

# The Global Energy Transition

Challenges and Opportunities

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# The Problem



# The Problem

## It's Too Big, Too Complex and Too Far In The Future

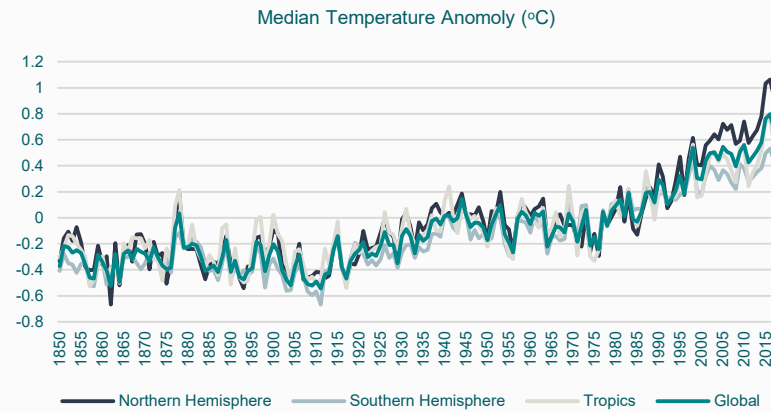
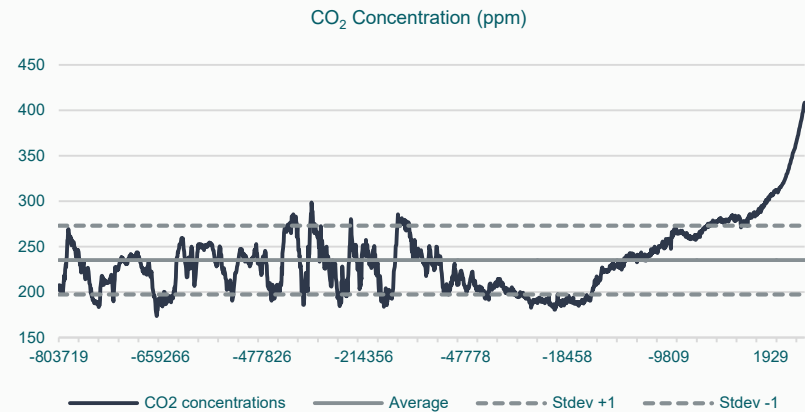
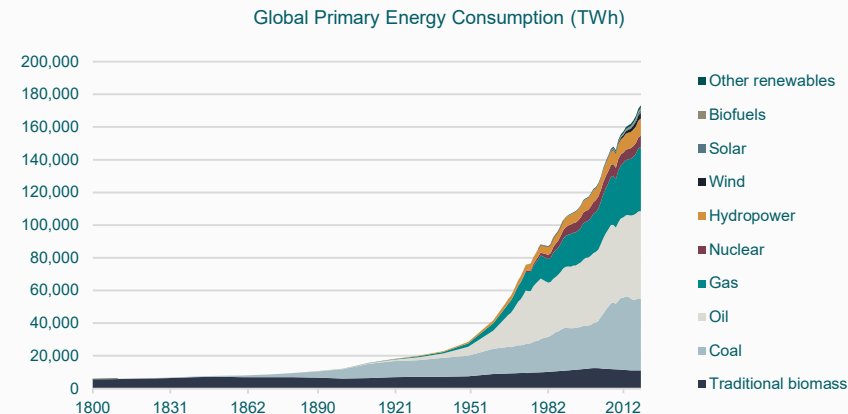
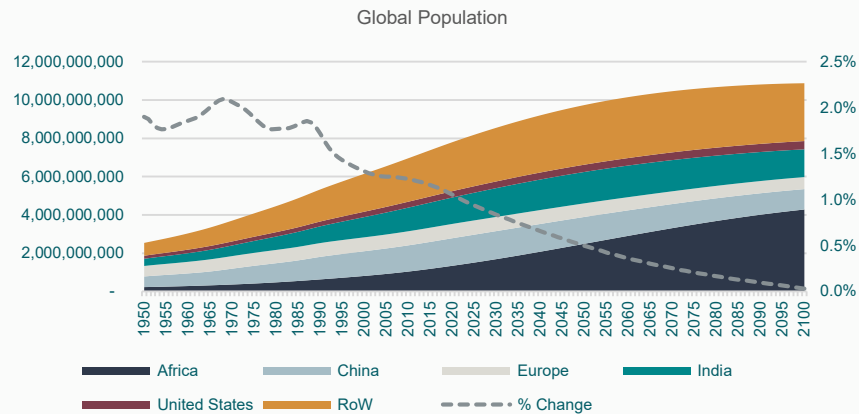
Warren Buffett on lessons learned from the COVID-19 pandemic:

“I learned that people don’t know as much as they think they know. But the biggest thing you learn is that the pandemic was bound to occur, and this isn’t the worst one that’s imaginable at all,”

“Society has a terrible time preparing for things that are remote but are possible and will occur sooner or later.”

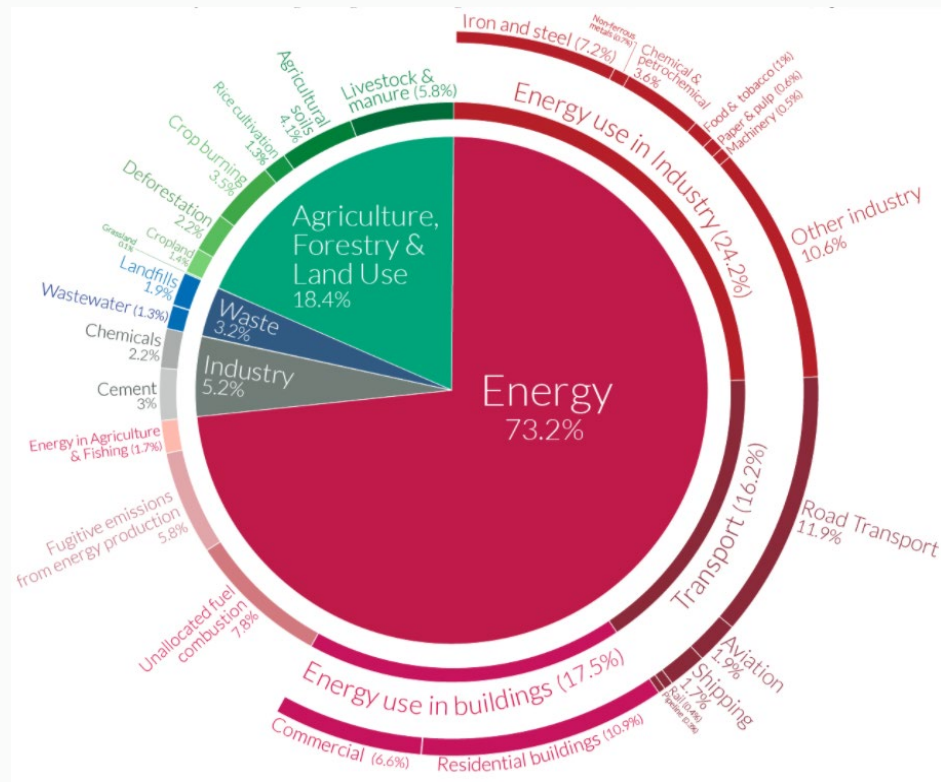
# The Problem

## People, Energy, Emissions and Rising Temperatures

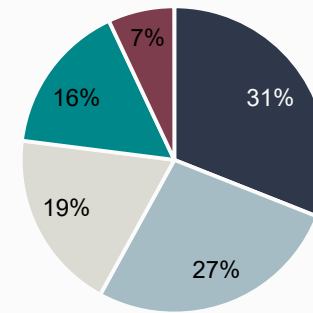


# The Problem Dissected

## Industry, Buildings, Agriculture and Transportation



Global GHG Emissions by Activity



- Making things
- Plugging thing in
- Growing things
- Getting around
- Keeping cool & warm

Source: Our World in Data, Breakthrough Energy, Investec Wealth & Investment

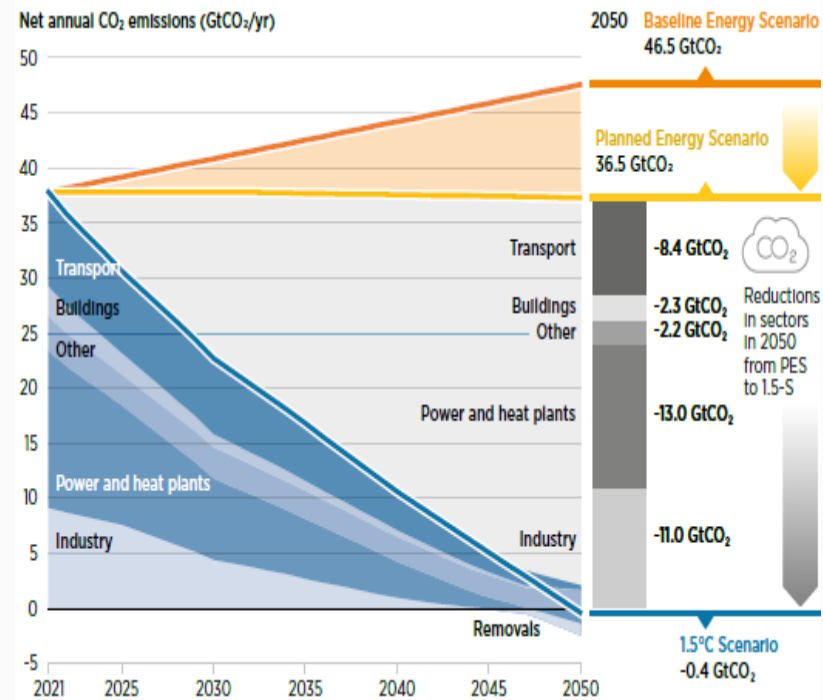
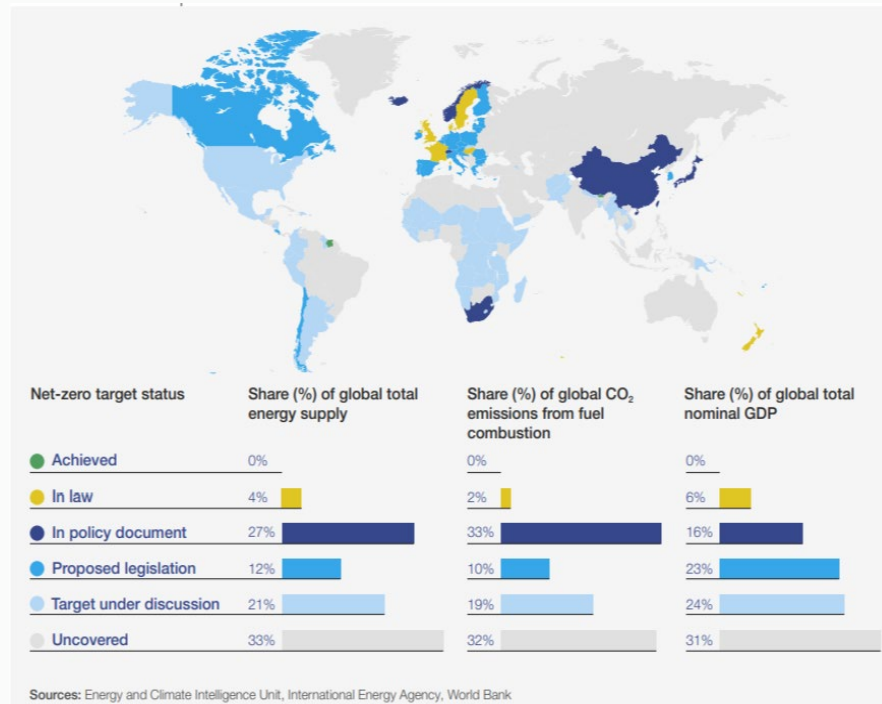
# Where We Stand And Where We Need To Get To





# Where We Stand and Where We Need To Get To

## Net Zero Commitments and Pathway



Source: WEF Fostering Effective Energy Transition 2021 IRENA

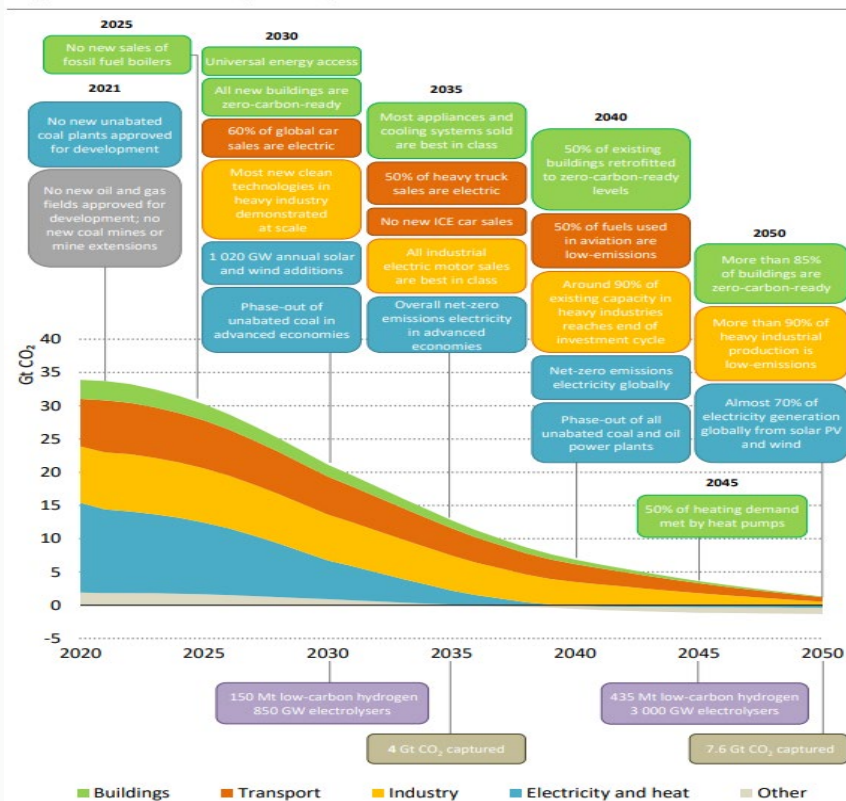
# How Do We Get To Net Zero



# How Do We Get to Net Zero

- 1) Decarbonisation of power generation
- 2) Electrification of energy use
- 3) Increase efficiency of consumption

Key milestones in the pathway to net zero



## By 2030

- All new buildings are zero carbon ready
- 60% of global car sales are EVs
- 1,050GW annual solar and wind additions
- Phase out of unabated coal in developed countries
- 150Mt green hydrogen + 850GW electrolyzers

## By 2040

- 50% of all buildings are retrofitted to zero-carbon ready
- 70% of heavy truck sales are electric
- 50% of aviation uses low emissions fuel
- Zero emissions electricity globally
- Phase out of all coal and oil power plants
- 5GT CO<sub>2</sub> captured
- 400Mt green hydrogen + 3,000GW electrolyzers

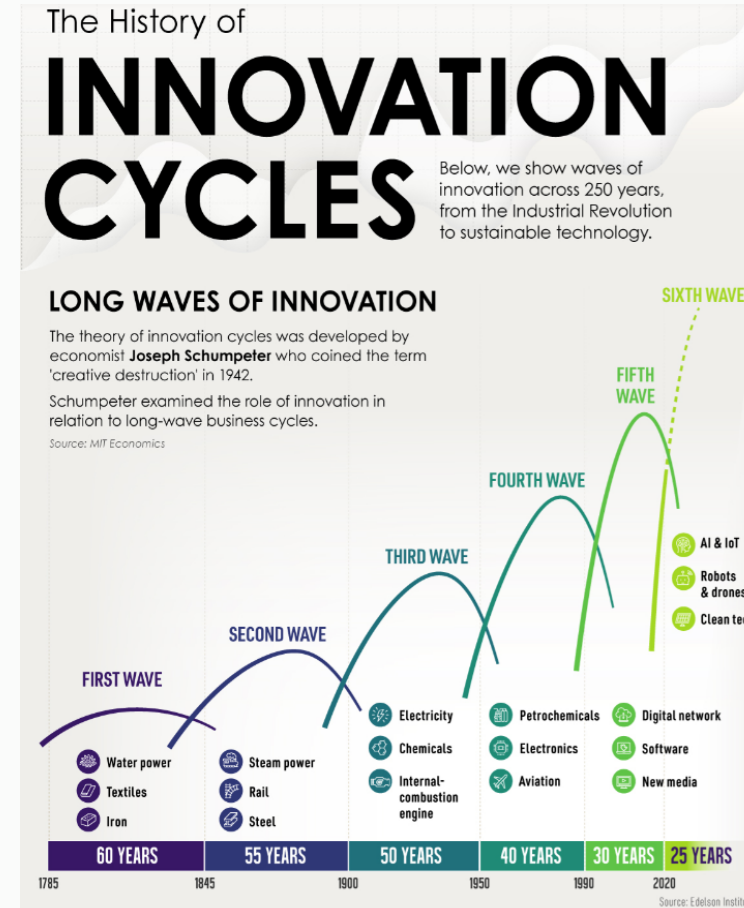
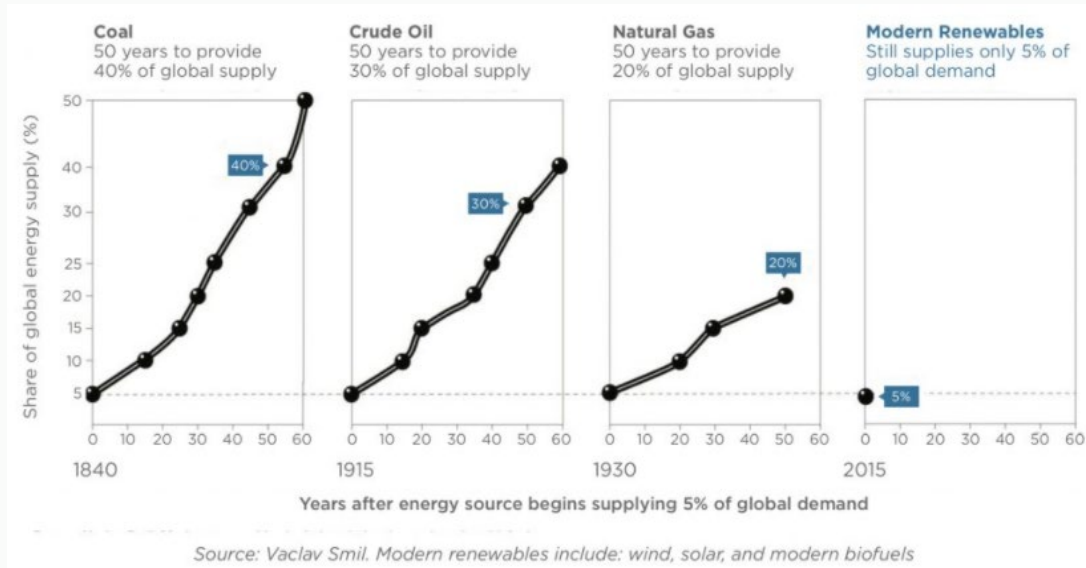
## By 2050

- 85% of buildings are zero carbon ready
- 90% of heavy industry is low emission
- 70% of global electricity is renewable
- 8GT CO<sub>2</sub> captured

# The Challenges



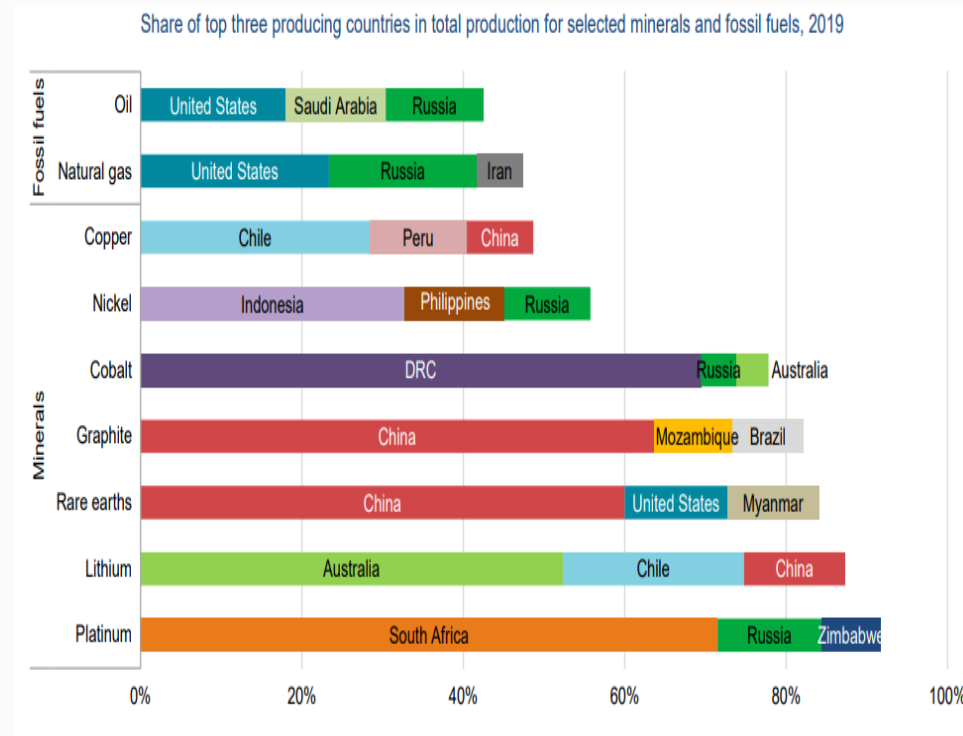
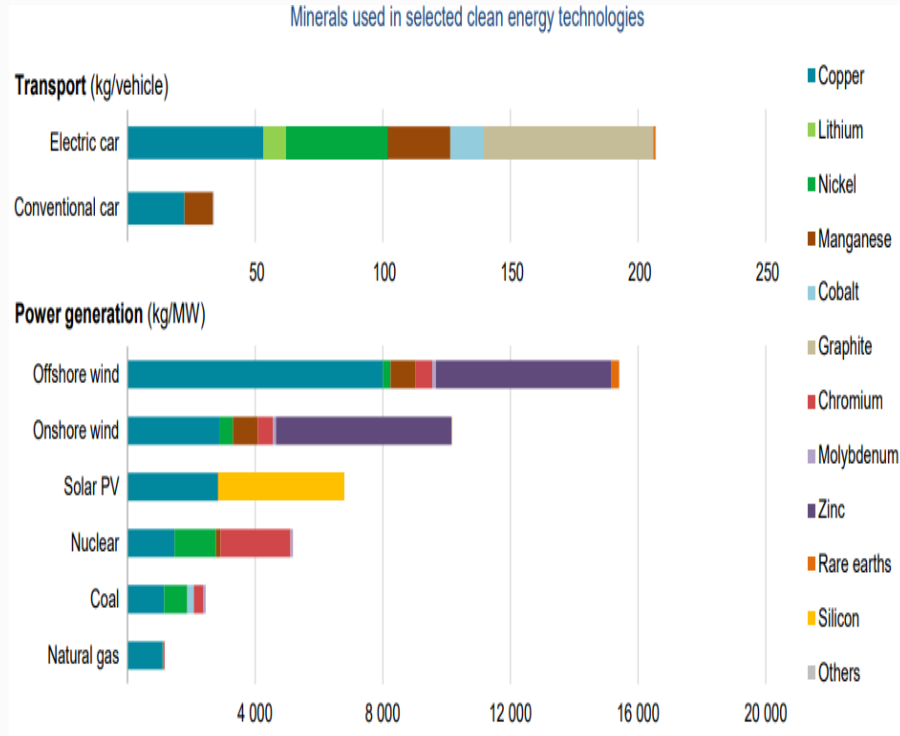
# The Challenges Time



Source: Commodity Research Group October 2019, Visual Capitalist

# The Challenges

## Resources



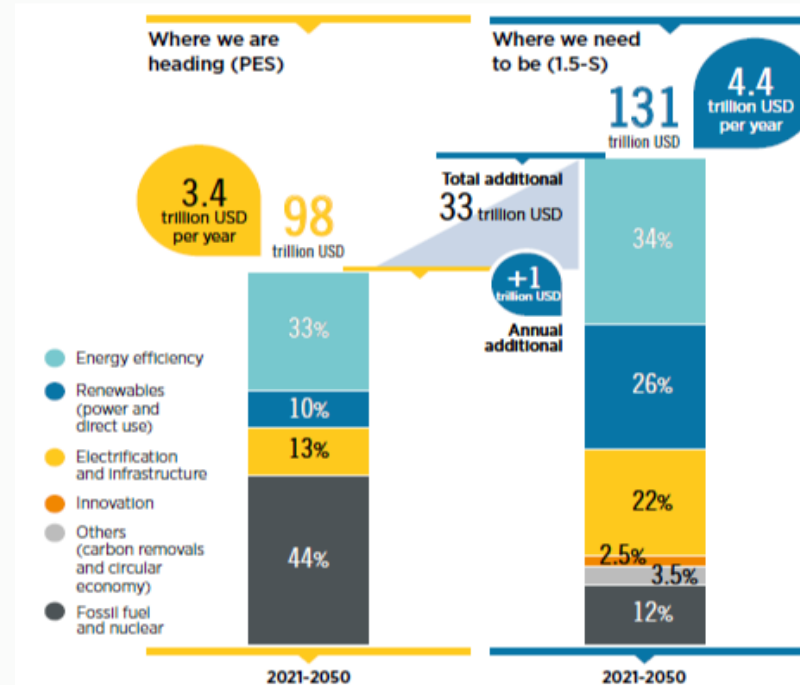
Source: IEA, DOE, Investec Wealth & Investment

# The Challenges

## Money

### Emissions are global but not all countries are equal:

- Current global GDP is c\$130tn.
- Differing levels of borrowings relative to GDP.
- Currency risks.
- Differing risk free rates and costs of capital.
- Differing starting points with respects to absolute and per-capita emissions.
- Many uncertainties around carbon taxes and the application thereof.



Source: IEA, Investec Wealth & Investment

# The Opportunities

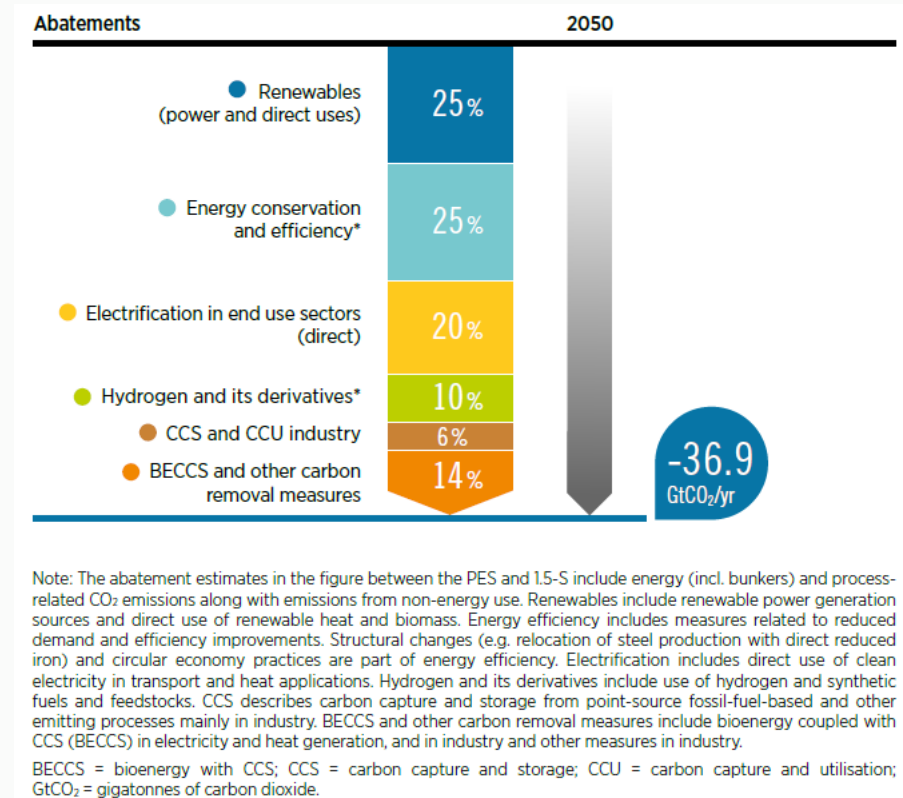




# The Opportunities Across the spectrum

## We look for:

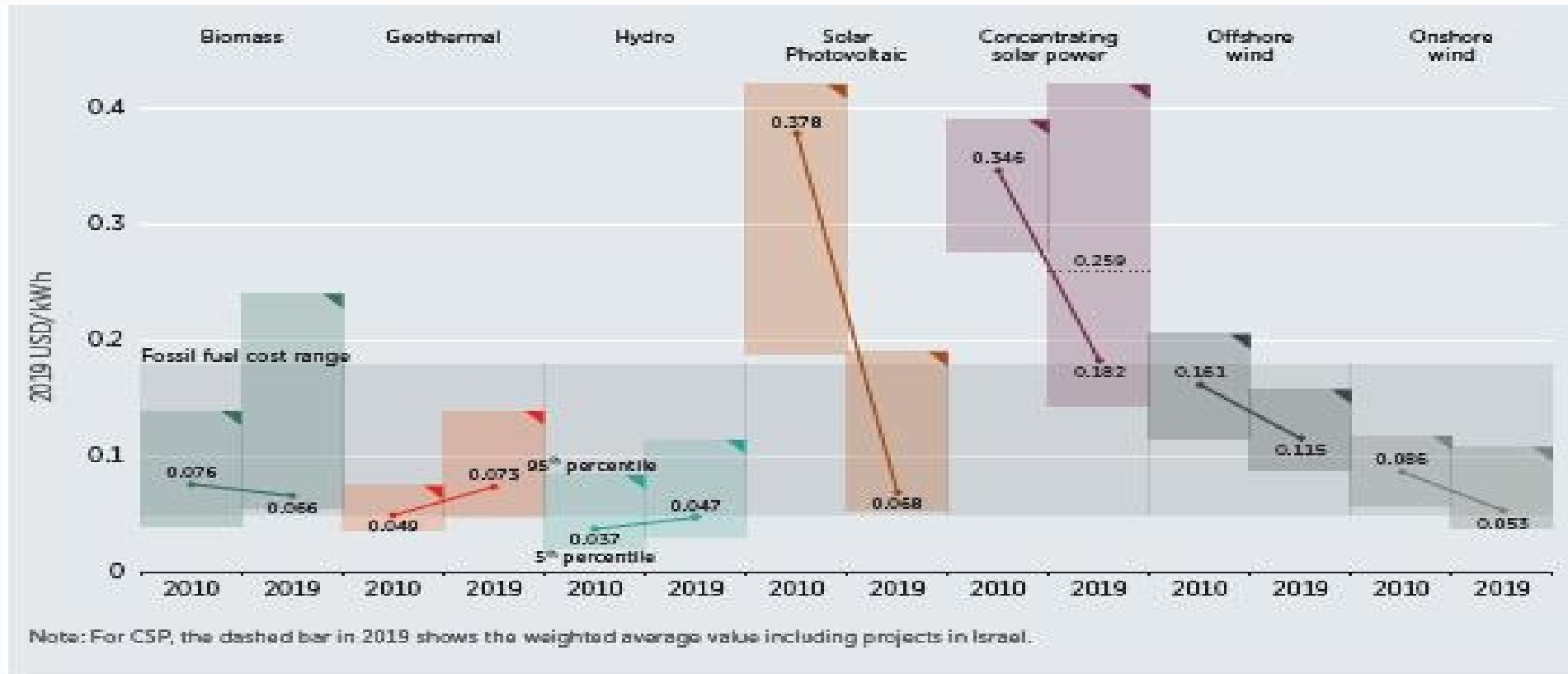
- Companies directly exposed to the Energy Transition dynamics. (Runway).
- Companies that sit in parts of the value chain that offer a favourable competitive landscape. (Moat).
- Companies with established technologies and routes to market. (Moat).
- Companies absent of material ESG risks with improving sustainability trends. (Means).
- Companies that have strong balance sheet and clear capital allocation qualities. (Means).
- Companies that generate (or have the potential to generate) above cost-of-capital returns. (Justification for growth reinvestment).



Source: IRENA, Investec Wealth & Investment

# The Opportunities

## Levelised Cost of Energy – Apples and Bananas



CSP= Concentrating Solar Power

# The Opportunities

## The Green Race: Snowballing Political Will

### European Green Deal

**55 %**

GHG reduction target by 2030 compared to 1990<sup>1</sup>

**60 GW**

offshore wind capacity installed in 2030, 300 GW in 2050<sup>2</sup>

**40 GW**

electrolyser capacity by 2030 producing up to 10 million tonnes of renewable hydrogen<sup>1</sup>

**EUR 750 bn**

Recovery Package – 37 % earmarked for climate spending



### US policy change & American Jobs Plan (not yet passed into law)

**50-52 %**

reduction in carbon emissions from 2005 level by 2030, resulting from re-entry into Paris agreement

**30 GW**

offshore wind capacity target by 2030<sup>1</sup>

**USD 2 tn**

infrastructure plan (American Jobs Act)

**10-year**

extension of clean energy credits (PTC & ITC) including offshore, onshore wind and solar PV<sup>2</sup>

	China	2020	14th 5YR Plan (2025)	Net Zero (2060)
Energy mix: Fossil-fuels		85%	80%	21%
Energy mix: non-FF		15%	20%	79%
FF growth (CAGR)			1.6%	-4.6%
Non-FF growth (CAGR)			8.7%	5.2%
Emissions (BnT)		9.4	10.1	1.6
"Emissions to peak by 2030"				

1. Not binding targets 2. Building on policies already in place: 30 % offshore wind investment tax credit through 2025; onshore wind production tax credit (at 60 % of full value) through 2021; 26 % solar PV investment tax credit through 2022 - all passed into law in Dec. '20 - Consolidated Appropriations Act, 2021 from 116<sup>th</sup> Congress)  
Sources: Europa.eu; eur lex.europa.eu; congress.gov; whitehouse.org

Source: Orsted June 2021, Bernstein March 2021, Investec Wealth & Investment

# Concluding thoughts (for now ...)



# Concluding Thoughts

Head of IEA, Dr. Fatih Birol, “We like energy but we don’t like emissions” and “The Energy Transition is real, and there’s no escaping it.”

- The problem is complex and presents existential risks.
- Time is not on our side.
- Changing is hard as our current system is embedded in everything we do/use – “cheap” fossil fuels have enabled prosperity.
- We need multiple solutions to address the problem – no silver bullet.
- We need unprecedented levels of global cooperation and coordination – emissions have no borders.
- Decarbonising the Power sector is foundational.
- Government initiatives and scale are key to continue driving down the cost of renewable energy and increasing innovation.
- Net Zero is becoming less of an IF and more of a MUST!
- There are many good quality companies exposed to the Energy Transition that potentially offer handsome returns for long-term investors.

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# Thank you

