

## P4G Summit: 100% clean power is the key to carbon neutrality

This mini-briefing explores the implications of the IEA's 'Net Zero by 2050' report for the 2021 P4G Seoul Summit

### Key takeaways:

- **P4G members can take confidence from the IEA Net Zero report that 100% clean power is crucial for carbon neutrality.** It envisions the power sector turning from the biggest CO<sub>2</sub>-emitting sector in 2020 to the only 100% clean sector by 2040
- **The date for “power sector net zero” must be considerably earlier than the economy-wide “net zero”.** The IEA anticipates that global electricity demand will rise by 50% by 2030 alone; clean power will be critical in decarbonizing other sectors.
- **P4G countries need to significantly change the way they generate electricity.** Fossil fuels currently dominate the power sectors of most P4G countries. The size of their coal fleet is also significant, especially in countries like South Africa, South Korea, Indonesia and Vietnam
- **A large fraction of coal capacity in P4G countries is sub-critical.** Bespoke governmental climate financing would be needed to help finance investment to rapidly shift from coal in developing and emerging countries.

**The spotlight is now on the 2021 P4G Seoul Summit.** The IEA Net Zero report and recent G7 communique have set the marker for countries on decarbonizing their power sectors. The P4G countries now have an opportunity to build on this, agree on affirmative actions and policies, and deliver on the vision of carbon neutrality.

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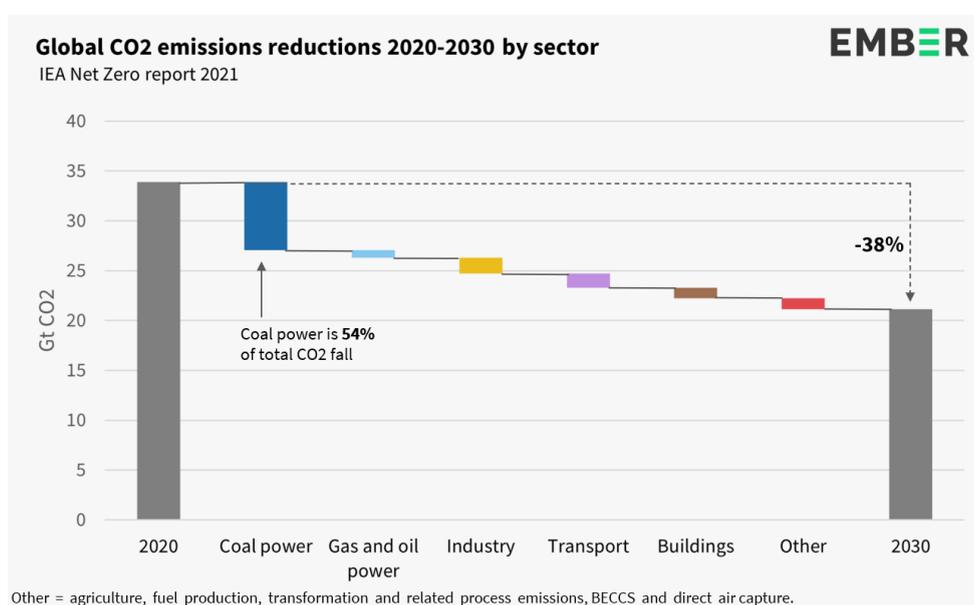
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## 1 | Background on IEA's 'Net Zero by 2050'

The International Energy Agency (IEA) this week published what they called one of their most important reports in their 50-year history: [Net Zero by 2050](#). It is a vision for the world that boosts jobs and economic growth whilst keeping warming to below 1.5 degrees. It's the most thorough and authoritative analysis yet of the pathway to carbon neutrality.

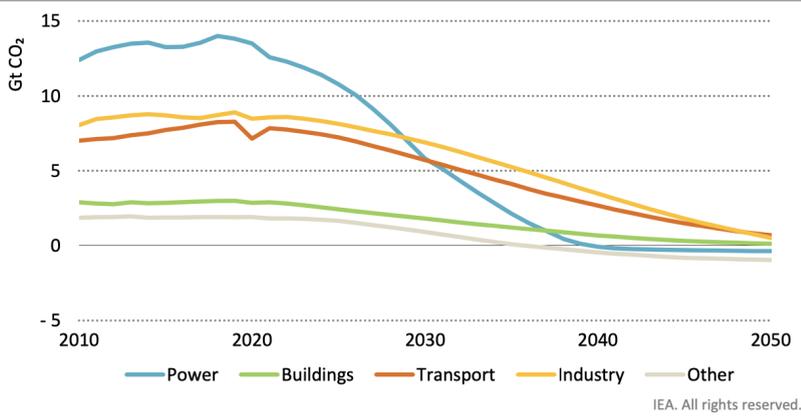
The IEA's data shows global CO2 emissions must fall 38% by 2030, of which over half (54%) come from coal power alone. This adds significant weight to the UN Secretary General's [statement](#) that "Phasing out coal from the electricity sector is the single most important step to get in line with the 1.5-degree goal".



## 2 | What does this mean for the P4G countries?

It is clear that IEA sees 100% clean power as the necessary precursor to net-zero transition by 2050. In its net-zero pathways, power turns from the biggest CO2-emitting sector in 2020, to the only 100% clean sector by 2040.

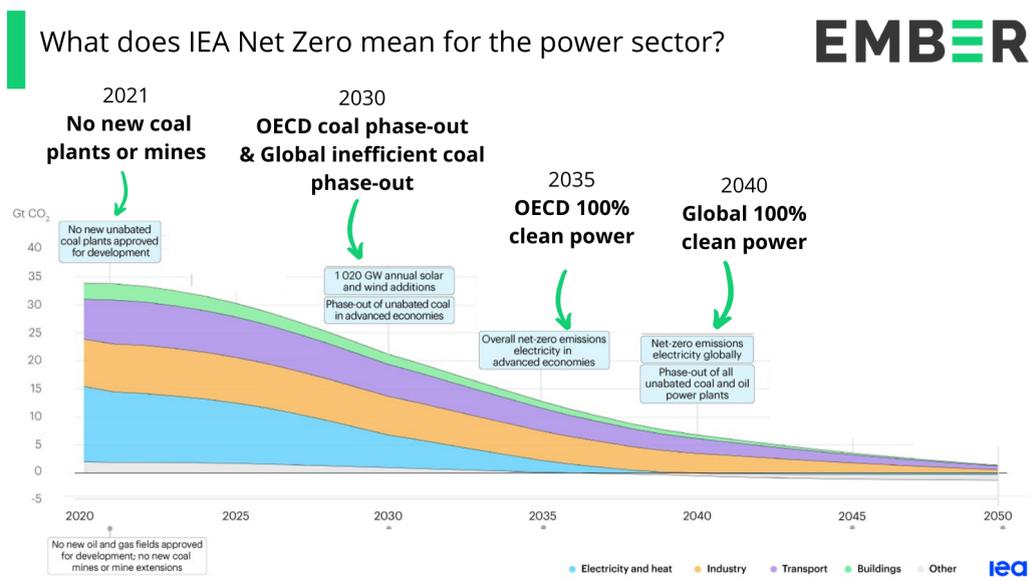
**Figure 3.1** ▶ CO<sub>2</sub> emissions by sector in the NZE



*Emissions fall fastest in the power sector, with transport, buildings and industry seeing steady declines to 2050. Reductions are aided by the increased availability of low-emissions fuels*

Last week is proving to be a watershed in the clean transition debate as the IEA’s Net Zero report was followed by the **G7’s [communiqué](#) of 21st May 2021**. The G7 nations committed to end the overseas financing of coal this year and rapidly scale-up technologies and policies to transition to “*overwhelmingly decarbonized power systems in the 2030s*”.

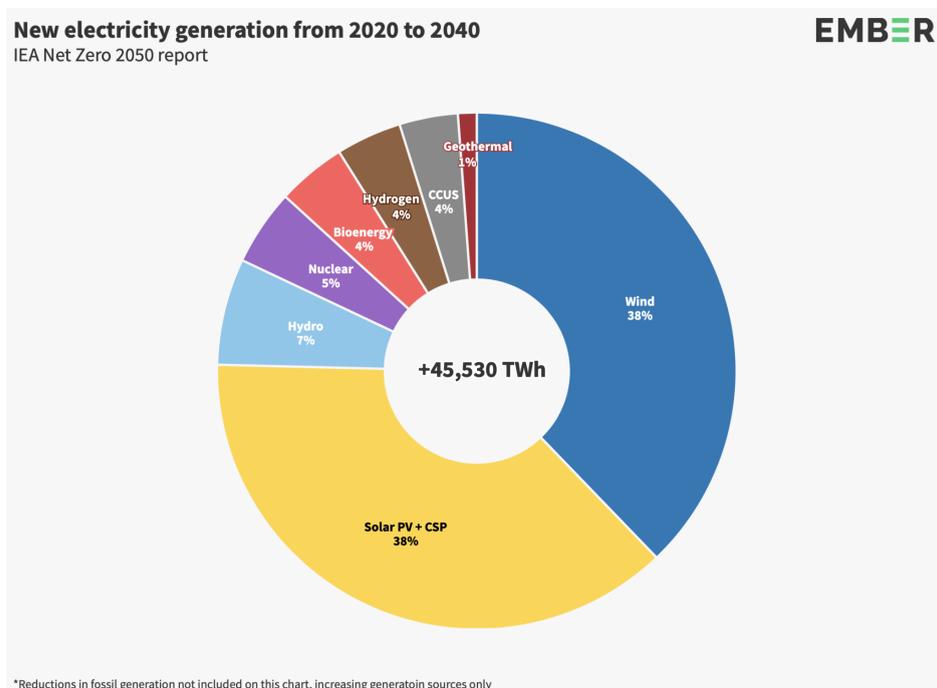
The spotlight is now on the P4G countries to ride this momentum and agree on short-term and mid-term targets that can set the stage for carbon neutrality. The IEA’s Net Zero milestones make clear the action needed by the power sector. **For all the P4G countries, the implications are clear: stop all new coal power plant and mine investments now, phase-out coal power in OECD countries and all inefficient coal power globally by 2030, and achieve 100% clean power in OECD countries by 2035 and globally by 2040.**



### 3 | Why must P4G countries start decarbonizing their power sectors now?

The IEA anticipates that the global electricity demand will rise by 50% by 2030 alone, making clean electricity critical in decarbonizing other sectors. ***The date for “power sector net zero” must be considerably earlier than the economy-wide “net zero”.***

Three-quarters of all the new electricity that replaces fossil electricity and meets growing electricity demand will come from wind and solar alone, say the IEA. The coal phaseout necessary to achieve carbon neutral power sectors will lead to opportunities for massive investments in solar and wind power. The remaining technologies make up only a quarter of the pie, and are mostly needed for the flexibility they bring to the power system to help balance wind and solar.

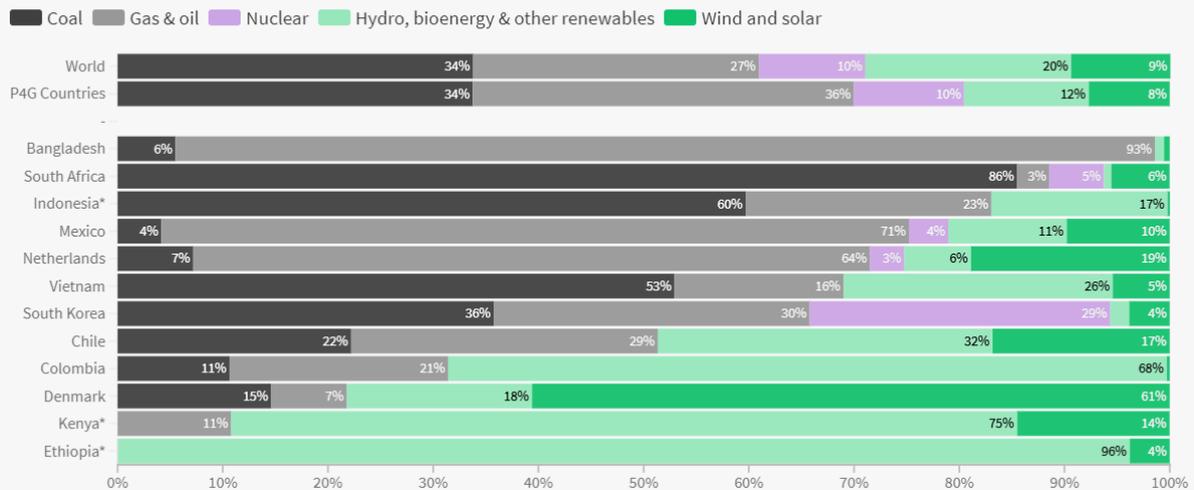


**The 12 P4G member countries have a long way to go to achieve a net-zero power sector and would need to significantly change the way they generate their electricity.** Fossil fuels, especially coal and gas, dominate their power sectors. These accounted for about 70% of total electricity last year in all the 12 countries combined. Seven P4G nations had a higher share of fossils in their electricity compared to the global average in 2020 (61%). Countries like Bangladesh, Mexico and Netherlands overwhelmingly relied on gas and oil for their electricity while others like South Africa, Indonesia, Vietnam and South Korea relied on coal.

## A long way to clean electricity

Electricity production mix in 2020, for P4G nations

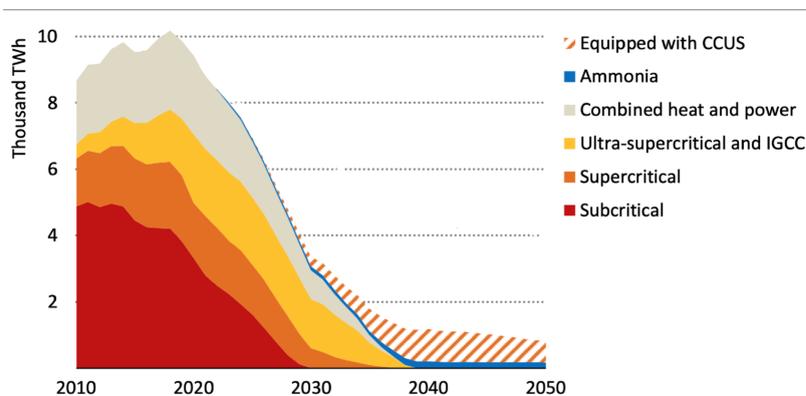
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Ember's Global Electricity Review, March 2021. • For Ethiopia, Indonesia, and Kenya, 2019 data is used as 2020 data is not publicly available

The IEA shows that global coal power needs to fall 69% this decade in their net-zero pathway. They explicitly state that inefficient “subcritical” coal power plants need to be phased out by 2030 globally. That is a critical milestone for non-OECD countries, especially South Africa and India.

**Figure 3.13** > Coal-fired electricity generation by technology in the NZE



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Coal-fired power accounted for 27% of global energy CO<sub>2</sub> emissions in 2020, and in the NZE, all subcritical plants are phased out by 2030 and all plants without CCUS by 2040

**So where is the coal capacity among the P4G countries?** As per the Global Energy Monitor’s [coal plant tracker](#) (from January 2021), much of the coal power capacity is concentrated in four countries: South Africa (42 GW), South Korea (37 GW), Indonesia (34 GW) and Vietnam (20 GW).

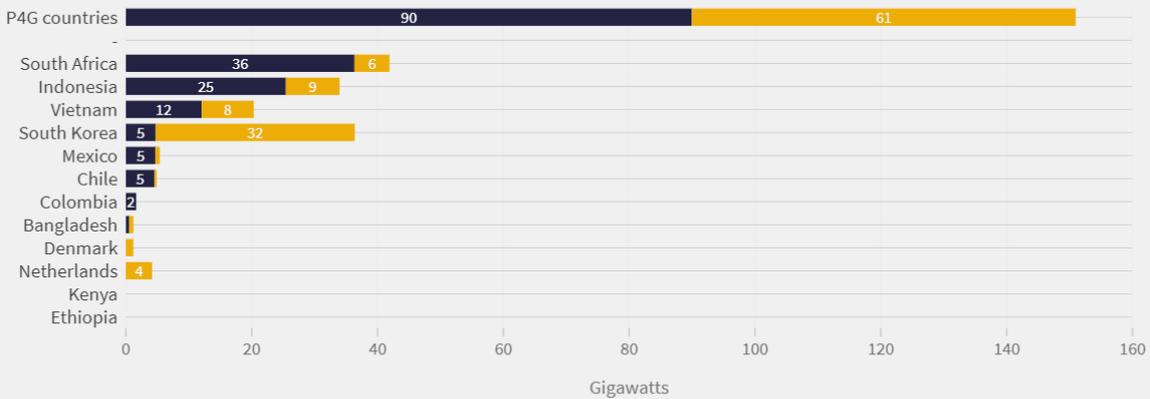
All the P4G countries have a combined coal fleet of about 151 GW, two-thirds of which are sub-critical. About 80% of this sub-critical fleet is concentrated in developing and emerging economies like South Africa (36 GW), Indonesia (25 GW) and Vietnam (12 GW). Given that such a large fraction of coal plants is sub-critical, bespoke governmental climate financing may be needed to help finance investment to rapidly shift from coal in these countries.

## Inefficient coal fleet in P4G countries

Source: Global Energy Monitor, January 2021

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■ Subcritical coal ■ Supercritical coal+



There is also a huge pipeline of coal power plants that are under construction in Indonesia (11 GW), South Korea (7 GW), Vietnam (7 GW), Bangladesh (5 GW) and South Africa (4 GW). South Korea, as the chair of this year's P4G Summit, has the chance to assume leadership in the climate debate and announce concrete plans to back up their net-zero by 2050 pledge. The IEA makes it clear what immediate actions need to happen: phase-out coal by 2030, and 100% clean power by 2035. This would send the right signals to the market and would corral the rest of the P4G countries, especially those heavily reliant on fossil fuels, to decarbonize their power sectors.

Transitioning to 100% clean power would no doubt be challenging, especially for the developing and emerging economies of the P4G. However, as the IEA also recognizes, this would be a necessary first step to achieving economy-wide carbon neutrality. The stage is now set for the 2021 P4G Seoul Summit to commit to affirmative actions and policies. The time to deliver on the vision of carbon neutrality starts now.

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