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From energy to material security – a world challenged by supply and demand imbalances

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The world is not facing one, but multiple crises



The world constantly tries to cure symptoms - not root causes

Making things worse

Example: Current (global) energy and (European) electricity crises

What People See

High prices for energy and electricity

Proposed cure

- Demand reduction
- Price cabs
- Revenue curbing of inframarginal generators
- Windfall profit taxation in the fossil fuel sector

What People See Don't See

- High demand amidst COVID-19 recovery
- Insufficient supply amplified through Russian invasion into Ukraine

Ideal cure

- Protect vulnerable consumer groups with target measures
- Boost (renewable) supply
- Reduce demand



EU's discussion on potential market intervention at a glance

Measures come with significant design challenges

ACER's assessment of possible market interventions (the further a measure is depicted to the right, the higher the risk of market distortions) and related design challenges (not exhaustive)



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How to avoid short-term market interventions hampering the energy transition

Restoring a healthy supply and demand balance will be key



good



Next supply-demand-imbalance on the horizon: energy transition materials

Time to start thinking ahead

Increase of demand for energy transition materials

(in thousand tonnes (kt), IEA's sustainable development scenario; excludes structural materials such as concrete, steel or aluminum)



- Inverted relations: clean energy technologies (e.g. renewables, electric vehicles, batteries) are much less carbon-intensive but far more material intensive than fossil fuels
- Though there is no shortage in resources worldwide as per the IEA, "Today's supply and investment plans for many critical minerals fall well short of what is needed to support an accelerated deployment of solar panels, wind turbines and electric vehicles."
- Long-term visibility, robust investment signals and global collaboration are key to ensure future mineral security – as illustrated by the current energy and electricity crisis





Thank you for your attention

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Marginal cost based pricing explained

As wind and solar PV have low to no marginal costs, they reduce power prices



Merit order effect: The higher the share of wind and solar in the power mix ... the lower the power prices

GW

Merit order effect

Vestas:

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pay-as-bid pricing)