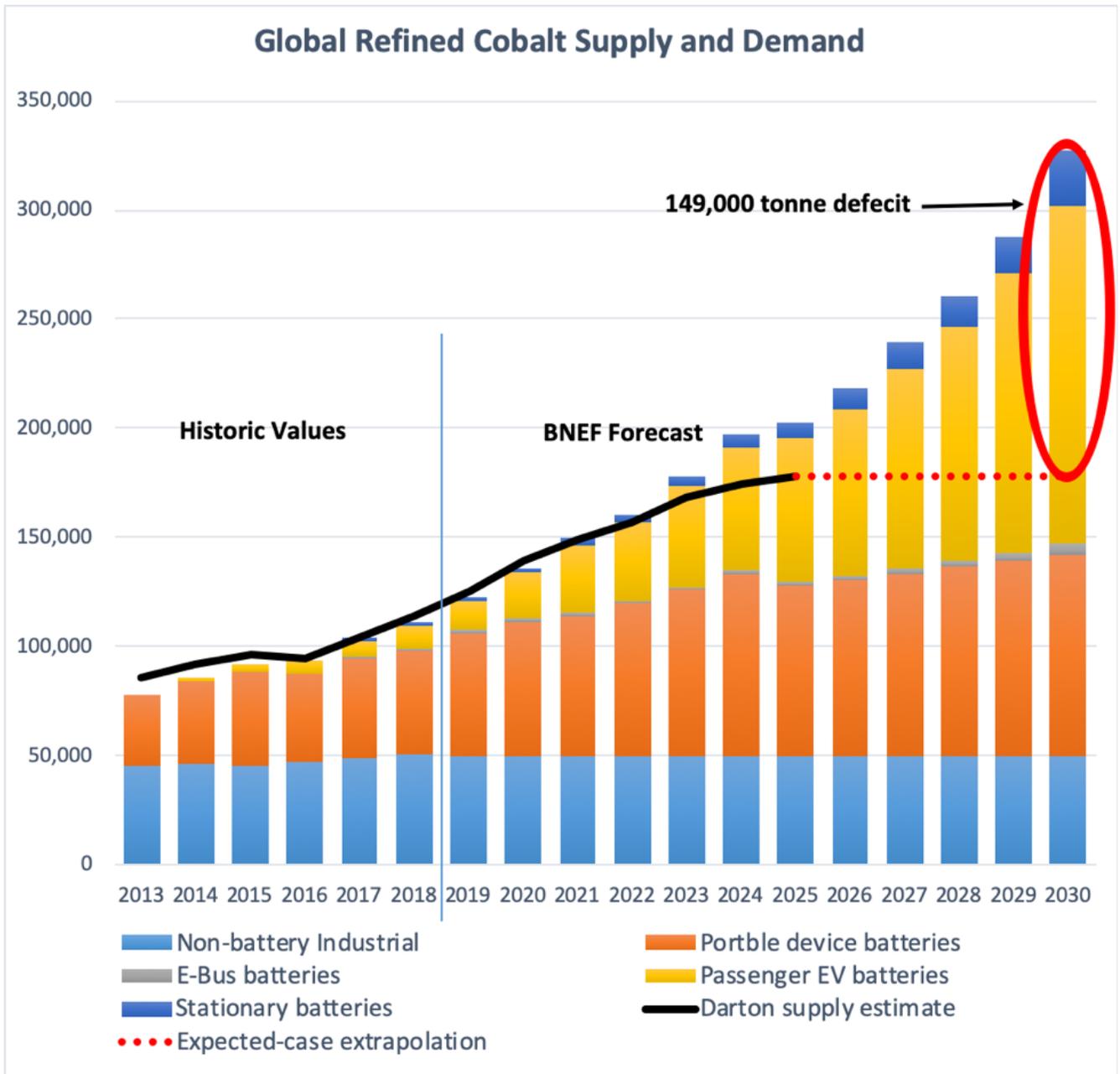


Cobalt prices have recovered by ~40% but will the rise continue?

Cobalt metal spot prices have shown a remarkable recovery in the past 2 months and are up ~40% from the July low. This is mostly due to the news that Glencore will shut down their giant DRC Mutanda Copper-Cobalt Mine starting in 2020 for 2 years to help balance the market. Other DRC miners have also been reducing cobalt supply. It has even been rumored that Glencore and others are looking to sell down their DRC assets mostly due to the horrific new tax regime the DRC brought in last year, which basically takes a 10% upfront cobalt royalty, and taxes the profits at 50%. Clearly this leaves very little for the miner, who has in many cases invested hundreds of millions of dollars on mine and plant infrastructure. The DRC Government has become too greedy and investment into the DRC is withdrawing as a result.

Cobalt prices have recovered by ~40% since the July 2019 lows



Most analysts have similar forecasts to the above. The consensus is that from now until about 2022 we will see cobalt supply meet demand; however from 2023 most see cobalt deficits increasing each year. These forecasts assume electric car sales will continue to grow at a reasonable pace, which for now seems likely. Bloomberg's forecast is based on electric car share rising from 2.2% in 2018 to 3% in 2020, 11% by 2025, 28% by 2030, 43% by 2035, and [57%](#) by 2040.

Interestingly recent news has suggested China is likely to announce their new electric car sales targets by year end. The proposed targets from China shown below are more aggressive

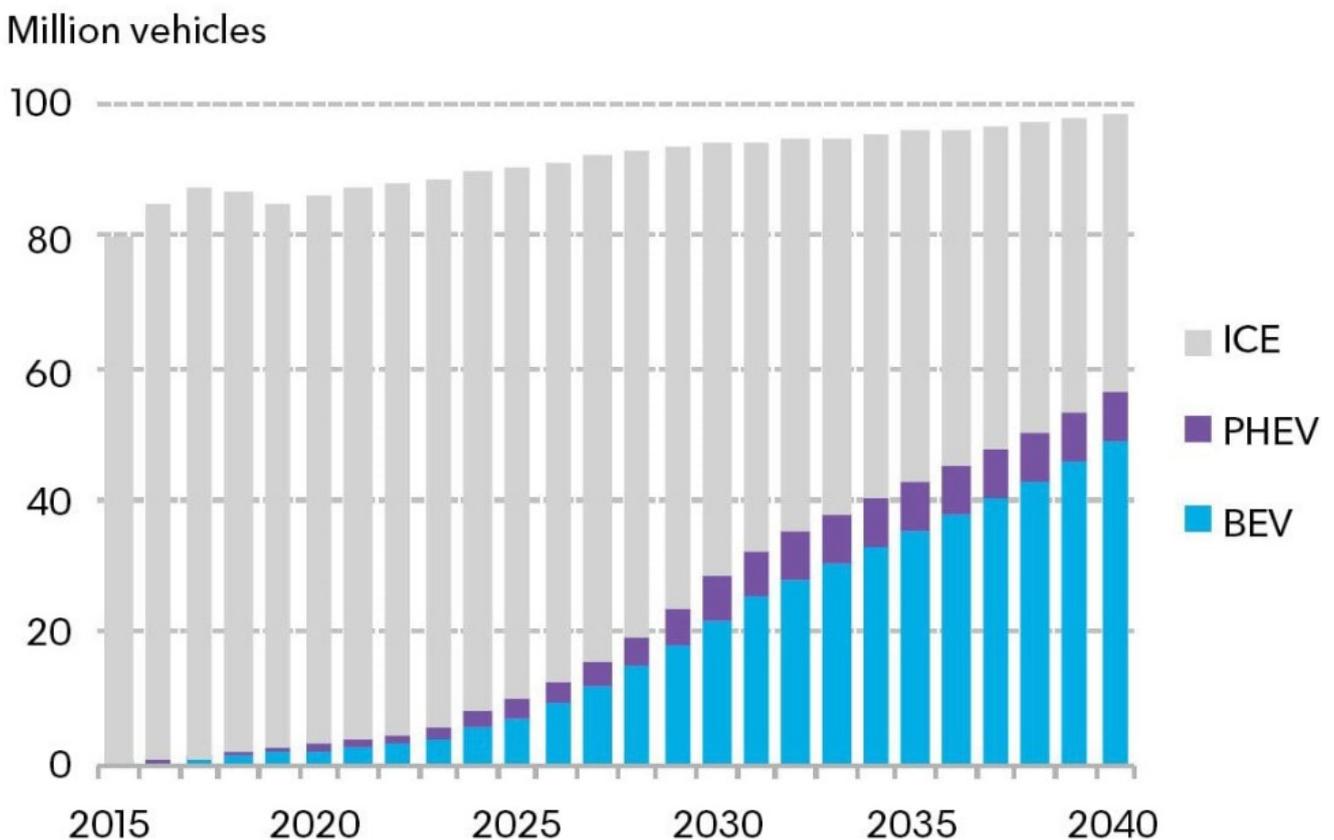
than Bloomberg's 'global' forecasts.

China's proposed targets are said to be (not yet official and under discussion):

- 2025: 20% of sales (already established).
- 2030: 40% of sales.
- 2035: 60% of sales.

Bloomberg's electric car sales forecast to 2040

Global long-term passenger vehicle sales by drivetrain



[Source](#): Bloomberg 2019 Global passenger EV sales outlook

The cobalt cliff may hit from 2022/23

The so called '[cobalt cliff](#)' (massive cobalt deficits) still threatens to hit the market from 2022/23. This is made even more likely due to the fact truly affordable electric cars should be arriving globally by 2022, when electric cars become the same price as conventional cars. We are seeing signs of

this already in China with electric cars selling under US\$20,000. In fact the new 2020 Renault City K-ZE electric crossover (26.8 kWh battery pack, 250km range) has been reported that it will sell for about US\$ 9,389 (other reports say US\$10,000) after subsidies in China. In this case my thought is the battery will add an extra US\$ 5000-6,000 (as Renault often quote without the battery included), but still the total package should be about US\$15-16,000 (certainly under US\$20,000). The era of truly affordable electric cars will have arrived, at least in China in 2020, and globally it should be by ~2022. This will accelerate demand for cobalt especially given Chinese subsidies now require a minimum [250kms](#) of range to be eligible.

The 2020 Renault City K-ZE – The price will be under US\$20,000 in China



My model suggests that from 2022 electric cars could become cheaper than conventional cars; however this will depend on battery prices falling further. A massive spike in electric car sales from 2022 will put enormous pressures on the EV metals supply chain, and could again see EV metal prices spike

higher, particularly for supply constrained cobalt.

For cobalt investors I would say just bide your time, the next boom is not here now, but it is not far away.