Aspiration and reality; Ineffective climate change policies

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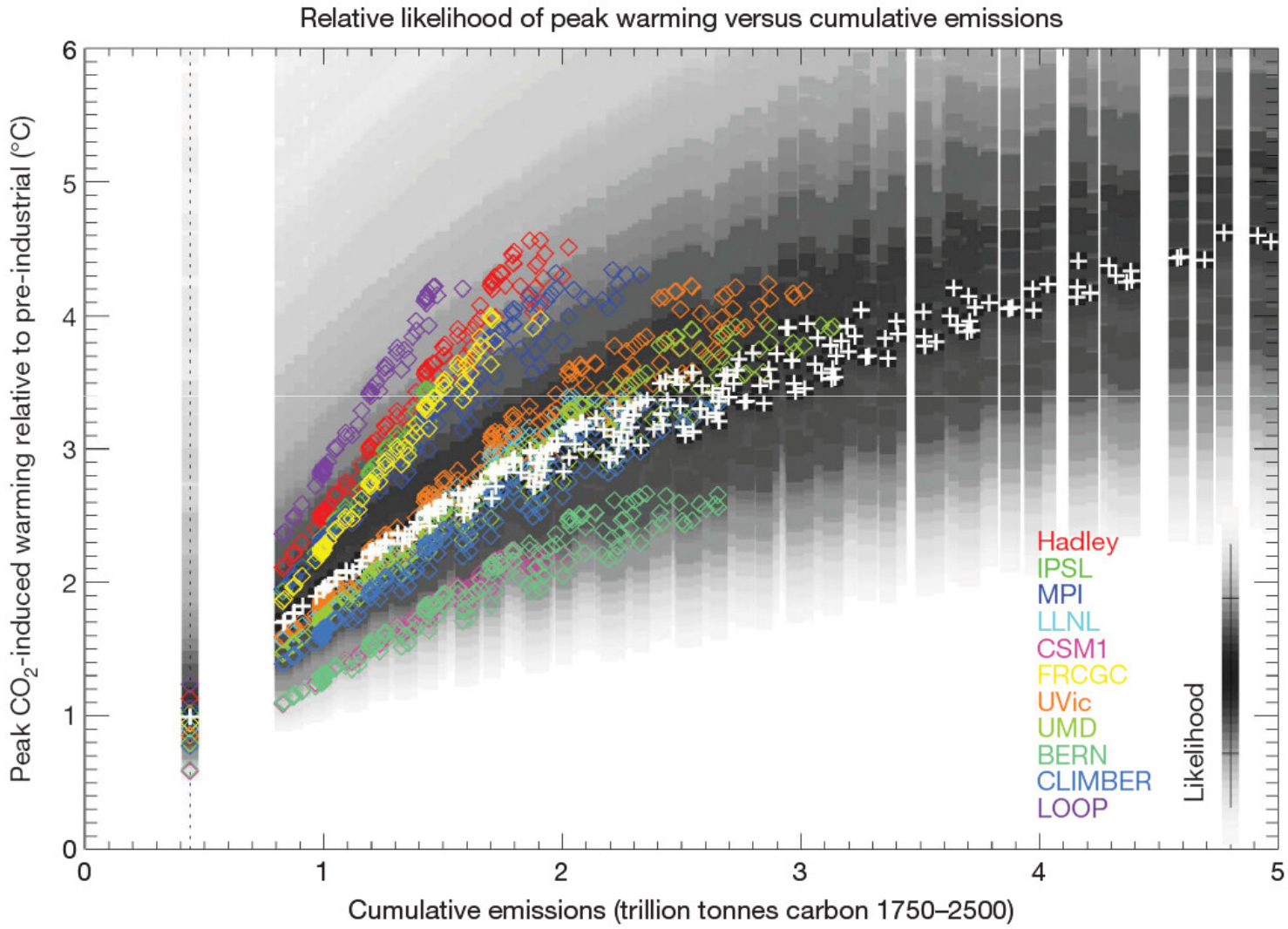
The climate issue is a “stock” problem.

Need to avoid the trillionth tonne[1] of carbon to stay below 2°C . . .

. . . well

[1]Warming caused by cumulative carbon emissions towards the trillionth tonne. Myles R. Allen, Malte Meinshausen et. al. Nature Vol 458, 30 April 2009

So is possible to derive tolerable CO_2 levels based on peak temperature aspirations.

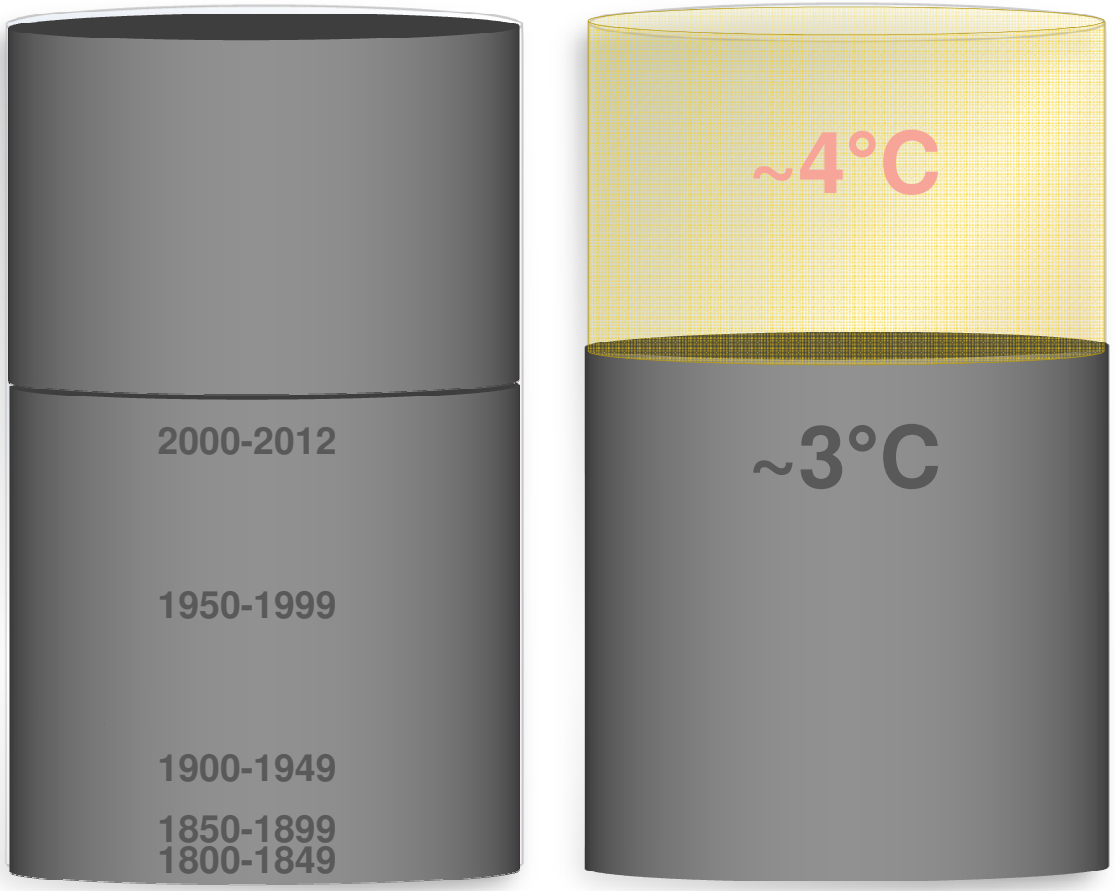


Warming caused by cumulative carbon emissions towards the trillionth tonne. Myles R. Allen, Malte Meinshausen et. al. Nature Vol 458, 30 April 2009

That tolerable level of CO_2 stock is very challenging.

. . and using current proven[1] fossil reserves[2] takes us well over the mark.

Early 2040s



Starting in 1750

1.6 trillion tonnes, with continued land use change and cement production . . . . . and probably still rising later in the century.

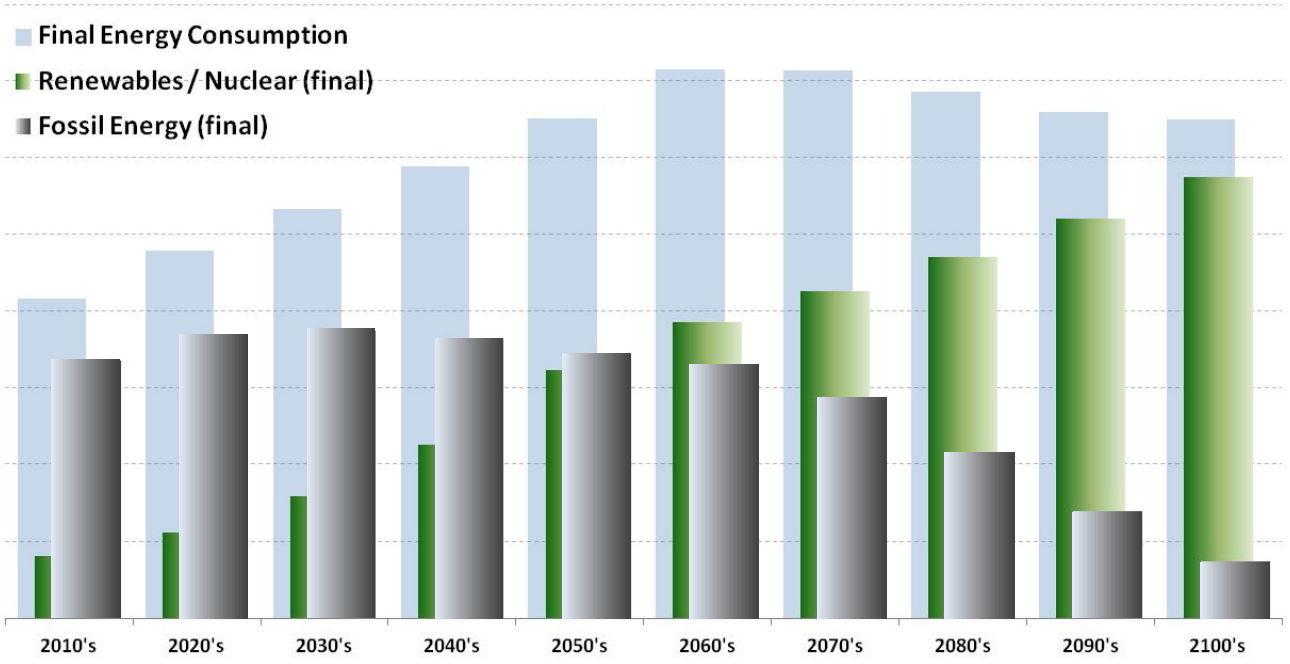
[1]BP Statistical Review of World Energy
[2] Current reserves of oil and gas are ~60 years each, coal ~110 years at current usage rates

If this is all the coal, oil and gas that we can now use . . .

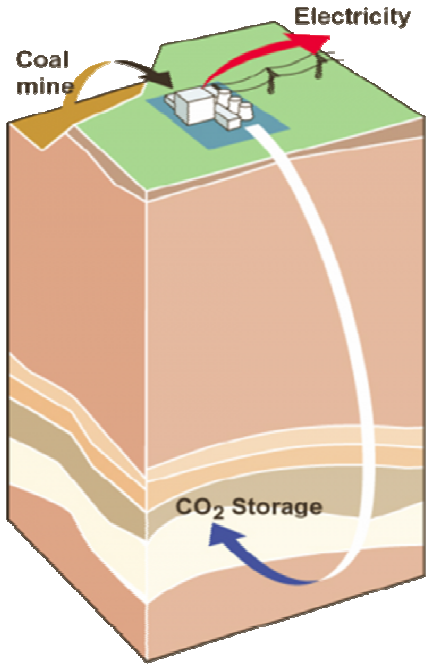
Starting in 1750

About 425 billion tonnes carbon
or
About 1.5 trillion tonnes CO_2
or
Less than 40 years at current rates
or
Just 30 years at BAU rates

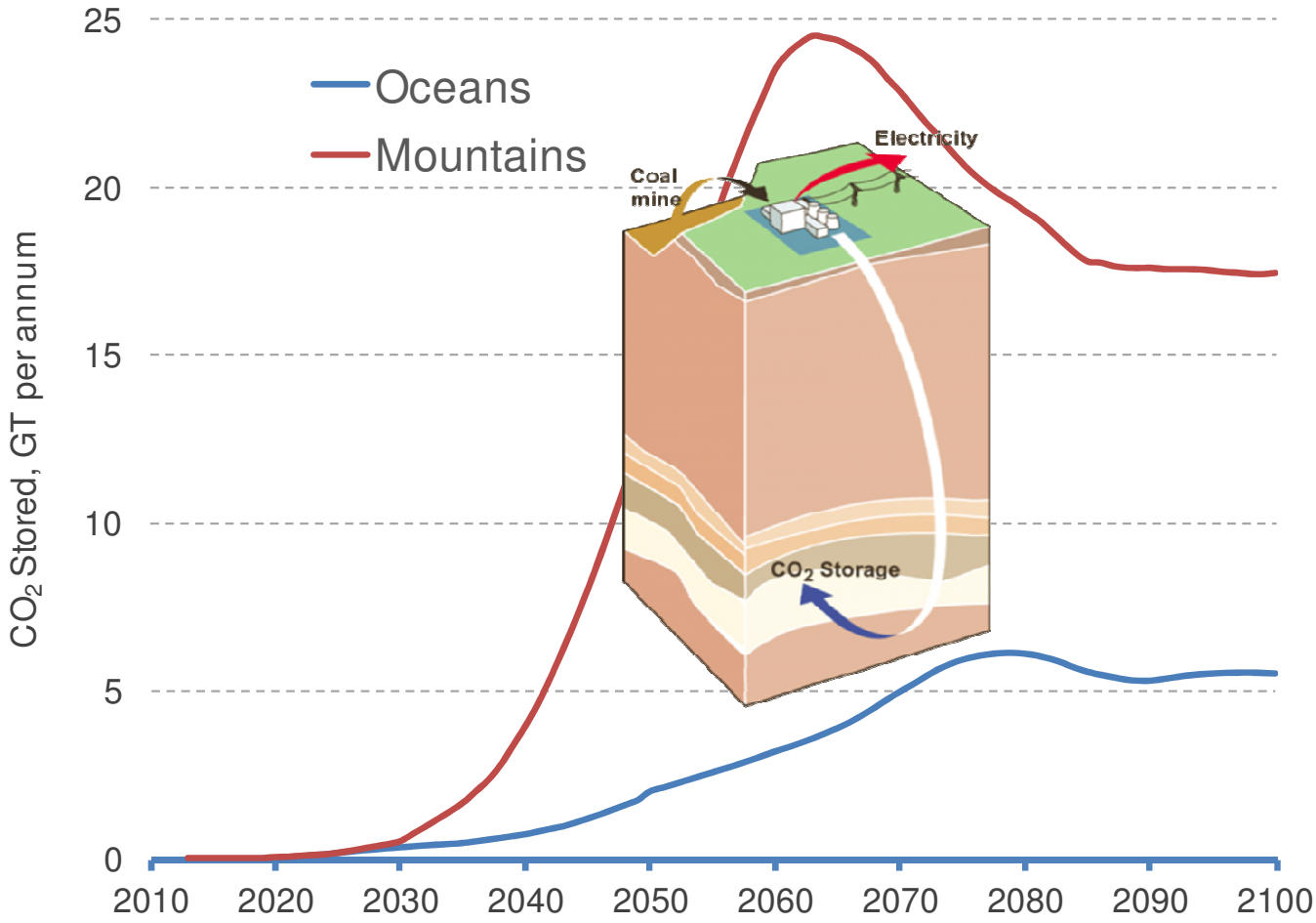
. . . then energy demand will not be met over the century (despite rapid renewable energy growth).



So how can we limit the temperature rise?



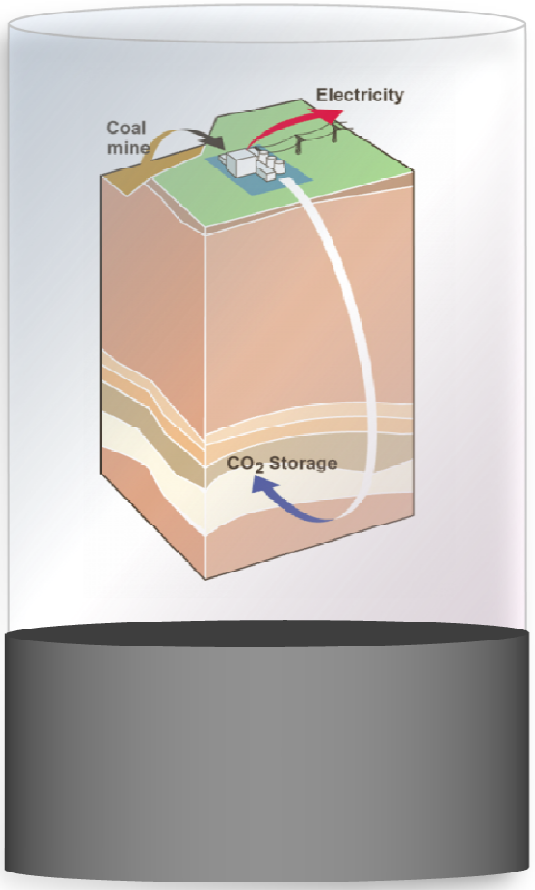
The Shell scenarios show tremendous potential for CCS.



Mountains - a gas "backbone" with early and rapid deployment of CCS limits the stock.

Late 2040s

Starting in 1750



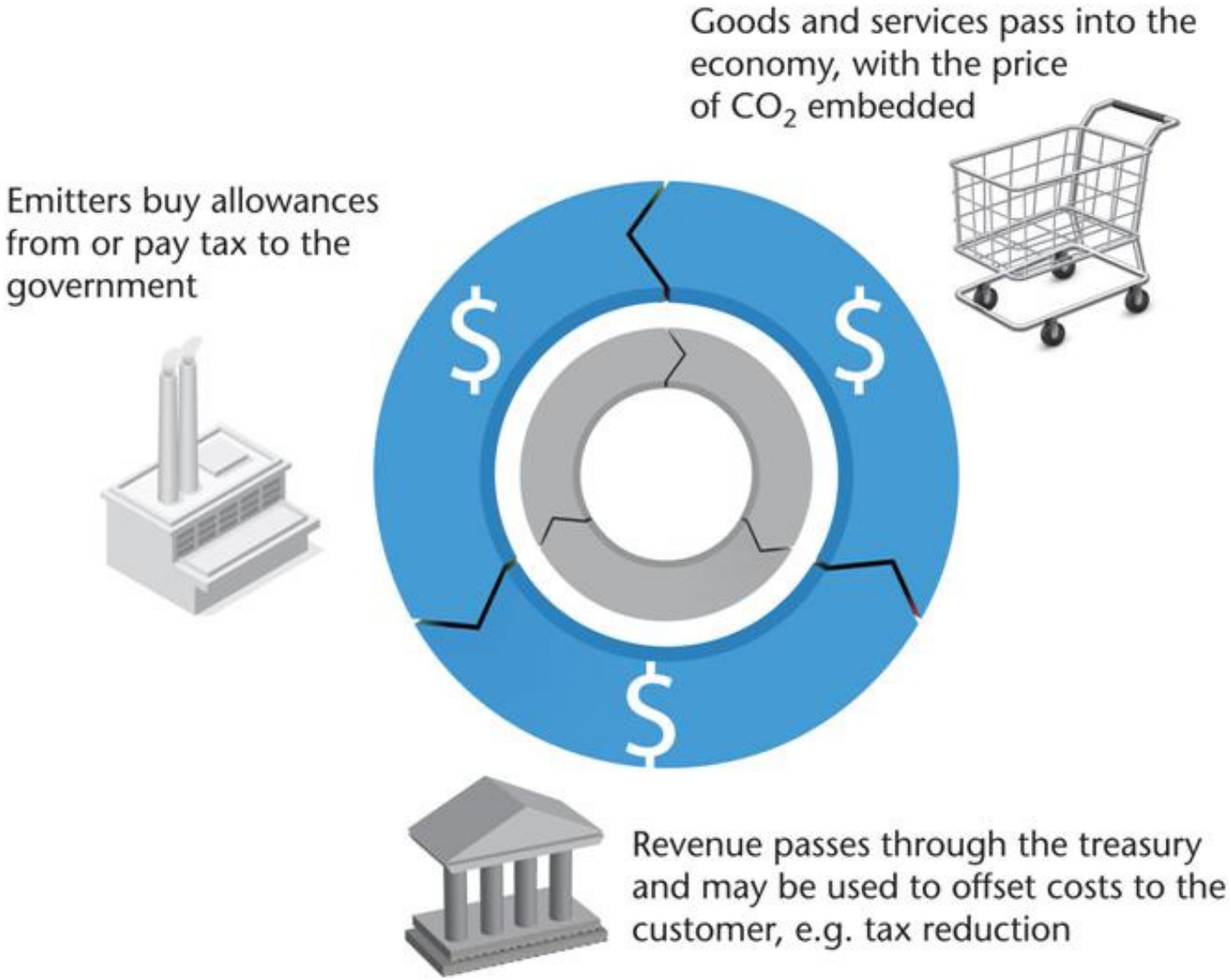
Capped by ~2100

But climate policy just doesn't have this clarity.

We must reduce national CO_2 emissions!

" I need to do something . . . .
This is something !
I'll do it !! "

A clear CO_2 price in the economy has several reinforcing benefits.



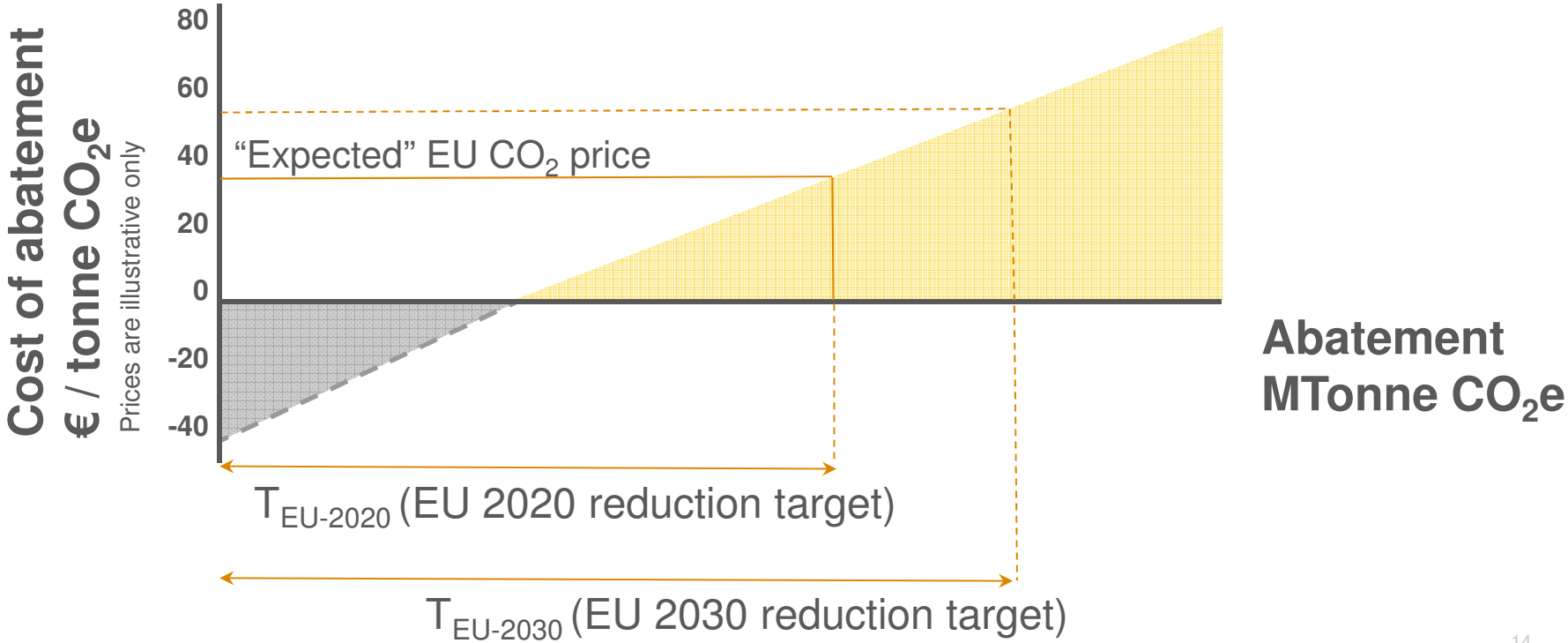
But we don't seem to be able to keep it simple.

Both the Commission and Member States have contributed to the weakening impact of the ETS.

An ETS should provide a clear route forward, based on abatement opportunity economics.

EU-27 Abatement Chart

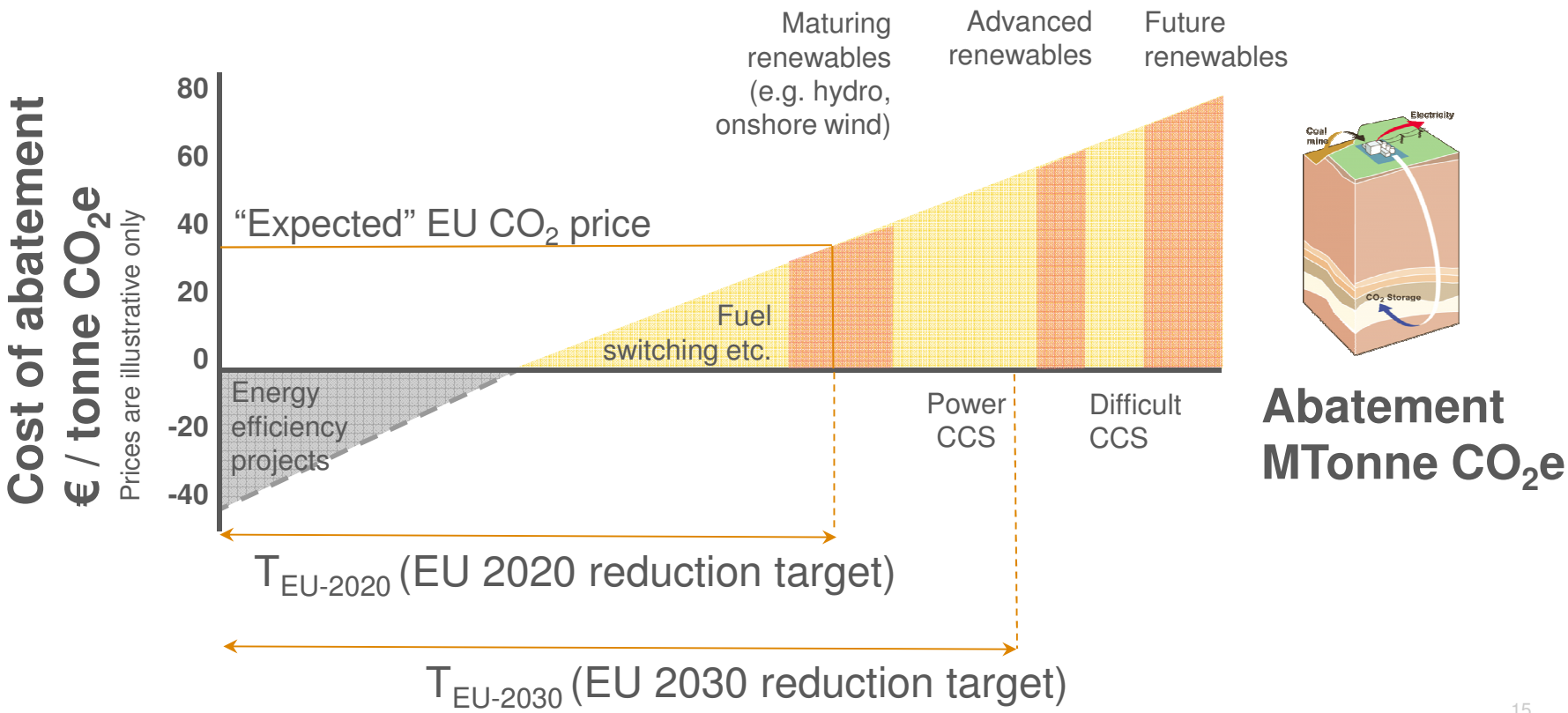
A CO_2 price drives project implementation from left to right across the abatement curve



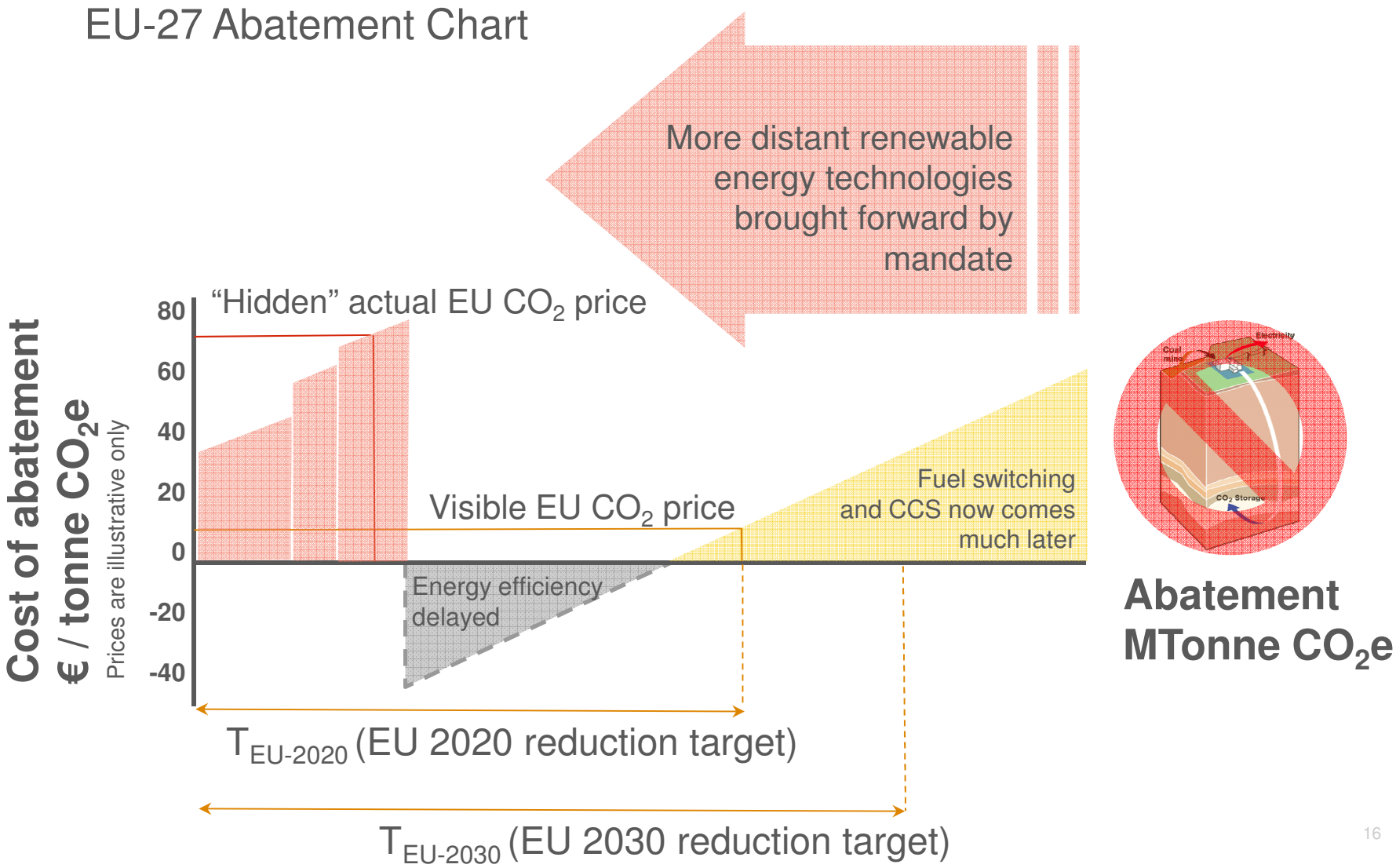
Implementation could see fuel switching first, then mature renewables, followed by some CCS in the 2020s.

EU-27 Abatement Chart

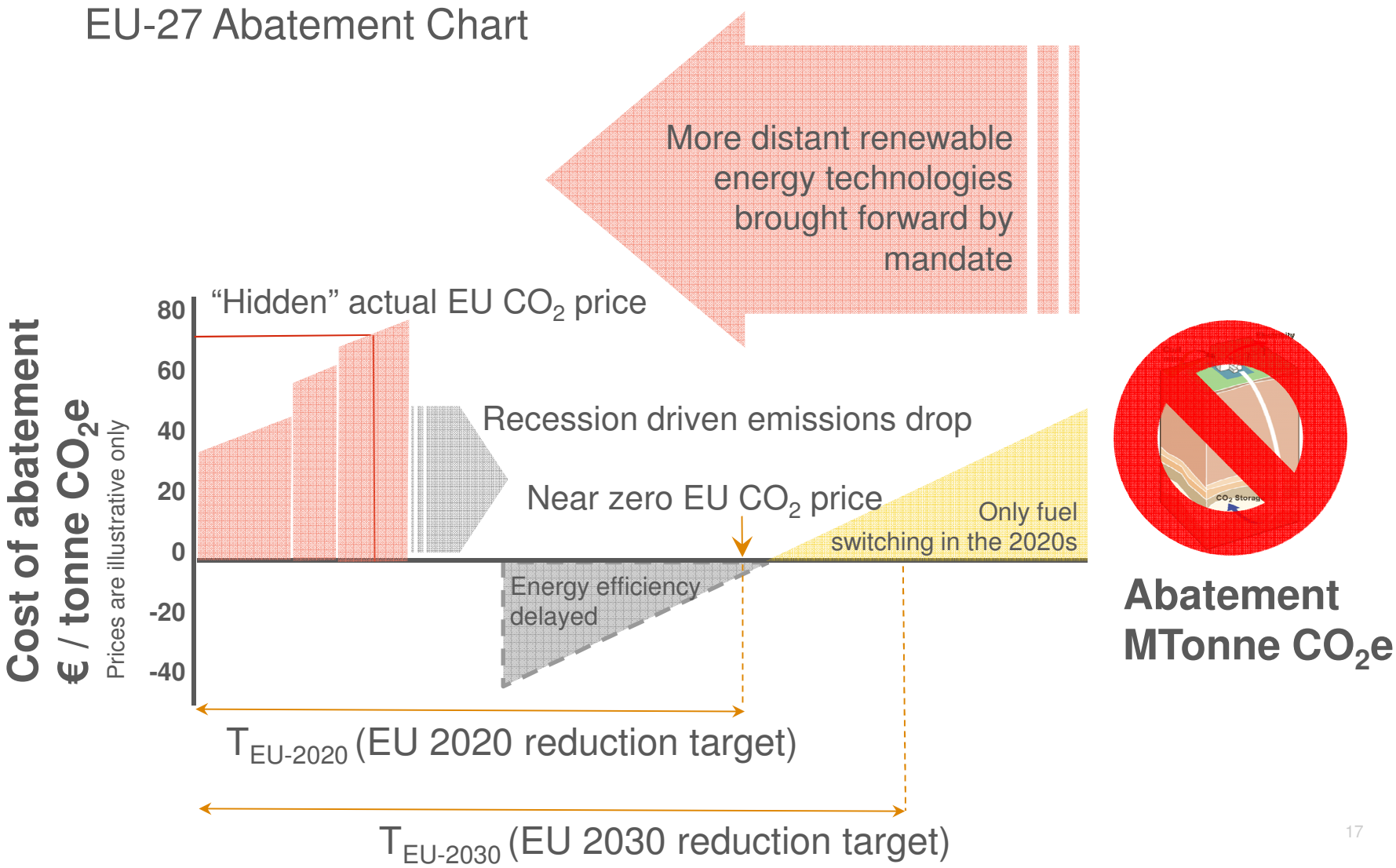
A CO_2 price drives project implementation from left to right across the abatement curve



Mandated renewable energy has distorted emissions mitigation economics across the EU.



The recession has further exacerbated the situation.



Poor policy design has undermined CCS.

- Overhang of allowances going into Phase III – estimates vary, but substantial.
- New policy measures undermining the structure – e.g. energy efficiency directive.
- EU member states starting to take their own action – e.g. UK carbon floor price.
- Higher cost compliance route for the EU.
- No progress on CCS at all.
- Potentially a poor example to the rest of the world.

Business investment is undermined

A clear policy framework vision, stripped back to the essentials.

	Power Generation / Industry & Manufacturing	Road Transport	Commercial & Domestic (Buildings)
Research & Development			
Demonstrate and limited pre-commercial deployment			
Deploy			

A clear policy framework vision, stripped back to the essentials.

	Power Generation / Industry & Manufacturing	Road Transport	Commercial & Domestic (Buildings)
Research & Development	*Broad R&D policy framework for energy production and use*		
Demonstrate and limited pre-commercial deployment	• *Direct support for limited large-scale programs* • *Early infrastructure networks in key locations*		*Radical design in buildings, e.g. through competitions*
Deploy	*A robust CO_2 price delivered "clean" into the market*	• *A CO_2 price impacts the fuel mix (e.g. FQD)* • *Vehicle efficiency standards*	*Efficiency standards for buildings, appliances etc.*

Q&A