At the cross-roads of a low-carbon transition: what can we learn from the current energy crisis?

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When it rains it pours. The energy crisis we face today is the result of a confluence of several forces at play: persistent underinvestment in the energy sector and fragile market regulation coupled with unfavourable weather events and insufficient buffers (Figure 1A) (IEA, 2021b). Together with the strong COVID-related demand recovery, they created an unsettling mismatch in our global energy markets leading to skyrocketing energy prices, in particular in Europe (Figure 1B). The crisis has brought to bear the multiple sources of tension that could threaten the stability and reliability of our energy system. It has also triggered a multiplicity of emergency measures to contain costs for households and firms at a time when the energy transition is set to accelerate. As countries embark on what promises to be the most ambitious energy transformation of our times, the current events show how transition to a climate neutral world needs to minimise the risk of such disruptions while securing public support.

Figure 1A. EU Gas Storage Use
Monthly average of filling level percentage

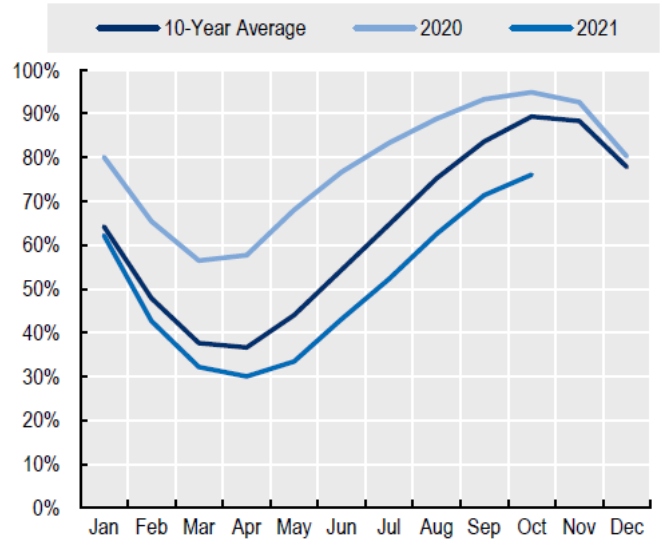


Figure 1B. European Natural Gas Prices
Oct 2007-Oct 2021
Eur/MWh



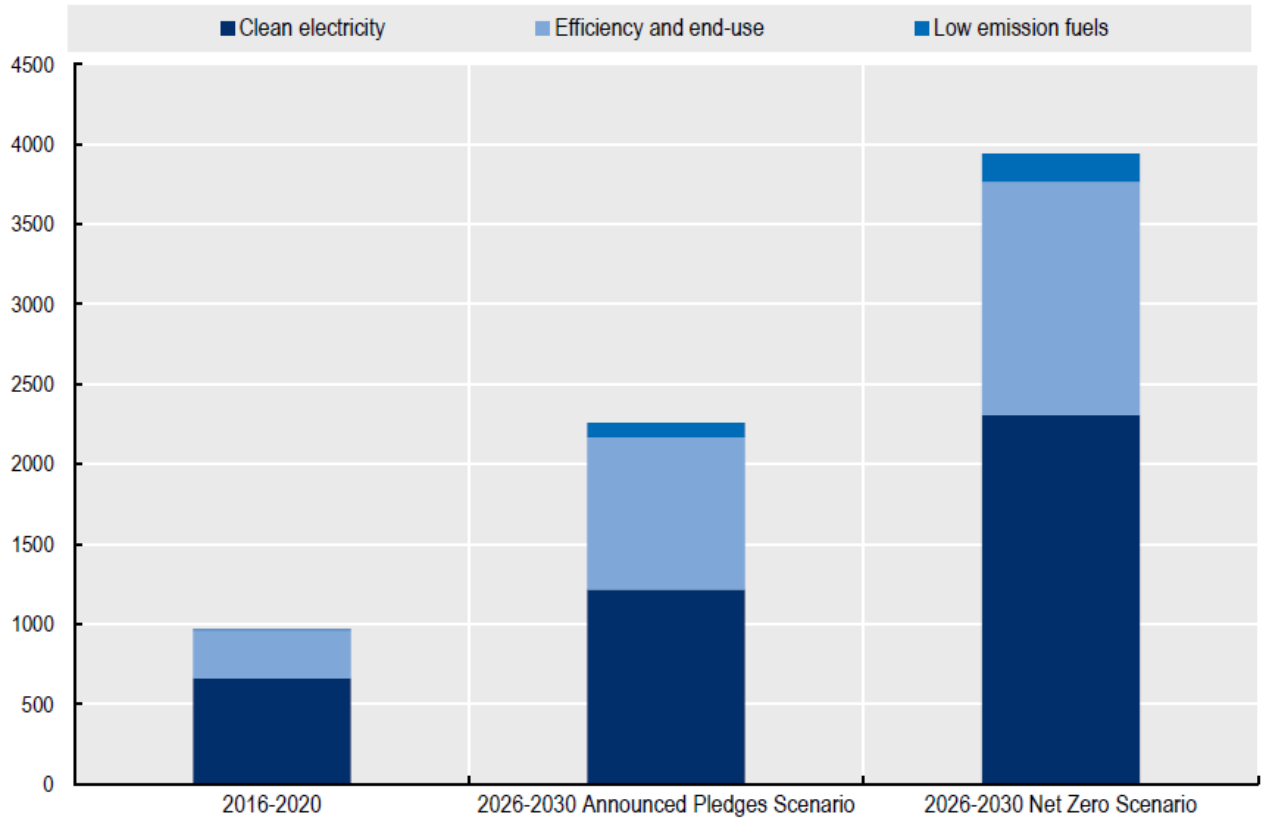
Note: Panel A shows the filling rate of European natural gas storage over 2020, 2021 and the 10 year average filling rate. Panel B uses the EEX EGIX THE Index (European Energy Exchange European Gas Index) as the reference price for natural gas for one month ahead contracts. It is based on exchange trades which are concluded in the respective current front month contracts (THE). The EGIX corresponds to the current market price for gas deliveries in the next month at any time.
Source: Panel A: Aggregated Gas Storage Inventory, AGSI+ (gie.eu). Panel B: Refinitiv.

Between calls for greater energy security and energy affordability, particularly at a time when mounting inflation pressures are already raising concerns about people's purchasing power (OECD, 2021c), this crisis is very much exposing difficulties governments will face to stay on course towards a climate neutral world. Countries representing around 70% of the world's global carbon emissions have already announced climate neutrality targets by mid-century (IEA, 2021a), which necessitates a rapid and unprecedented transformation of the way we produce and consume our goods and services. Yet the steps to achieving this transformation remain unclear in many jurisdictions.

According to the recently published IEA World Energy Outlook, a net-zero emissions world requires accelerating clean

electrification of many energy uses, improving energy efficiency, substantially reducing methane emissions and boosting innovation (IEA, 2021c). This requires a major shift in investment (Figure 2), R&D, regulation and carbon pricing.

Figure 2. Annual average clean energy investment by technology in the Announced Pledges and Net Zero Scenarios
2016-2030



Note: The scenarios are from the IEA World Energy Outlook 2021. The Announced Pledges Scenario maps out a path in which the net zero emissions pledges announced by governments so far are implemented in time and in full. The Net Zero Emissions Scenario sets out what needs to be done to move beyond these announced pledges towards a trajectory that would reach net zero emissions globally by mid-century, which is consistent with limiting global warming to 1.5 ˚C.
Source: (IEA, 2021c).

Reasons for the current shortages are multiple, but some of them reflect future challenges that could be linked to decarbonisation. The post-Covid demand surge is partly responsible for a global shortage of energy, but it coincides with an undersupply due to a lack of investment in clean energy at a time when investment in brown energy has been

receding over the past decades (IEA, 2021b) .

In short, the current situation should provide lessons to prepare better for the transition to a climate neutral world through strengthening our energy systems as our energy infrastructure morphs into one that relies much more on variable renewable energy sources. Policy makers thus need not only steer incentives towards clean energy but they should also ensure that as energy systems become cleaner they remain reliable and affordable. This requires larger and more timely investment, a focus on electricity system flexibility, and better pricing systems. The IEA estimates that investment in clean energy projects and infrastructure needs to more than triple over the next decade to reach net-zero emissions (Figure 2).

Failure to better prepare our energy system would only exacerbate public finances pressure while weakening the price signals. Countries are currently scrambling to provide aid to their citizens to soften the blow from rising energy prices at the cost of higher emissions. Interventions range from means-tested transfers to low-income households, energy tax cuts, caps on energy prices, and excess profit taxes on energy companies (Table 1). While protecting vulnerable households is necessary, it is important that such measures remain time limited and not undermine incentives for clean energy.

The OECD has long since highlighted the importance of policy alignment and how a comprehensive, inclusive and cost-effective strategy to address climate change will require bringing in complementary policy areas and exploiting synergies among them (OECD, 2015e) (OECD, 2021a). The current episode highlights this further, especially since higher energy prices could render already contentious policies, such as carbon taxes, even less palatable and politically tenable (Politico, 2021). To this end, governments need to strengthen targeted social support to vulnerable populations, including through well-designed revenue-recycling schemes, and to

bolster active labour market support to help workers and encourage a more efficient reallocation of labour (OECD, 2021d) (Vona, forthcoming). They need to upgrade market regulation to ensure greater stability as well as competition, and to encourage investment in energy system flexibility. Reforming financial sector regulation is also key, such as requiring greater disclosure in financial markets to better account for climate risk and mobilise private funds (OECD, 2021b). Lastly, transparency, better communication and carefully assessing compensation packages would be necessary for garnering public support so as to not derail the energy transition.

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