

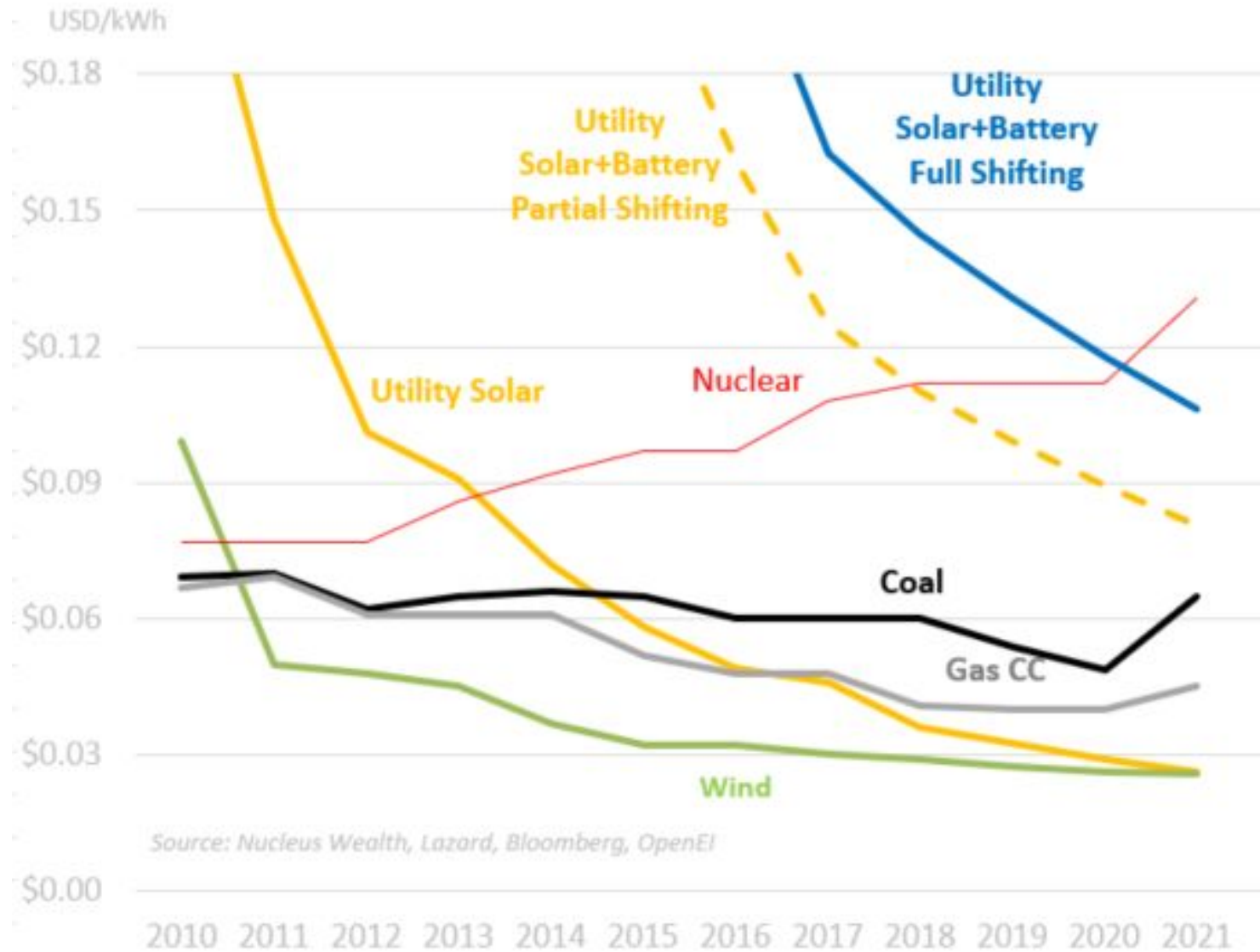


SCRAMBLING FOR SOLAR - CAN SUPPLY CHAINS SAVE THE WORLD?

Agenda

- Effect of Ukraine war on solar demand
- Solar pricing
- Supply chain interruptions
- Short term pain, long term gain
- Investment outlook

Pre war calculations



Putin's carbon tax

Levelized Costs (USD/kWh)	Levelised Cost Ex Fuel	Fuel	Total
Utility Solar	\$ 0.03		\$ 0.03
Onshore Wind	\$ 0.03		\$ 0.03
Natural Gas @\$3/mmBtu	\$ 0.02	\$ 0.02	\$ 0.04
Natural Gas @\$5/mmBtu	\$ 0.02	\$ 0.03	\$ 0.05
Coal @ \$50/Ton	\$ 0.04	\$ 0.02	\$ 0.06
Utility Solar + partial battery	\$ 0.06		\$ 0.07
Coal @ \$100/Ton	\$ 0.04	\$ 0.03	\$ 0.07
Natural Gas @\$10/mmBtu	\$ 0.02	\$ 0.07	\$ 0.08
Utility Solar + full battery	\$ 0.07		\$ 0.09
Offshore Wind	\$ 0.10		\$ 0.10
Nuclear	\$ 0.10	\$ 0.01	\$ 0.10
Coal @ \$200/Ton	\$ 0.04	\$ 0.07	\$ 0.11
Coal @ \$300/Ton	\$ 0.04	\$ 0.10	\$ 0.14
Natural Gas @\$20/mmBtu	\$ 0.03	\$ 0.13	\$ 0.16
Natural Gas @\$30/mmBtu	\$ 0.04	\$ 0.20	\$ 0.24

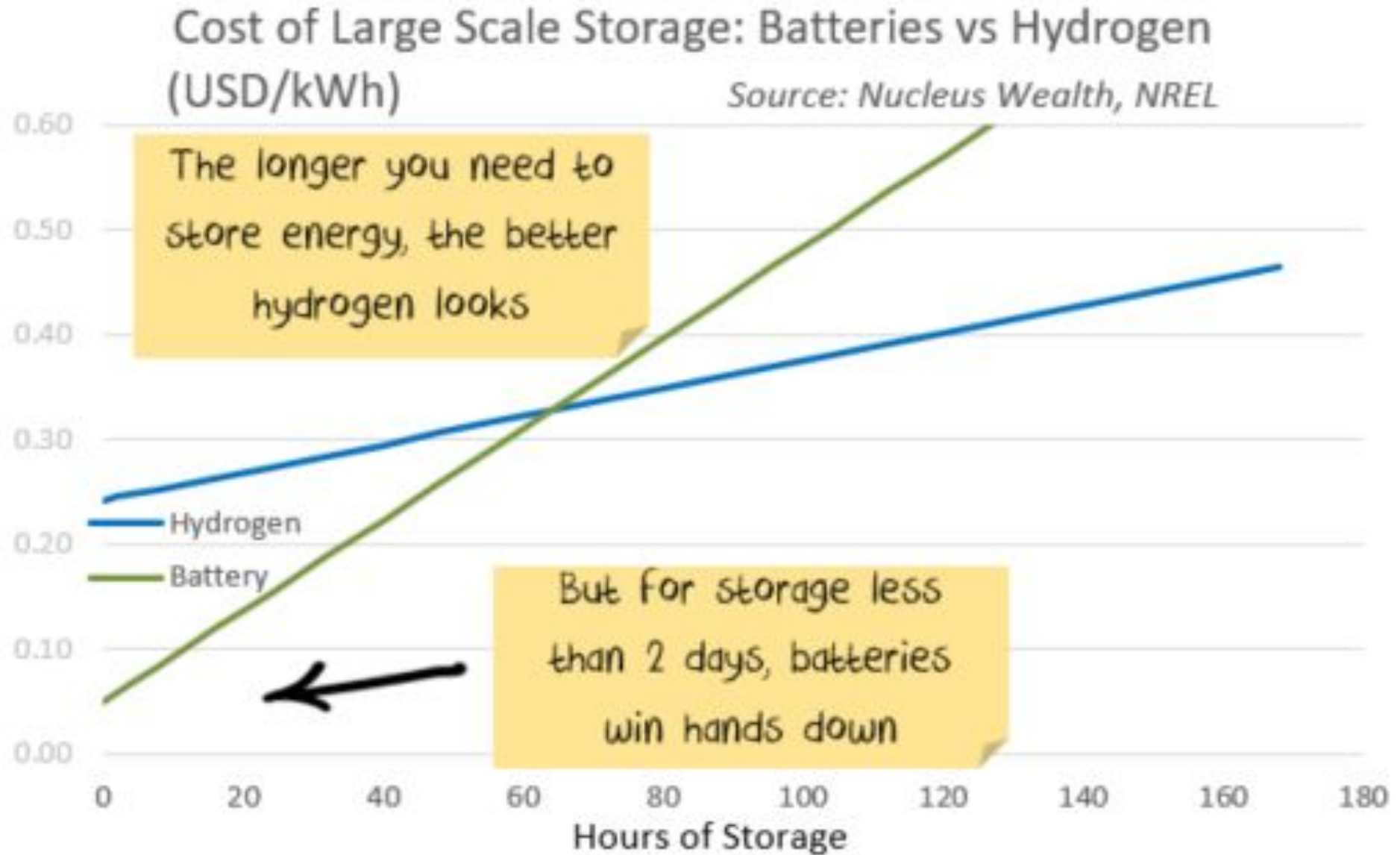
Source: Nucleus Wealth, Lazard, Bloomberg, Open EI

Utility solar and wind
the cheapest option

Adding a partial battery
now cheaper than coal

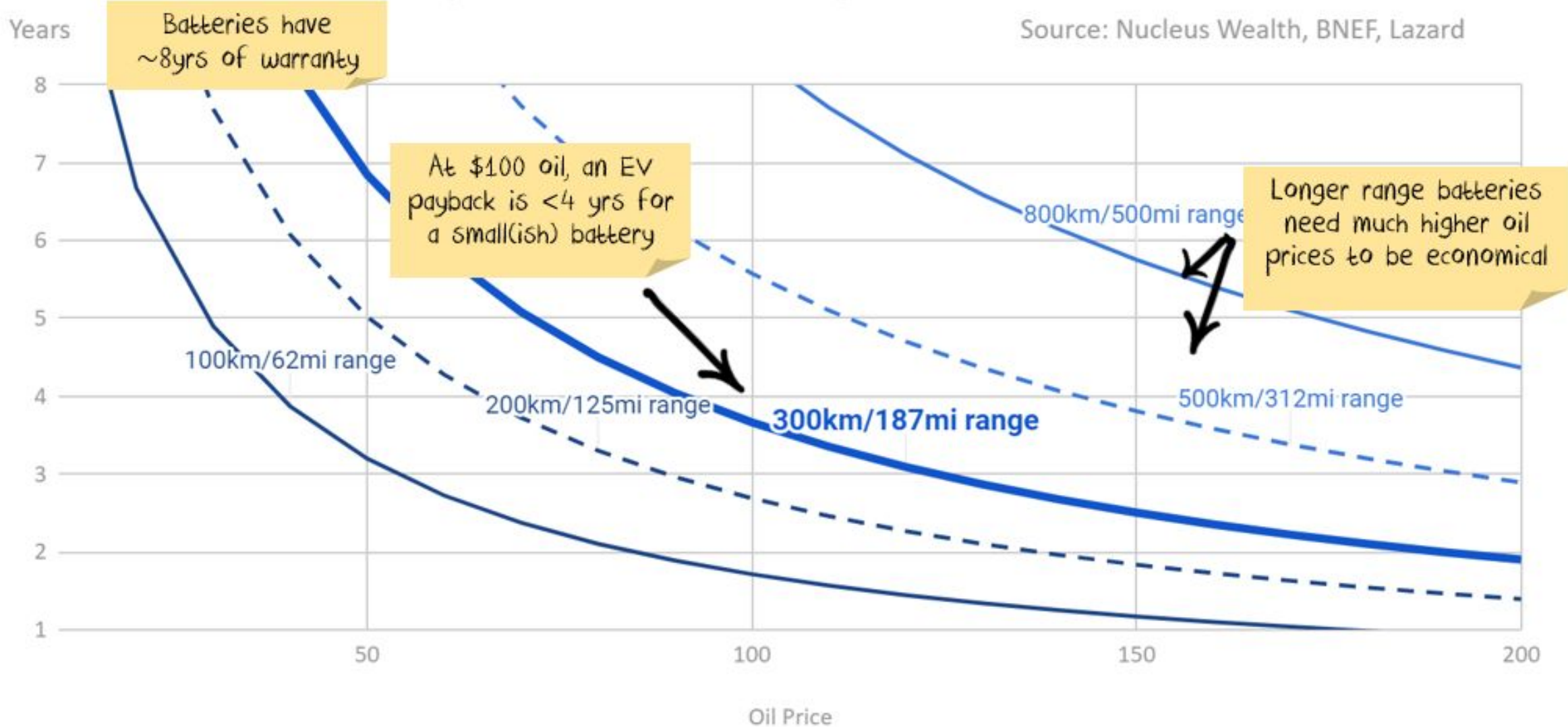
At "Russian" prices, the
economic pressure to
switch is immense. The
fuel cost alone is higher
than solar+battery

Hydrogen



Driving

Electric Vehicle Battery Payback Period: US Average Consumer

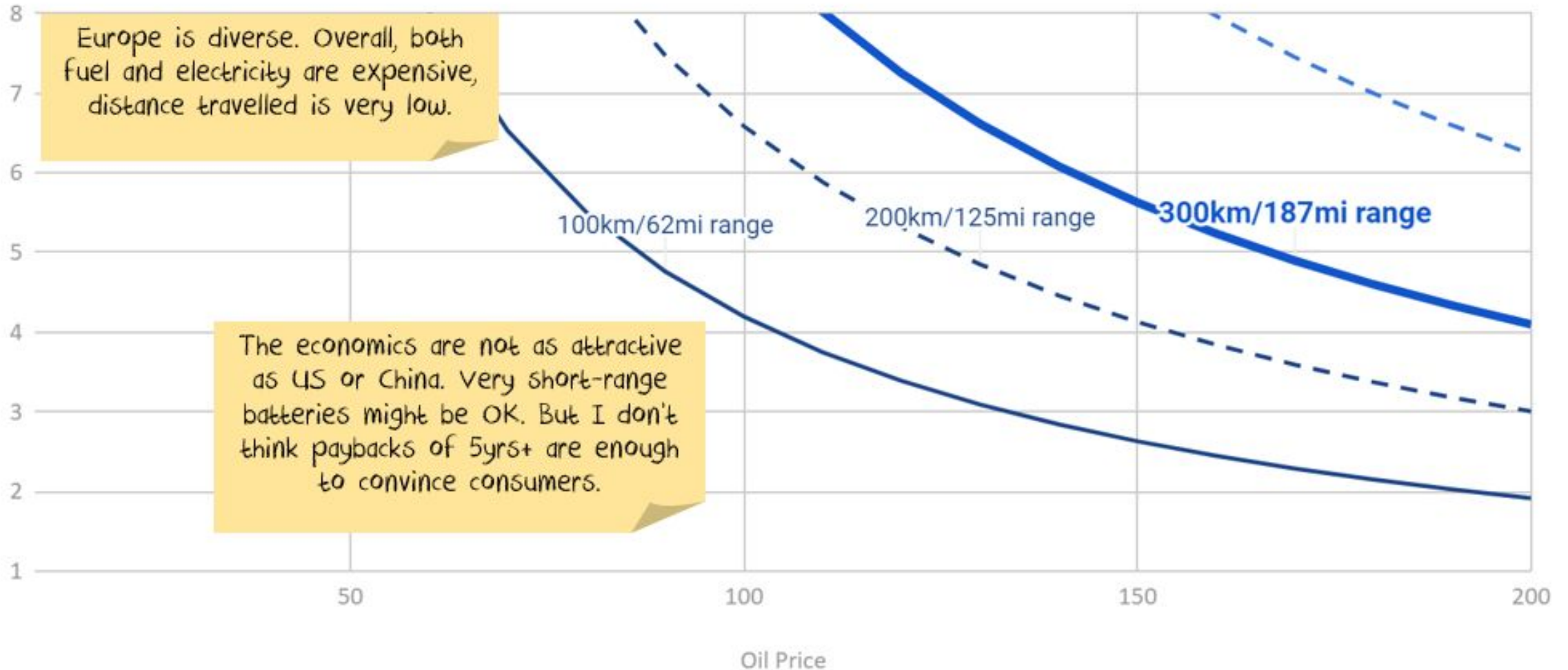


Driving

Electric Vehicle Battery Payback Period: Europe Average Consumer

Years

Source: Nucleus Wealth, BNEF, Lazard



Viewer question of the week:

Will Europe commit to renewables or will their resolve fade?

Drop your answers in the comments

Investment Implications

- Energy prices the great unknown
- Long term picture worse, short term better
- Oil vs gas is very different
- Inflation implications

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