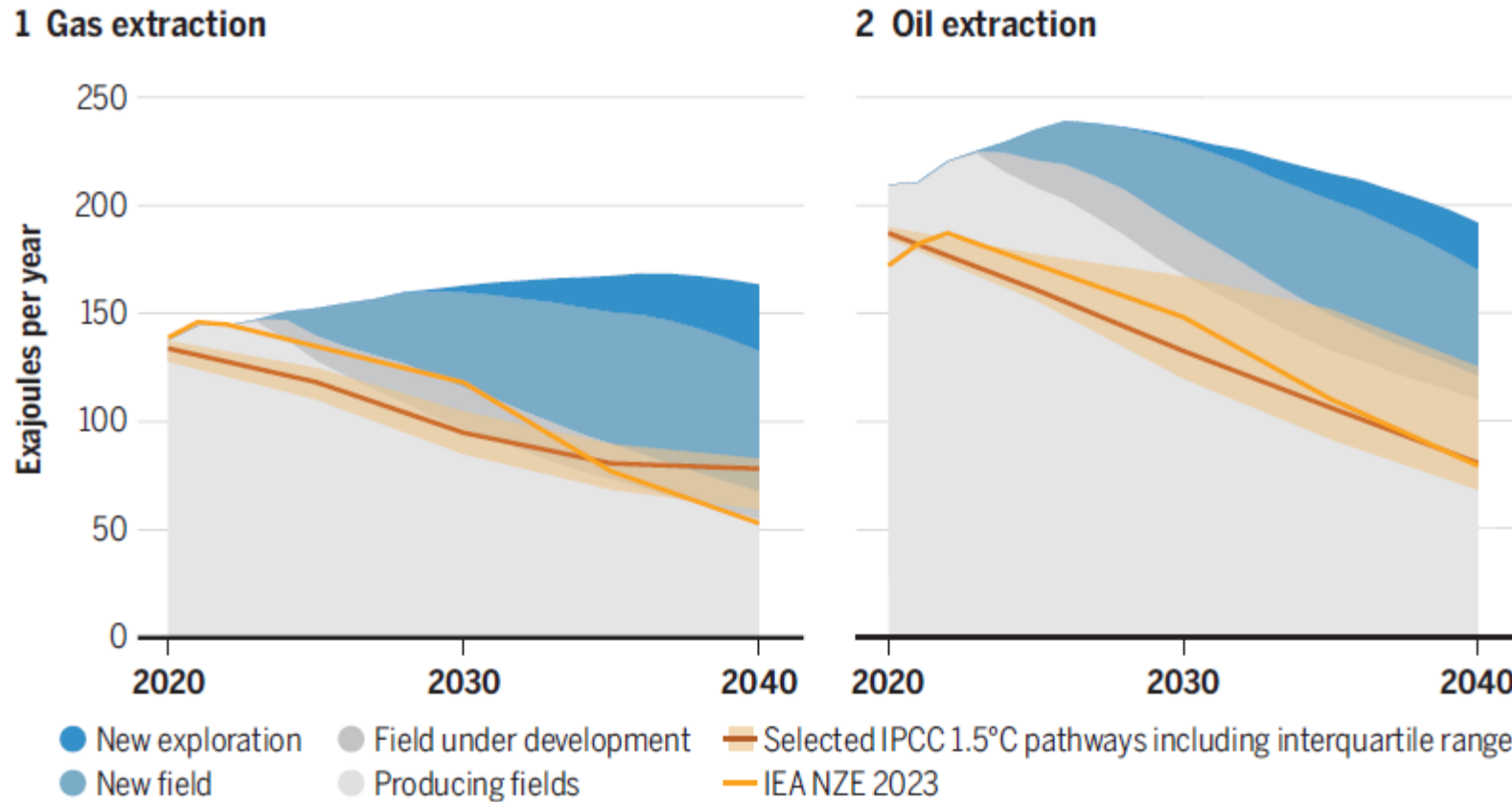
1. Context of fossil fuel production subsidies
2. Typologies and scale of fossil fuel production subsidies
3. Impacts of fossil fuel production subsidies
4. Opportunities for reform of fossil fuel production subsidies

Context of fossil fuel production subsidies

KEY MESSAGE: In the fossil fuel production sector, most harmful subsidies are those that incentivize exploration and new development

- Investments in exploration of new fossil fuels and development of new oil, gas and coal projects are inconsistent with the 1.5°C climate change target and are also harmful to biodiversity, land, water, and other elements of the environment.
- Despite peaking demand ([IEA 2023](#), [BP 2024](#)), **governments collectively expect to produce 29% more oil and 82% more gas by 2030** than is consistent with a 1.5°C global warming pathway. The gap widens by 2050, to 260% for oil and 210% for gas. ([SEI](#), [ClimateAnalytics](#), [E3G](#), [IISD & UNEP, 2023](#)).
- This expansion is, in part, fueled by subsidies designed to stimulate exploration and Final Investment Decisions by companies.

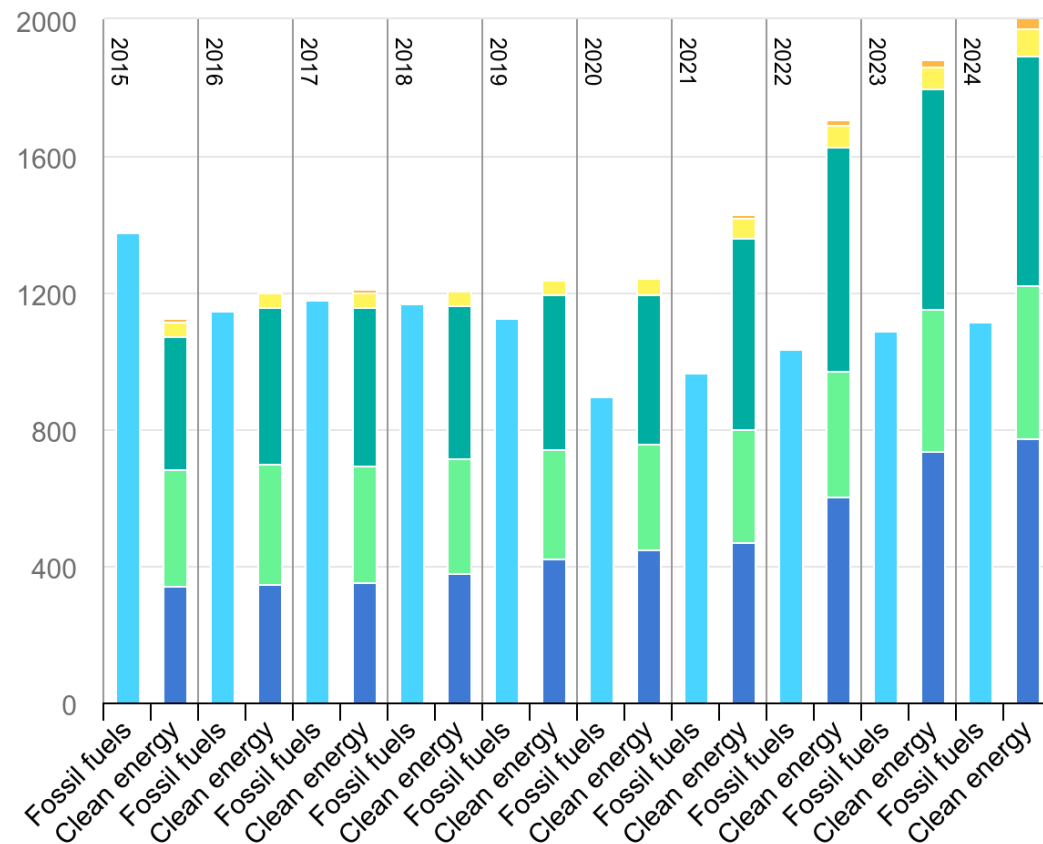
No new fossil fuel projects are needed in a 1.5°C world



Source: [Science 2024](#). Graphs reflect forecasted global primary energy production from gas and oil compared with energy demand based on IEA NZE and Selected IPCC 1.5°C scenarios ($n = 26$).

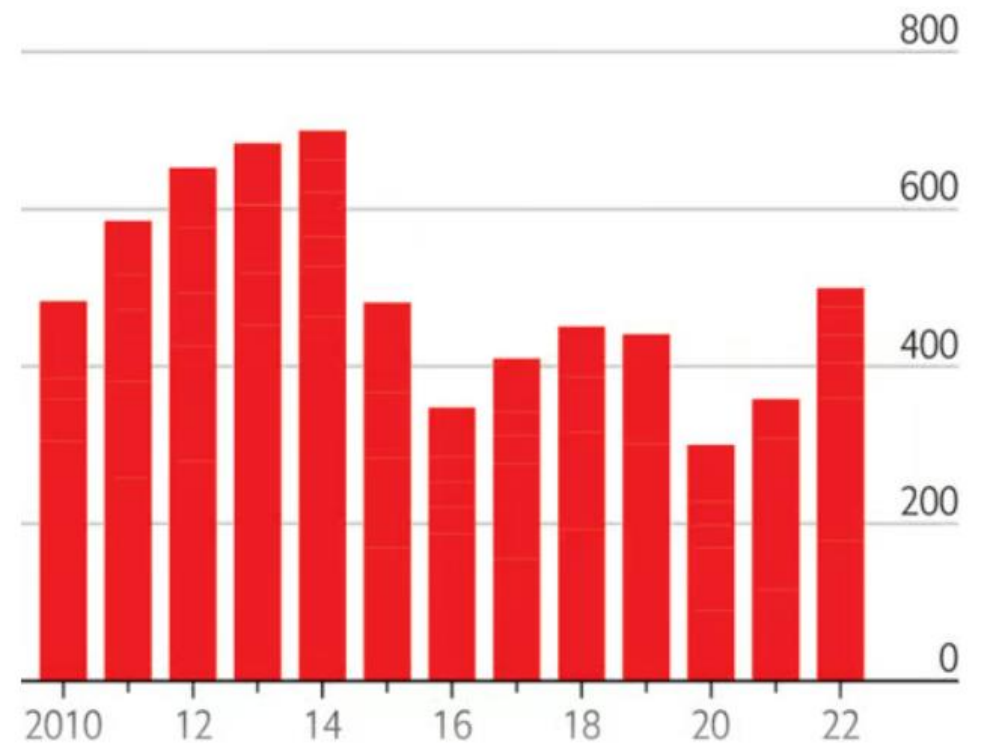
Energy Investment Trends

- The world now invests almost twice as much in clean energy as it does in fossil fuels
- There are significant regional imbalances
- Coal investments are plummeting
- Oil and gas investments were on the rise off the back of the energy security concerns.



Source: IEA World Energy Investment Report 2024

Global oil and gas upstream capital expenditure, \$bn



Sources: International Energy Forum; S&P Global

Source: The Economist 2024

Typologies and Scale of Fossil Fuel Production Subsidies

Mechanisms of Fossil Fuel Production Subsidies & Methodologies for Their Identification and Quantification

- The table below categorizes of fossil fuel subsidies (FFS) for both production and consumption under methodological approaches in select international processes
- Production subsidies are delivered via all four mechanisms
- Production subsidies can be provided at both national and subnational, sometimes local levels

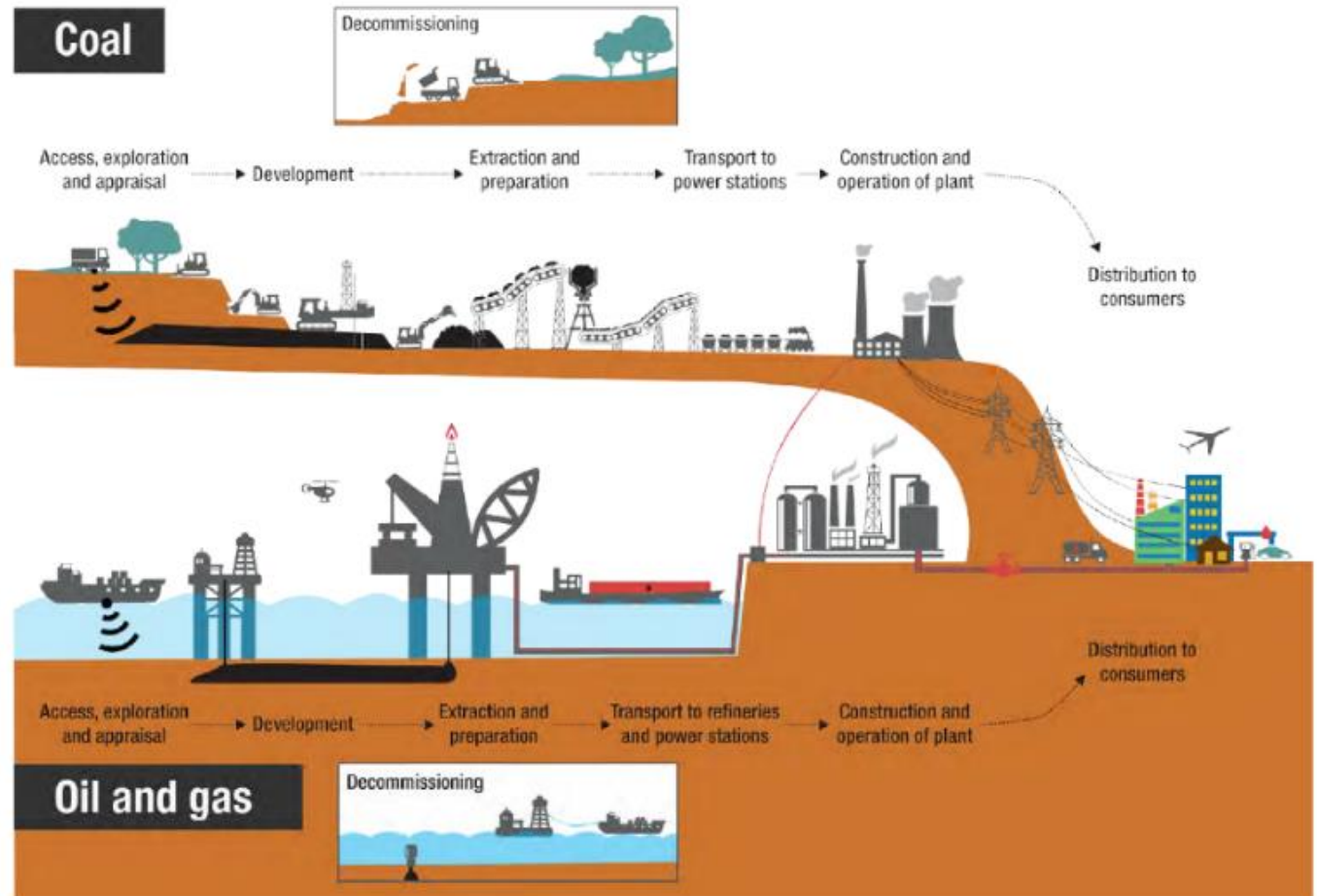
Subsidy mechanism	WTO ASCM Article 1	OECD	IMF & IEA	G20 & APEC peer reviews of FFS	SDG Indicator 12.c.1
Direct transfer of funds	+	+		+	+
Tax expenditure and underpricing of government-provided goods or services	+	+		+	+
Induced transfers (market or price support)	+		+		+
Transfer of risk to governments	+	+		+	+

Source: Adapted from UNEP, IISD & OECD (2019). [“Measuring Fossil Fuel Subsidies in the Context of the Sustainable Development Goals”](#)

Fossil Fuel Production Subsidies Categorized by Stage

Subsidies to fossil fuel production can apply across all of its different stages (most capital-intensive stages **in bold**) :

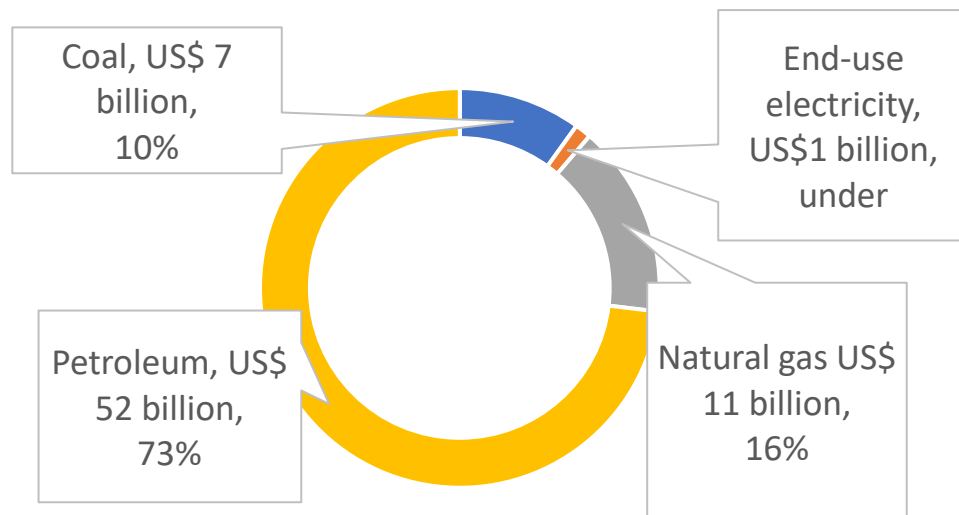
- **Access, exploration and appraisal (before Final Investment Decision)**
- **Development (following Final Investment Decision)**
- Extraction and preparation
- Transport (to utilities and refineries)
- **Plant construction** and operation (utilities and refineries)
- Distribution (to end users)
- Decommissioning



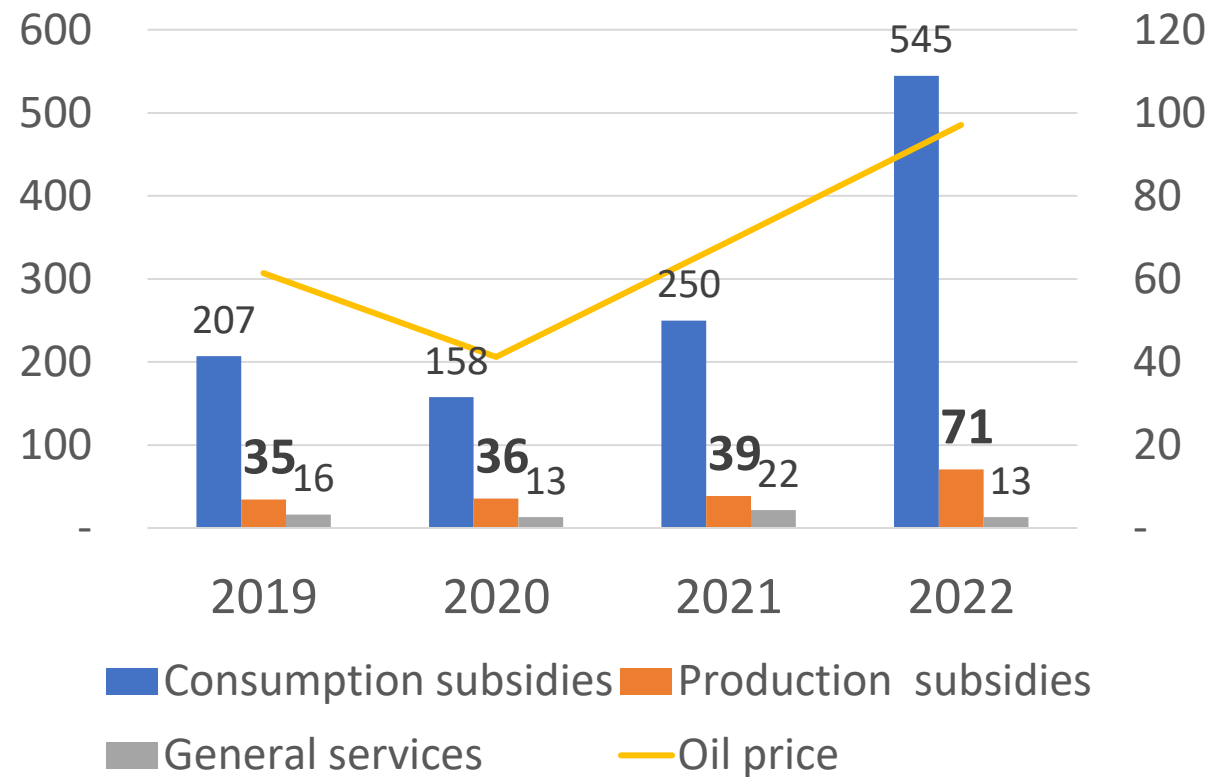
Source: Empty promises: G20 subsidies to oil, gas and coal production

Scale of Fossil Fuel Production Subsidies

- 48 economies analyzed by the OECD accounted for just under half of the global fossil fuel production. This is the best proxy for the global level as no global estimate is available for fossil fuel production subsidies
- In these economies, production subsidies (direct budgetary transfers & tax expenditure) constitute roughly 15% of the total value of fossil fuel subsidies
- Many subsidies to fossil fuel production remain unquantified, including transfer of risk (e.g. liabilities for oil pollution) and some potential induced transfers to the industry



Fossil fuel subsidies in 48 select economies.
Nominal \$US billion (left axis) vs. annual average oil price (right axis)



Source: Author's summary based on: [Fossil Fuel Subsidies Tracker](#); [OECD Inventory of Support Measures for Fossil Fuels 2023](#) | [OECD](#); [World Bank Commodity Prices](#)

Targeting of Fossil Fuel Production Subsidies

In legislation passed by national parliaments or government regulations, fossil fuel production subsidies are often provided specifically for a certain:

- **Stage** (e.g. exploration, development, construction and modernization of refineries, pipelines, storage)
- **Fuel** (crude or refined coal, natural gas, oil)
- **Technical characteristics** of producing asset or produced fuel (e.g. marginal fields e.g. with high rates of depletion or oil viscosity)
- **Geographical area** (e.g. remote or disadvantaged areas)
- **Recipients** – e.g. grants, concessional loans and loan guarantees are specific
- **Technologies:**
 - E.g. a lot of recently introduced production subsidies are aimed at reducing environmental harm, e.g. for carbon capture and storage, reducing flaring and methane leakages
 - There is a spike in production subsidies for “blue” hydrogen based on fossil fuels, with carbon capture and storage.

Impacts of fossil fuel production subsidies

Environmental Harm from Fossil Fuel Production Supported by Subsidies

All types of environmental harm, not just climate change	Direct from sources involved in fossil fuel production ("Scope 1" for GHG emissions)	Indirect from other sources up and down the value chain of fossil fuel production	
		Associated with procurement of goods and services for fossil fuel production ("Scope 2" for GHG emissions)	All other negative impacts, such as from the combustion of fossil fuels, use of fossil-based plastics and synthetic fertilizers ("Scope 3" for GHG emissions)
Biodiversity Loss	+	+	+
Resource Depletion	+	+	
Land Contamination	+	+	+
Water Discharges	+	+	+
Air Pollution	+, esp. from coal	+	
Climate Change	+, e.g. by fossil fuel company operations and from methane leakages	+	+

Source: Author's summary of various environmental impact assessments, ISO 14001 family of standards

Mounting evidence base on environmental harm from subsidies to fossil fuel expansion (exploration, new development and new plant construction)

- **Subsidies to fossil fuel expansion:**
 - Based solely on the time value of money, a dollar of subsidies that reduce capital costs (for example, accelerated depreciation) has triple the value to investment decision-makers compared with a dollar of subsidies that have short-term impacts (for instance, royalty relief for extraction or subsidies to fossil fuel consumption) ([IISD-GSI & ODI, 2017](#))
 - **Subsidies to fossil fuel exploration** are inconsistent with the remaining 1.5 degrees carbon budget
 - **Subsidies to the development of new coal mines or oil and gas fields** lead to carbon lock-in but also other types of environmental harm (e.g. biodiversity loss, land contamination and water pollution)
- Similarly, **subsidies covering capital costs of construction of fossil fuel refining and processing** may have not only direct negative environmental impacts but also **compounding negative effects on the environment**, e.g. via the production of plastics and chemical fertilizers, in addition to the negative climate impacts

Nearly all fossil fuel production subsidies lead to negative climate impacts

- A global removal of fossil fuel production subsidies is estimated to generate CO₂ emission reductions by around 1 Gt per year, roughly 2% from the baseline ([IISD-GSI & ODI, 2017](#)), in addition to 6-8% emission reductions from consumption subsidy reform ([NCM 2017](#))
- In recent years, governments increased their subsidies for technologies that aim at mitigating environmental harm that is caused by production activities directly or indirectly, Yet, there is insufficient evidence base to justify such subsidies because:
 - Subsidies to reduce direct environmental harm from fossil fuel production (e.g. for reducing local air pollution, gas flaring, methane leakages, land remediation) do not address indirect environmental harm from such activities such as climate change
 - Subsidies to carbon capture and storage (CSS) and carbon dioxide removal (CDR) remain risky bets as these are yet unproven technologies ([IISD 2024](#))
- Subsidies for just transition of workers, decommissioning, land remediation, orphan wells closing should be designed in a way to minimize the risk of the industry pushing all the closure costs to the governments

Opportunities for reform of fossil fuel production subsidies

National Progress and International Processes

- Progress is lacking on domestic reforms of subsidies to fossil fuel production. New forms of production subsidies were introduced during the COVID-19 and energy security crises.
- There are anecdotal examples of fossil fuel production subsidies reform (e.g. EU hard coal production subsidies), including in the economies that do not consider the reformed measures to have constituted subsidies.
- Some international processes (e.g. G7, G20, SDGs, UNFCCC) use the qualifier “inefficient” for differentiation of fossil fuel subsidies, some (CBD) use “harmful” - all without focus on production subsidies yet.
- In 2024-2025, the Coalition of Finance Ministers on Climate Action and the new Netherlands-led Coalition On Phasing Out Fossil Fuel Incentives Including Subsidies (COFFIS, 13 governments) both prioritize alignment of methodologies on identification and quantification of fossil fuel subsidies.
- G7 has a deadline of reforming “inefficient” fossil fuel subsidies by 2025.



Recommendations based on IISD's and IISD partners publications:

- Governments should reform all producer fossil fuel subsidies and create a national roadmap for phasing them out. These would require them to screen such subsidies against alternative policy levers to achieve the same objectives, and justify any remaining subsidies as “efficient” and “harmless”. In particular, governments should:
 1. ensure consistent reporting on subsidy schemes for fossil fuel production and expand such reporting to fossil fuel investments by state-owned enterprises and publicly owned financial institutions
 2. work closely within international institutions and processes to ensure that existing incentives for fossil fuel production are eliminated
 3. adopt strict timelines for the phase-out of fossil fuel production subsidies with country-specific measurable outcomes
 4. **start with the elimination of all subsidies to the exploration of oil, gas and coal**
 5. **prioritize phaseout of incentives aimed at stimulating Final Investment Decisions on the development of new coal mines and oil and gas fields and the construction of plants for refining and processing**
 6. monitor reforms so that no new incentives are established
 7. use the fiscal space created by subsidy phaseout to support, domestically and internationally, just transition of workers and communities dependent on fossil fuel production as well as the scale-up of clean energy, universal energy access and other public goods

Annex I: Background

Preparing for the Fossil-Fuel Industry's Sunset

- The oil and gas market is volatile, and there is increasing **competition to stay the “last oil producer” standing**
- International Energy Agency sees **demand for all fossil fuels (coal, oil, and gas) peak by 2030** ([IEA 2023](#))
- **BP sees demand for oil demand peak in 2025** ([BP 2024](#))
- All governments committed to “**transition away from fossil fuels in energy systems in a just, orderly and equitable manner**” under the [UNFCCC Global Stocktake in 2023](#)
- **Global net zero commitments by mid-century**
- Members of the [Beyond Oil & Gas Alliance](#) and the new UK government champion the end of oil and gas expansion. Ending all new oil and gas licencing is the next step.
- Yet, **governments collectively expect to produce 29% more oil and 82% more gas by 2030** than is consistent with a 1.5°C global warming pathway. The gap widens by 2050, to 260% for oil and 210% for gas. [SEI, ClimateAnalytics, E3G, IISD & UNEP](#). (2023).
- It is in this context, **that subsidies to fossil fuel production are increasing.**

Summary of impacts of fossil fuel production subsidies

- Subsidies to fossil fuel production support oil, gas and coal companies and have **no direct benefits for the poor and vulnerable**, with the exception of explicit support for just transition
- Designed to attract investment in fossil fuel production or to maintain it, these subsidies:
 - create **zombie energy** and potentially **stranded assets**, i.e., production from fields that would be economically unviable without government support.
 - act as **a negative carbon tax**, artificially lowering the cost of producing more oil, coal and gas, that can be passed through in the form of lower market prices, encouraging more fossil fuel consumption and emissions
 - **skew energy markets**, making investment in energy efficiency and clean alternatives seem less competitive
 - create “**carbon lock-in**” entrenching fossil dependency. Once investments are made, there is a strong incentive for governments and businesses to continue production to recoup them
 - are likely to have **trade impacts** that vary by subsidy type and fuel supported.

Annex II: Notes & References

Notes:

Economies included in the OECD analysis of 48 economies: Argentina, Armenia, Australia, Austria, Azerbaijan, Belgium, Brazil, Canada, Chile, China, Colombia, Costa Rica, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, Moldova, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, South Africa, Spain, Sweden, Switzerland, Türkiye, United Kingdom, United States.

These economies account for nearly half of the global production of coal, oil and gas.

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