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Cite this as: *BMJ* 2026;395:e100890
http://doi.org/10.1136/bmj-2026-100890
Published: 21 October 2026

Green transition provides a crucial opportunity to finance universal health coverage

Judite Gonçalves and colleagues argue that health financing must be at the centre of how fossil fuel subsidies and critical mineral revenues are governed

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The green energy transition is opening up potential sources of new finance that could be used to fund universal health coverage (UHC) in low and middle income countries. Fossil fuel subsidies—government support that keeps energy prices below supply costs, whether through direct payments, state owned utility losses, or price controls—can account for a large proportion of government spending.[1] Reducing these subsidies as part of a shift away from fossil fuels, alongside introducing carbon pricing and capturing new royalties from critical minerals, would provide extra resources for public services. Health systems, which bear current and future health consequences of fossil fuel use and mining activities, have a strong argument for benefiting from these resources, but how much reaches those in greatest need will depend on political decisions and good governance.

Fossil fuel subsidies crowd out health spending

Fossil fuel subsidies remain large, widespread, and acutely sensitive to international oil prices. When Russia invaded Ukraine in 2022, the resulting price shock pushed subsidy expenditure to $1.4tn globally, a 50% increase in a single year.[2] A new global subsidy expenditure peak is expected in 2026 as governments respond to the oil price surge caused by the ongoing Iran conflict with measures such as tax cuts and price caps to protect consumers.[3] With constrained government budgets, higher subsidy expenditure threatens health spending: a recent study of 126 countries estimated that each additional dollar spent on fossil fuel subsidies displaced $0.35 of domestic health spending during 2015-19.[4]

Yet oil price shocks also open windows for reform because when global prices subsequently fall, governments can remove subsidies with low consumer impact, reducing the political cost of reform (box 1). However, windows for policy change close quickly, and reforms have often proved short lived: a study of reform attempts made in 2016-23 by the 21 countries with the largest petrol subsidies in 2003-15, found that only 30% survived 12 months and just 9% lasted three years.[5] Reform typically fails when governments raise prices once without linking them to international prices. This means gains are eroded as prices rise again, inflation accelerates, or currencies weaken—a fragility compounded by successive crises like the covid-19 pandemic and the Ukraine and Iran conflicts.

Box 1: Lessons from Indonesia and Brazil

Indonesia's 2014-15 fossil fuel subsidy reform

In November 2014, President Joko Widodo reduced fuel subsidies, increasing petrol and diesel prices by around 31% and 36%, respectively. By January 2015, petrol subsidies were eliminated entirely and diesel shifted to a fixed subsidy. Falling global oil prices at the time softened consumer impact and reduced political opposition.

Fuel subsidies fell from 19% of government expenditure in 2014 to under 7% in 2015,[1] helping sustain expansion of the national health insurance scheme (Jaminan Kesehatan Nasional, JKN), launched in January 2014. Population coverage has grown from 50% in 2014 to 98% in 2024.[21 22] Savings were also redirected towards healthcare infrastructure, as well as a national conditional cash transfer programme (Program Keluarga Harapan, PKH), which has been credited with reduced child stunting.[23 24]

However, reform proved fragile. The mechanism linking fuel prices to global oil prices, introduced in 2015, was suspended in 2017,[25] and subsidies rose sharply when prices surged again in 2022, showing the importance of automatic price adjustment mechanisms.[5]

Subsidies were also mistargeted, with 74% of the benefit accruing among the richest 60% of the population.[26] Meanwhile the JKN continues to face structural financing gaps[21] that limit the ability to provide universal health coverage for the most vulnerable populations.

Brazil's earmarking of oil royalties for municipal health

Brazil's 2013 Law 12 858 earmarked 25% of oil royalties from new extraction contracts for municipal healthcare (with the remaining 75% for education), seeking to address chronic underfunding of local health systems and compensating local communities for the environmental and health externalities of mining.

Yet, evaluation found no overall effect of new earmarked revenues on health spending or service delivery.[27] Only municipalities receiving above average per capita royalties had significant increases in health spending, and these were slow to occur and concentrated in hospital care because primary care investment is constrained by rules prohibiting use of royalties for payroll expenditure.

Two barriers recur: fiscal substitution, where governments offset new earmarked funds by reducing existing health allocations; and weak absorptive capacity, where health systems lack the workforce, infrastructure, and governance capacity to convert additional funding into services.

Royalties are also concentrated in the oil producing states. In 2025, three states (Rio de Janeiro, Espírito Santo, and São Paulo) received 93% of state royalty payments.[28] A parallel framework for mineral royalties distributes more broadly, including to municipalities with supporting infrastructure for mineral processing or distribution such as railways and ports, but payments remain highly concentrated in producing municipalities,

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which do not always correspond to areas with greatest health needs.

Critical minerals: new revenue potential, old governance risks

Critical minerals such as lithium, cobalt, and rare earth elements are essential to the low carbon energy transition, creating a new revenue stream for mineral rich countries. Large quantities are required for electric vehicle batteries, solar panels, and electricity storage, with demand projected to grow by 30% for copper and almost 400% for lithium by 2040.[6] Wealthy and fast growing economies are racing to secure long term supply deals—as shown by the US making its 2025 package of assistance to Ukraine conditional on access to the country's critical mineral reserves.

However, although low and middle income countries are beginning to draw up critical mineral strategies (eg, Africa's green minerals strategy), most do not yet have the fiscal frameworks needed to capture a fair share of the resulting revenues. There is a risk that the "resource curse" dynamics of the oil and gas era recur, with revenues captured by a small elite and fiscal windfalls that fail to translate into public services and, ultimately, development gains.[7]

The need to compensate for local environmental and health damages of extractive activities adds an extra layer of governance complexity.

Potential to fill universal health coverage financing gap

The annual financing gap for UHC is estimated at $20-54bn a year across low and middle income countries during 2026-30.[8] However, progress has stalled, exacerbated by sharp cuts to foreign aid for health, principally from the US. Health spending is projected to fall in over 80% of low income countries and 40% of lower middle income countries by 2030.[9] The countries most exposed to cuts to foreign aid are those furthest from universal coverage.

Table 1 sets this gap against potential resources from the green transition by country income group. Two main patterns emerge. First, except in the low income country group, fuel subsidies are enormous relative to the universal coverage gap. Lower middle income countries alone spent $187bn on fossil fuel subsidies in 2024, against a UHC financing gap of just $2bn-$19bn a year. Even accounting for other claims on reform savings—compensation for poor households, renewable energy investment, debt reduction—the scale of subsidy expenditure suggests a modest protected share would close the UHC gap.

Table 1 | UHC financing gap and potential resources from green transition ($bn/year) by country income group

Country income group*	Population (2024, billion)	UHC incremental cost (2015)†	UHC financing gap (mean 2026-30)‡	Fossil fuel subsidies (2024)¶	Unpriced carbon and pollution costs (2024)‖	Critical mineral government revenues (mean 2021-40)**
Low income	0.6	27-57	17-35	5.3	15.3	1.1
Lower middle income	3.1	120-250	2-19	187.2	819	1.2
Upper middle income	2.8	NA	0-0.2	341.1	3958	3.6
High income	1.4	NA	NA	199.0	1880.8	3.5
World	8	310	20-54	732.7	6673.1	9.4

* World Bank categorisation and population totals sourced from the World Bank's World Development Indicators.

† Estimated mean annual incremental cost of achieving 80% population coverage of 218 interventions under different scenarios (Watkins et al).29

‡ Residual financing gap after projected domestic and external public revenues. Estimates by Stenberg et al under the optimistic financing progress scale-up and moderate financing ambitious scale-up scenarios.8

¶ Subsidies from undercharging for supply costs ("explicit subsidies"), all fuel types combined (coal, petroleum products, natural gas, electricity). Data from IMF fossil fuel subsidies database.

‖ Estimates of the externality costs of air pollution and climate change arising from fossil fuel overconsumption ("implicit subsidies"). Data from IMF fossil fuel subsidies database.

** Average annual government revenues (royalties + corporate income tax + state participation) from seven energy transition minerals (bauxite, cobalt, copper, graphite, lithium, nickel, rare earth oxides) projected to 2040 under the announced pledges scenario11central estimate.

Second, the distribution of revenue potential and need is imperfectly aligned: upper middle and high income countries have no UHC financing gap but account for around 75% of both fossil fuel subsidies and the projected critical mineral revenue potential. Low income countries, with the largest UHC gap, could generate just $5.3bn in fuel subsidy savings and have a projected $1.1bn in critical mineral government revenues annually. This misalignment points to the need for international redistribution mechanisms in line with a just green transition—one that ensures the shift away from fossil fuels does not disproportionately harm poorer countries and communities.[10]Moreover, whether these revenues materialise at scale and reach health budgets depends on political decisions, governance arrangements, and implementation capacity.

Beyond fossil fuel subsidies, the unpriced costs of air pollution and climate change attributable to fossil fuel overconsumption were estimated at around $6.7tn globally in 2024.[2] These implicit costs can be met through carbon pricing (eg, taxes on carbon emissions or cap-and-trade schemes that require polluters to buy permits), which is a stated policy goal for many governments and a key Paris Agreement commitment.[10]

Estimates of revenue potential from critical minerals in table 1 are also understated. The projections cover only seven minerals and measure only incremental demand attributable to the energy transition (eg, for electric vehicle production but not for general industrial uses). They also reflect current—conservative—royalty and tax regimes. Revenue potential from broader reform of mining royalty and taxation frameworks is much larger. Moreover, exploration activities continue to find new critical mineral reserves, and large areas are still unexplored, mainly in Africa and Central Asia.[6]

The heterogeneity within country income groups is equally important. Fuel subsidy spending ranges from negligible to levels exceeding total health expenditure.[4] Critical minerals endowments also vary: the Democratic Republic of the Congo, for example, holds over 70% of global cobalt reserves, while Chile and Australia together account for the majority of lithium.[11] Each country faces

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different challenges and opportunities in reforming subsidies and mineral revenue governance frameworks.

Turning green transition money into UHC progress

Using the green transition to achieve UHC requires three linked steps: generating financial resources, governing them so they reach health budgets, and converting funds into UHC gains.

Generating funds

Savings from eliminating fossil fuel subsidies are potentially the largest and most immediate funding source. However, these savings are volatile as they are vulnerable to oil price shocks and political pressure. Critical mineral revenues are more predictable but slower to materialise, geographically concentrated, and subject to complex geopolitical and governance risks. Carbon pricing—including carbon taxes and emissions trading systems—generates relatively stable and predictable revenue streams while creating incentives to reduce fossil fuel use. In 2025, carbon pricing raised $107bn globally, but over 80% accrued to high income countries. For most low and middle income countries, eliminating fossil fuel subsidies is the intermediate and more immediately achievable step towards pricing carbon emissions.[12]

A durable health financing strategy could draw on all three sources, with different governance instruments suited to each. Importantly, these funding sources must be weighed against the substantial public investment the energy transition requires (eg, renewable capacity, grids, infrastructure).

Fiscal governance

Ensuring new revenues reach health budgets, rather than disappearing into general revenue or being eroded by tax avoidance and evasion or by pressure from investors to lower royalty rates, is critical. However, this step has been absent from discussions and framework design. The examples in box 1 show how funds can erode or fail to translate into local health investments.[13-15] Investments in the national health insurance scheme that accompanied Indonesia's 2014-15 subsidy reform did not stand the test of time, partly because they were a political choice made under unusually favourable conditions instead of a precommitted governance mechanism. Similarly, Brazil's experience with oil royalties earmarked for health going mainly to wealthier producer states shows the challenge of converting royalties into local health investments. Health ministries must engage early in fiscal planning processes—presenting costed, timebound UHC investment cases to finance ministries when fossil fuel subsidy reform takes place or royalty frameworks and carbon pricing rules are being designed, rather than after fiscal allocations are locked in.

Earmarking works best to support visible health programmes such as expanding primary care, free maternal care, and community health worker programmes, which deliver tangible benefits quickly. Such programmes can be used to protect groups disproportionately affected by subsidy reform or new extractive activities while helping to build support for sustaining reform through future price cycles. However, earmarking is unlikely to deliver sustained increases in health's budget share and can introduce rigidities that fragment the pooling of funds across the population to share financial risk.[16]

Allocation of green transition money to health through earmarking for specific programmes, as well as budget processes and public financial management systems, need not be rigidly linked to amounts generated. However, health should be a named priority with a guaranteed minimum allocation and built-in transparency and monitoring mechanisms. These mechanisms protect health allocations from political shocks and increase awareness and accountability among key constituents. Civil society organisations and professional health bodies have a critical role in sustaining this accountability. Additionally, major fiscal decisions affecting population welfare should be subject to health impact assessment.[17]

Health financing outcomes

UHC requires sustained, pooled, government managed funding, making it well suited to financing through the green transition, especially if combined with sovereign wealth funds to smoothen macroeconomic volatility. For example, Chile's stabilisation fund is funded primarily from mining revenues.[18] Unlike development assistance or one-off transfers, fuel subsidy reform savings, carbon pricing proceeds, and critical mineral royalties can be domestically owned, recurring, and—with the right governance structures—ringfenced for health.

Fossil fuel subsidy reform, in particular, is a triple win strategy that simultaneously saves or raises government funds, averts hundreds of thousands of air pollution related deaths,[19] and can generate resources for health and social investment—a logic shared by health taxes on tobacco, alcohol, and sugar sweetened beverages.[14] Critical mineral taxation constitutes new flows rather than reallocations of existing spending and is therefore likely to face lower public opposition than reducing fuel subsidies—although both face strong industry lobby. Whereas fuel subsidy reform has health co-benefits from correcting climate change and environmental externalities, critical mineral revenues depend on expanded extraction activities that generate additional local environmental and health damages. These costs should be recognised in royalty and tax frameworks as externalities to be compensated, not merely as corporate social responsibility commitments. Green transition revenues must be partly directed towards mitigation and compensation in affected communities, and towards protection of low income groups most affected by rising fuel prices resulting from subsidy reforms. Beyond health allocations, green transition revenues can also support broader social investments with important health returns (eg, Indonesia's conditional cash transfer programme).

Because green transition resource potential and UHC need are geographically mismatched (table 1), domestic reform must be complemented by international redistribution. Existing instruments could be extended with explicit health objectives—for example, debt-for-health swaps, health earmarks within just energy transition partnerships, and health financing benchmarks embedded in multilateral conditionality frameworks.[10] In the current fractured geopolitical environment, regional coalitions and bilateral agreements are more immediately achievable than full multilateral coordination. More ambitious proposals—such as global wealth taxation channelled through international funds—face even steeper political barriers but represent a complementary long term strategy for financing UHC.[20]

Health has a particular claim on funds created by the green transition: fossil fuel dependence incentivised by subsidies directly generates the air pollution and climate related health burdens that health systems must absorb, in addition to the environmental and health damages from mining activities. The green transition will generate enormous fiscal flows globally, and this opportunity to finance accelerated achievement of UHC in low and middle income countries must not be missed.

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Key messages

- $733bn was spent on fuel subsidies in 2024, far outweighing the sums needed to close the funding gap for universal health coverage globally
- Generating funds for health through reducing fossil fuel subsidies and introducing carbon pricing and critical mineral royalties will require deliberate policy choices
- The health sector needs a ringfenced share of revenues at the point of reform, such as protected earmarking rules subject to periodic review
- Health ministries, civil society, and professional health organisations must urgently engage and influence royalty frameworks for critical minerals, which are being locked in now
- Green transition revenues flow disproportionately to higher income countries, while universal health coverage financing gaps are concentrated in lower income countries, making international redistribution mechanisms essential

Contributors: This article draws on research and policy expertise at the intersection of health financing, fiscal policy, and the green energy transition. JG's research on fossil fuel subsidies and health expenditure crowding out provides the quantitative anchor for the paper's central argument. FP contributed expertise on Brazil's oil royalty framework and co-authored with JG the underlying empirical work on municipal health spending. MSR co-leads with JG a Wellcome Trust grant on leveraging critical mineral revenues and fossil fuel subsidy reform for health equity in Indonesia and contributed Indonesia specific expertise. CM has extensive research experience in health system financing across low and middle income countries, including as joint principal investigator of two NIHR Global Health Research programmes in Brazil, Indonesia, and other countries. JG and CM conceived the article. JG led the drafting and is the guarantor.

AI use: Claude (Anthropic) was used to improve initial drafts for structure, clarity, and brevity.

Competing interests: We have read and understood BMJ policy on declaration of interests and have no interests to declare.

Provenance and peer review: Not commissioned; externally peer reviewed.

The authors are supported by the National Institute for Health and Care Research using UK aid from the UK government to support global health research (NIHR133252; JG, FP, CM); the NIHR Global Health Research Centre on NCDs and Environmental Change (NIHR203247; CM); and a Wellcome Trust grant (325496/Z/25/Z; JG, MSR, CM). The views expressed are those of the authors and not necessarily those of the NIHR, the UK government, or the Wellcome Trust.

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