ENERGY TRANSITION MYTHBUSTERS

MYTH #3 — The falling price of renewable energy makes decarbonisation inevitable

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TRADE UNIONS FOR ENERGY DEMOCRACY

THE MYTH

It is often assumed that the key factor determining the shape and pace of energy transition is the price of renewable energy. Many argue that as technology progresses and renewables become more affordable, we will eventually reach a 'tipping point' where renewable energy becomes cheaper than fossil fuels. Once this tipping point is reached, it is argued, the renewable transition will inevitably ramp up, bringing climate goals in sight. According to this narrative, the role of governments is to subsidise renewable technologies and invest in new research and development until this tipping point is hit.

Advocates of this position are quick to point to data showing that the price parity tipping point is almost upon us. A recent report by the International Renewable Energy Agency (IRENA) suggested that almost two thirds of renewable power added in G20 countries in 2021 cost less than the cheapest coal-fired options. According to this report, in 2021 onshore wind costs fell by 15 per cent, offshore wind by 13 per cent and solar PV by 13 per cent compared to 2020 prices.[116]

If we take these figures at face value — and if we accept the assumption that prices are the decisive factor in the progress towards net zero — then there seems to be much cause for optimism.

THE REALITY

Data around falling renewables costs should be treated with caution. In the EU, falling renewables costs do not necessarily translate to cheaper wholesale electricity prices, which are still set by fossil fuels. Additionally, **the integration of more renewables into energy systems will require expensive infrastructure investments that are typically not included in cost estimates,** meaning that the costs of transition are much higher than renewables price data alone suggests.

Moreover, the relationship between energy prices and energy transition is far more complicated than the myth suggests: falling prices do not necessarily advance decarbonisation. Evidence suggests that price can be trumped by other factors, in particular, profit maximisation. A myopic focus on price obscures the importance of lowering demand and increasing efficiency in endeavours towards decarbonisation. And the focus on costs tends to ignore the horrific labour exploitation that is common when mining for so-called 'transition minerals' and when manufacturing renewable technologies.

FALLING RENEWABLES PRICES MASK HIDDEN COSTS

The data on declining renewable generating costs obscures additional costs. Firstly, in the EU context, the price paid for electricity on the wholesale market is not a straightforward reflection of the costs of generation. Prices on the European wholesale market — where electricity is bought and sold by generators and suppliers — are determined by a system called 'marginal pricing'. Under this system, all generators receive the same price for the electricity they are selling at any given time. And this price is set by the most expensive generating source. Therefore, **falling renewable costs do not have a direct impact on wholesale prices, which continue to be set by the cost of fossil fuels.** [117]

Additionally, there are expenses that are unique to an electricity sector powered by renewables which renewable price data does not account for.[118] Unlike fossil and nuclear power plants which can be controlled and coordinated in line with the imperatives of shifting demand, wind and solar are 'variable' energy resources. This means that our capacity to generate electricity from wind and solar is dependent upon a number of variables such as the weather, climate, season and time of day. This brings a host of extra challenges in ensuring that energy supply is capable of meeting demand. What happens, for example, at points when consumer demand is surging yet the wind is not blowing and the sun is not shining?

One partial solution for this technical issue is scaling up investment in storage capacity. However, storage investments are not growing at all on pace with increases in renewable production.[119]

Accordingly, incumbent companies face a further financial burden of adapting, updating and expanding electricity networks so that they can absorb and transport the increasing amounts of variable renewable energy. The International Energy Agency (IEA) estimates that once solar and wind provide up to 25 per cent of total energy production, the additional costs of their variability will increase the unit costs of installed wind and solar capacity by an additional 10–15 per cent.[120] As renewables increase their share of total production beyond 25 per cent, these additional costs will only increase.

Others estimate the system costs of renewables to be even higher. According to research that calculates the broader system costs to keep renewable energy reliable in Texas, US, from integrating backup power plants to building storage facilities, the wind and solar price per MWh increases seven- to elevenfold.[121]

This means that data on falling renewables prices is in some ways deceptive. The pursuit of price parity tipping points, where renewables become more competitive than fossil fuel energy, is proving less straightforward than advocates of this myth suggest.

A focus on prices also masks the fact that renewable power would not be so cheap without the labour exploitation that tends to underpin the supply chain. From the mining of metals and minerals to the manufacturing of PV panels and wind turbines, there's growing evidence linking renewable energy supply chains to forced labour and modern slavery.[122]

FALLING PRICES DO NOT NECESSARILY SHIFT INVESTMENT

Even if renewables were to become cheaper than fossil energy, this by no means guarantees that investors will automatically favour the lower-carbon and lower-priced option. The relationship between price and energy transition is far more complicated than proponents of this myth claim.

When we consider the history of energy transition, this becomes clear. Energy historian Andreas Malm's study of the shift from water-based power to coal-based steam power in nineteenth century Britain is highly illuminating.[123] Malm shows that even though water power was cheaper than coal, industry

bosses opted to transition from the former to the latter. The move towards a solid fuel that could be easily packaged and distributed across the world — in a way that water could not — allowed industry to relocate production to areas where labour was cheaper and less likely to offer organised resistance. **Ultimately, even though coal was more expensive, it was seen as preferable because it was a fuel that could more easily be profited from.**

Malm argues that history is repeating itself today. In the early 2000s, the likes of BP and Shell were beginning to divert serious attention to renewable energy, becoming the second and fourth largest manufacturers of solar panels in the world respectively. However, their renewable business operations were soon suspended and shut down because they were proving unprofitable. The reason: declining renewables costs. A former executive of Shell's solar division explained the problem: 'In the oil market, the prices are going up and down in cycles. The solar price is just going one way — it's going down.' [124]

Indeed, as discussed in Myth #1, falling renewables costs at the hands of competitive auctions have ushered in a destructive utility death spiral, which sees energy firms struggling to survive. **In sum, falling prices can present an obstacle to profit.** In an economic system that values the bottom line above all else, this is no recipe for the shifts in investment required for decarbonisation.

FOCUSING ON FALLING PRICES OBSCURES RISING DEMAND

The focus on cheaper renewables tends to neglect the fact that for the energy transition to succeed, countries and industries, especially in the global North, urgently need to reduce their energy consumption.

A recent report authored by TNI and TUED argued that **changes in the energy system currently underway are better described as an 'energy expansion' than an energy transition.** According to this report, the global electricity system has been expanding at a rate of 300 GW per year in recent years. The report suggests that this outstrips annual growth in global renewable capacity, with renewable capacity growing by just 198 GW in 2020, for instance.[125]

New IEA data released after this report was written suggests that the rate of renewables expansion will accelerate over coming years, projecting a growth in renewable capacity of between 350 and 400 GW per year between 2022 and 2027.[126] Yet even if this more optimistic forecast comes to fruition, the lion's share of renewables growth will be cancelled out by rising electricity demand. In the words of IRENA: 'An energy transition requires that the use of renewables expands by more than the growth in energy demand, so that less non-renewable energy needs to be used. Many countries still have not reached this point, despite dramatic increases in their use of renewables for generating electricity.' [127]

The IPCC, the IEA, and others have calculated that energy efficiency and conservation adjustments can contribute up to 40 per cent of reductions in energy emissions by 2050.[128] A different estimate indicates that already existing technologies, under a low-energy demand future, could bring this figure to 53 per cent under full operationalisation.[129]

WE NEED TO REDUCE ENERGY DEMAND

However, reducing energy consumption is not profitable — indeed, the more energy we consume, the more money there is to be made. Therefore, **the current for-profit energy market model fails to adequately invest in demand-reducing technologies.** And the myth that falling prices present a panacea for the energy transition helps to keep the question of demand reduction off the table.

Rather than obsessing about falling renewables costs, attention would be better placed on the more pressing question of how to reduce global energy demand. Currently, wealthy consumers use far more energy than they need while others do without, struggling with energy poverty and lacking access to reliable power connections. We need to de-commodify energy (through public ownership) in order to tackle this injustice, substantially reducing global energy consumption in ways that ensure equity in the process.

SUMMARY

- **The falling price of renewable energy does NOT make decarbonisation inevitable.**
- **The unit cost of renewable energy is falling. However, data on falling prices tends to obscure the hidden costs of decarbonisation associated with the infrastructural upgrades and changes required. These hidden costs will add an estimated 10–15% per cent to the price of a unit of energy, once renewables account for 25 per cent of total energy production.**
- **In the EU context, declining renewables prices are not reflected in the wholesale cost of energy, which is set by the prices of fossil fuels because of the EU's marginal pricing system.**
- **Much new investment in new renewable capacity is cancelled out by expanding electricity demand.**
- **Price is not the decisive factor shaping energy transition. The evidence — both historical and present day — shows that falling energy prices often undermine energy industry profits. In turn, falling renewable prices run the risk of detracting investors.**
- **Reducing energy demand could reduce energy-related carbon emissions by between 40 per cent and 53 per cent by 2050. Focusing on falling prices obscures the importance of demand reduction. Because demand reduction measures are not profitable, they remain side-lined.**

This factsheet is part of the Energy Transition Mythbusters publication. Read the full report and find out about the other myths that threaten decarbonisation here: *tni.org/energytransitionmythbusters*

ENDNOTES

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The Transnational Institute (TNI) is an international research and advocacy institute committed to building a just, democratic and sustainable planet. For more than 40 years, TNI has served as a unique nexus between social movements, engaged scholars and policy-makers. TNI has gained an international reputation for carrying out well researched and radical critiques. As a non-sectarian institute, TNI has also consistently advocated alternatives that are both just and pragmatic, for example providing support for the practical work of public services reform. **https://www.tni.org/en**

TRADE UNIONS FOR ENERGY DEMOCRACY (TUED) is a growing global network of unions and close allies working to advance democratic control and social ownership of energy, in ways that promote solutions to the climate crisis, address energy poverty, resist the degradation of both land and people, and respond to the attacks on workers' rights and protections. Established in late 2012, TUED has grown to span dozens of trade unions, labour federations and social movement and policy allies from countries around the world, both North and South. **https://www.tuedglobal.org/**

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