

# Carbon pricing in China and Australia

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## Motivations

Air pollution, climate change

Energy security, technology leadership

## National emissions intensity target

40 to 45% reduction in CO<sub>2</sub>/GDP 2005-2020

An absolute target for 2025/2030?

Peak coal, peak CO<sub>2</sub>?

## A stronger role for market mechanisms

Including a carbon price

Context: further “marketization” of the economy

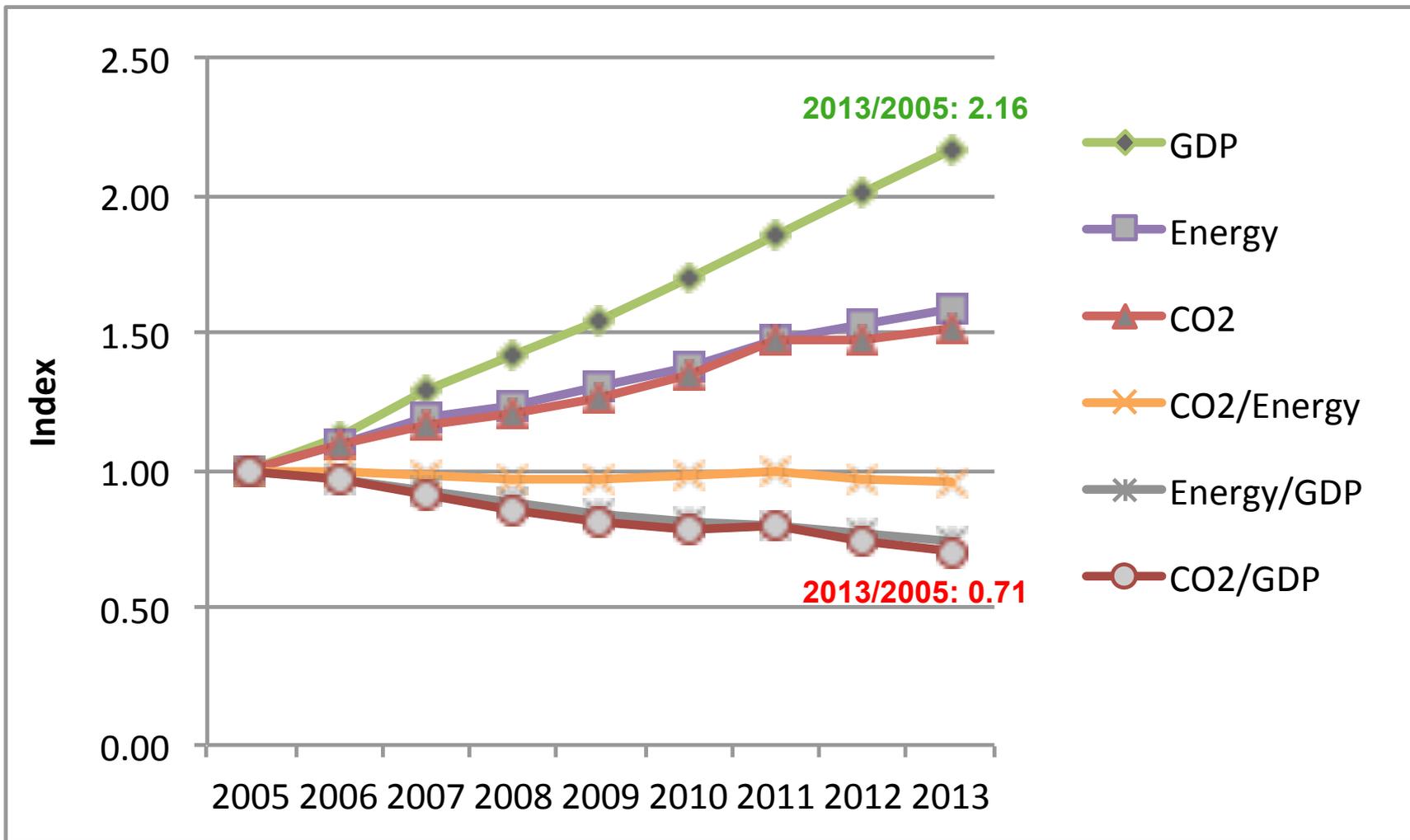
## Market reform needed

For a carbon price to be fully effective and cost-effective



# Recent trends and China's emissions intensity target

**China's 2020 emissions intensity target allows further growth in absolute emissions – but if GDP growth slows down, then not much further growth**





# Emissions intensity and energy intensity, China 2011

*China has a long way to go in catching up ... esp in energy intensity*

	Emissions per capita	Emissions intensity of the economy		Energy intensity of the economy		Emissions intensity of energy supply
	CO <sub>2</sub> emissions/population	CO <sub>2</sub> emissions/GDP PPP	CO <sub>2</sub> emissions/GDP at XR	TPES/GDP PPP	TPES/GDP at XR	CO <sub>2</sub> emis/TPES
	(t CO <sub>2</sub> per capita)	(t CO <sub>2</sub> /US\$'000 [2005 prices])		(petajoules/US\$ billion [2005 prices])		(t CO <sub>2</sub> /TJ)
China	5.9	0.78	1.81	11.2	25.9	69.7
USA	16.9	0.4	0.4	6.9	6.9	57.6
EU27	7	0.25	0.24	4.9	4.7	51.2
OECD	9.9	0.33	0.32	5.9	5.8	55.6
Non-OECD	3.1	0.55	1.26	9.6	21.9	57.4
World	4.5	0.45	0.6	7.8	10.5	57.1

*If rapid economic growth continues, CO<sub>2</sub> peaking in the 2020s requires fast energy productivity improvements and de-carbonization of energy supply*

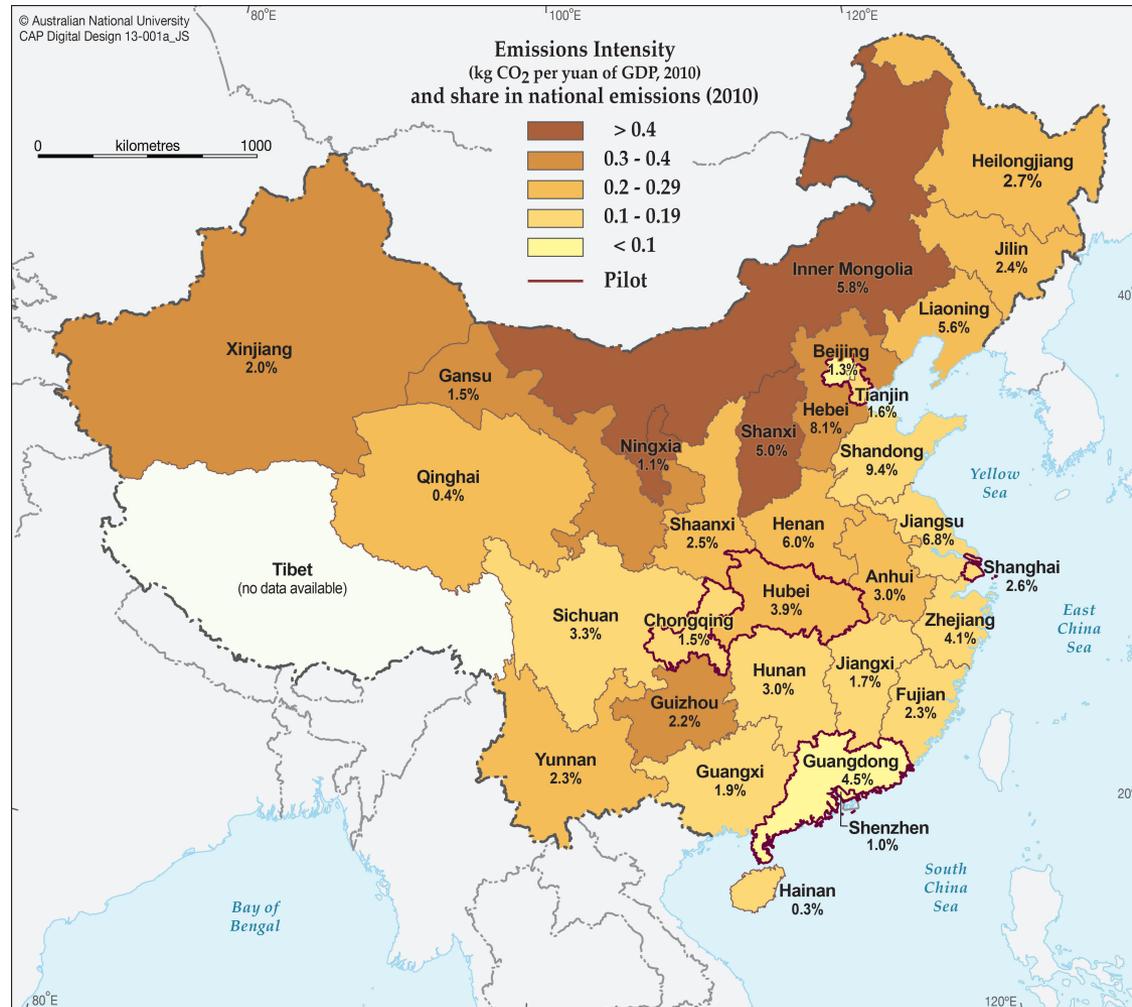
	2005-2013 (actual)		2014-2020		2021-2030		2031-2040	
	Annual growth	Index (2005=1) at 2013	Annual growth	Index (2005=1) at 2020	Annual growth	Index (2005=1) at 2030	Annual growth	Index (2005=1) at 2040
Energy/GDP	<b>-3.8%</b>	0.74	<b>-4.0%</b>	0.55	<b>-4.0%</b>	0.37	<b>-4.0%</b>	0.24
CO <sub>2</sub> /energy	<b>-0.5%</b>	0.96	<b>-1.0%</b>	0.89	<b>-1.5%</b>	0.77	<b>-1.5%</b>	0.66
CO <sub>2</sub> /GDP	<b>-4.3%</b>	0.71	<b>-5.0%</b>	0.49	<b>-5.4%</b>	0.28	<b>-5.4%</b>	0.16
GDP	<b>10.1%</b>	2.16	<b>7.4%</b>	3.55	<b>5.8%</b>	6.24	<b>4.0%</b>	9.24
Energy	6.0%	1.59	3.1%	1.97	1.6%	2.30	-0.2%	2.26
CO <sub>2</sub>	5.4%	<b>1.52</b>	2.1%	<b>1.75</b>	0.0%	<b>1.76</b>	-1.7%	<b>1.49</b>

## 7 pilot schemes

6 in operation,  
covering >600MtCO<sub>2</sub>  
different designs:  
experimentation

## National c-price?

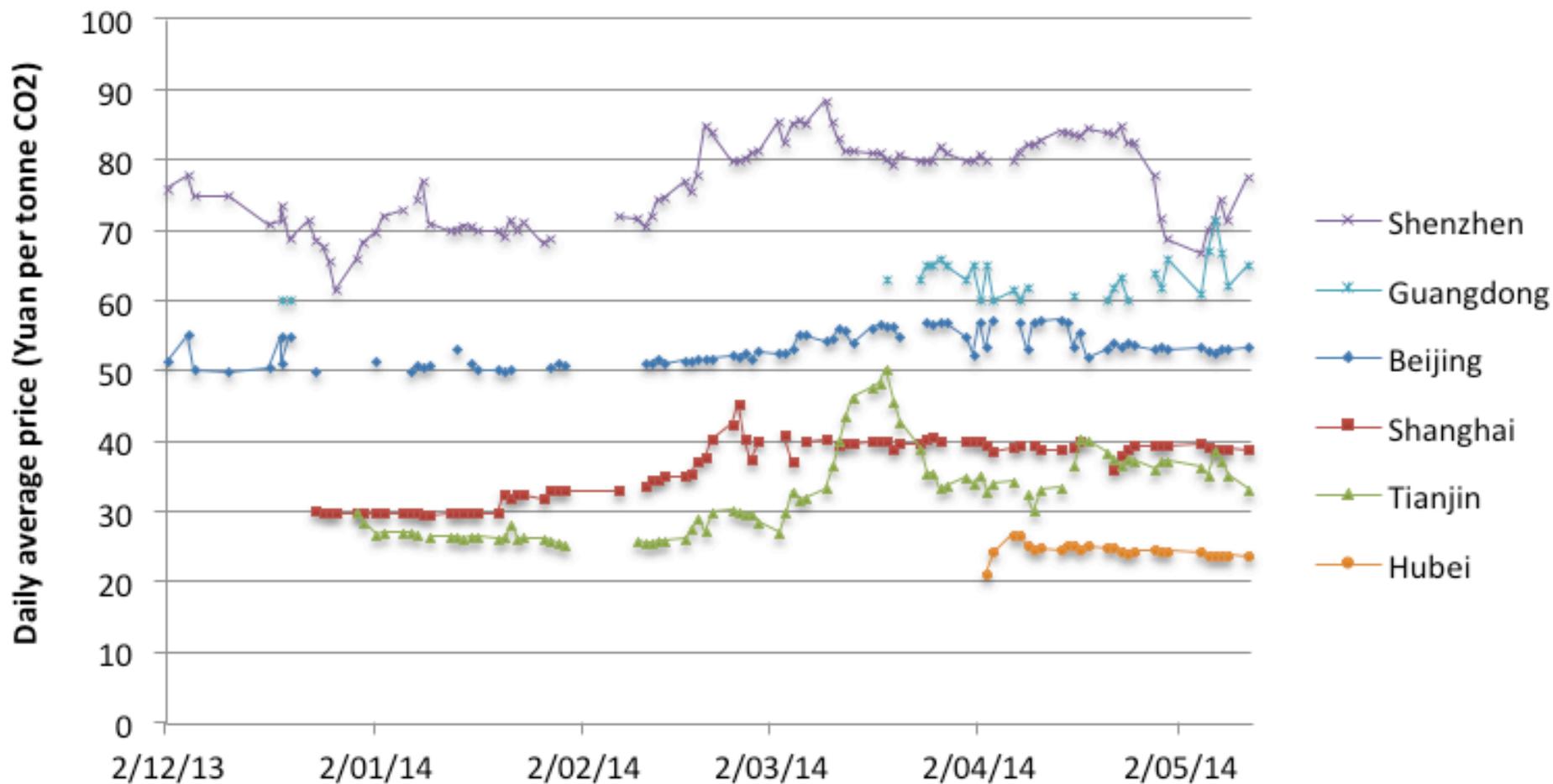
National ETS expected to  
be in operation by 2020  
National carbon tax  
possibly in parallel, or  
in addition





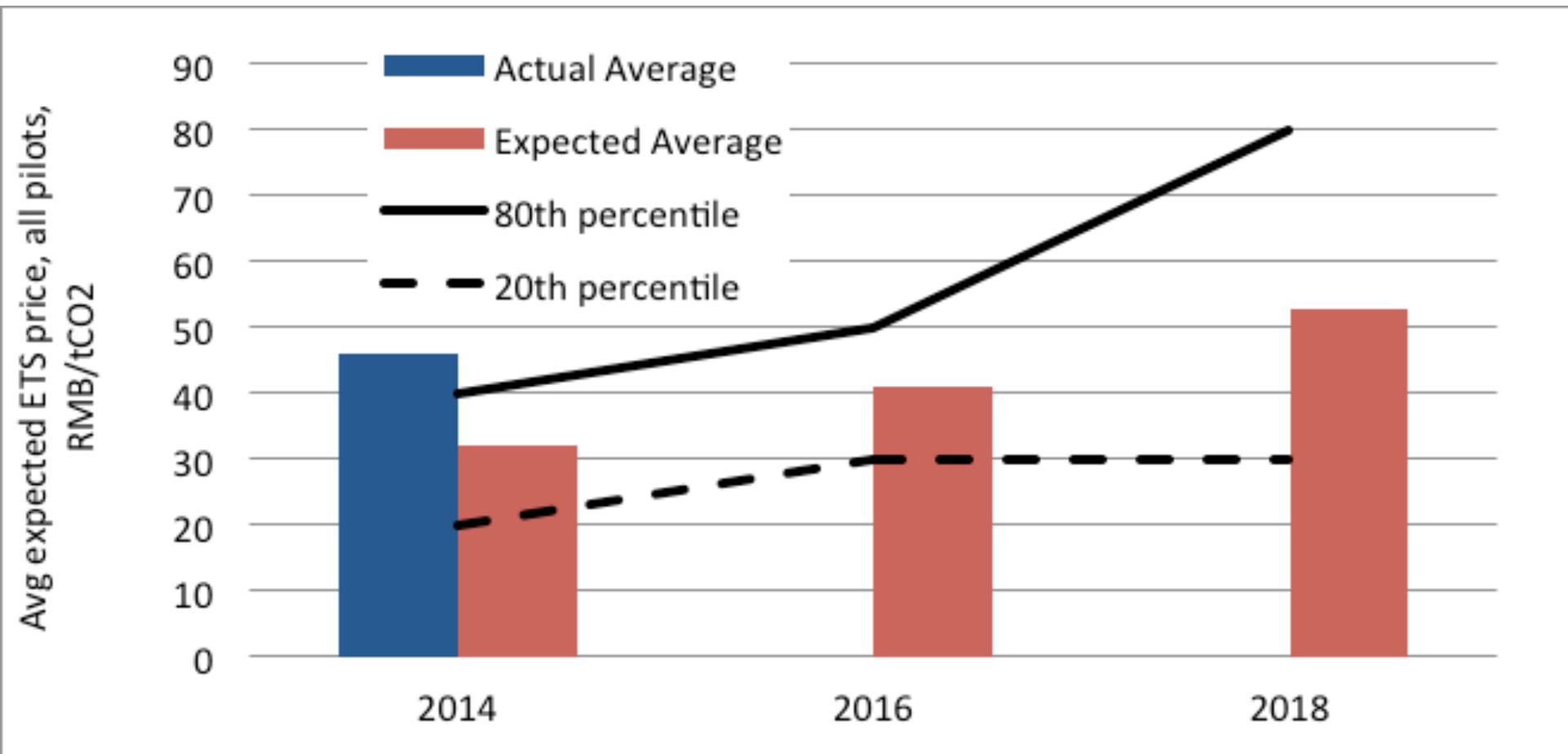
# Prices in the pilot schemes

## China's 6 operating pilots - Daily volume weighted average price (2/12/13 to 12/5/14)



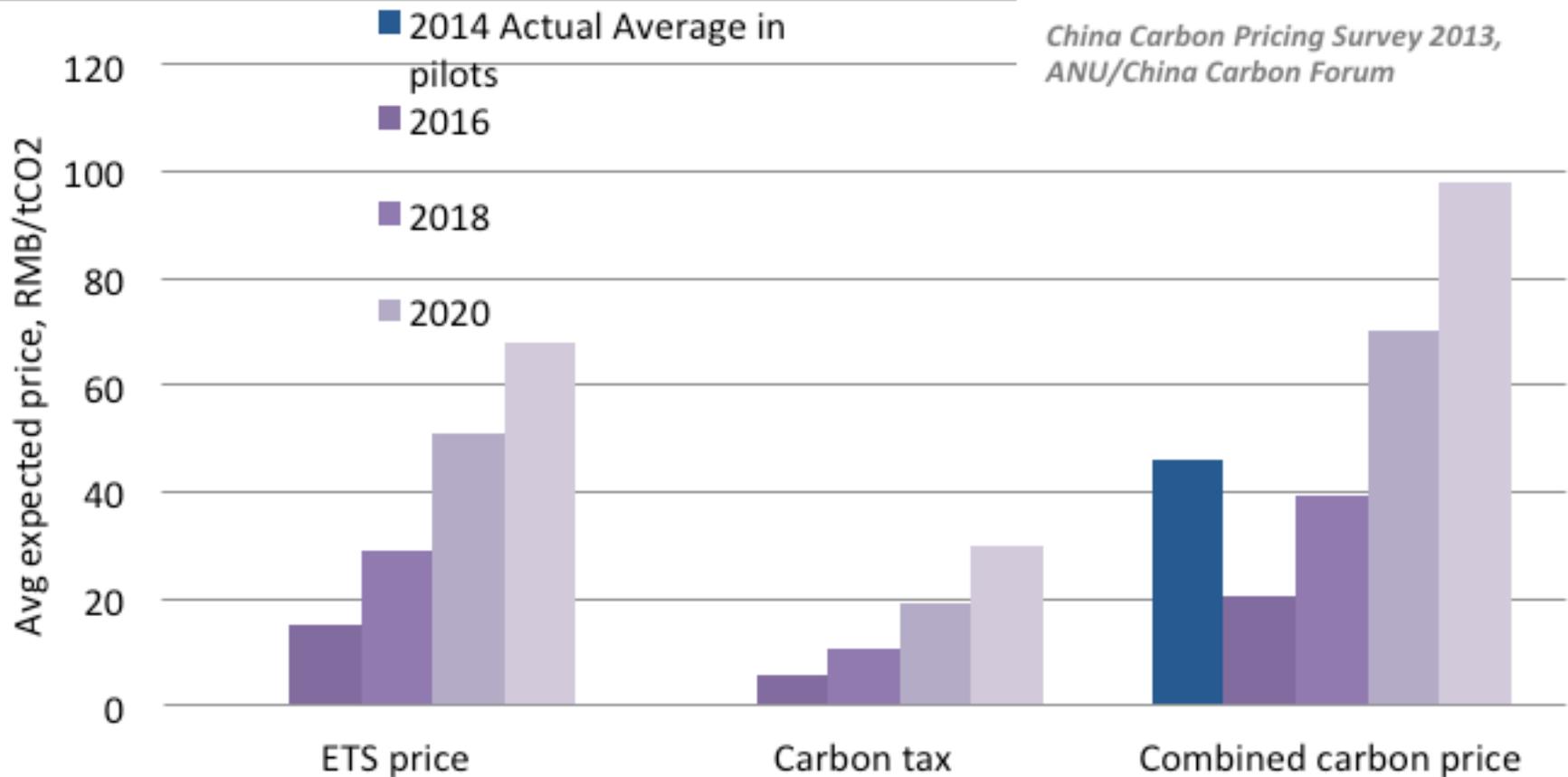
# Prices in the pilot schemes

**Average prices in the pilot schemes to May 2014  
are somewhat higher than expectations in an expert survey in Q3 2013**



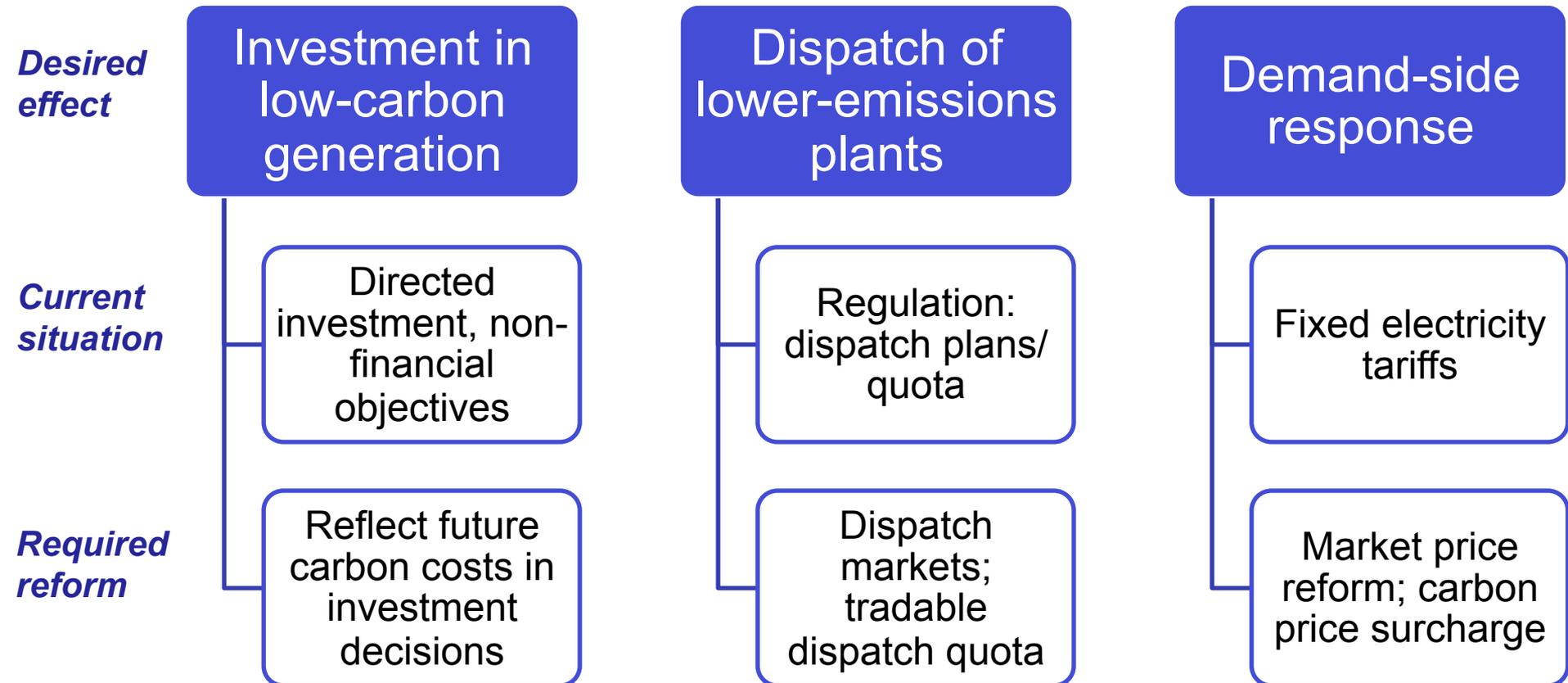
# Expected prices for a Chinese national scheme

## Expected price for a national ETS and carbon tax, expert survey in Q3 2013

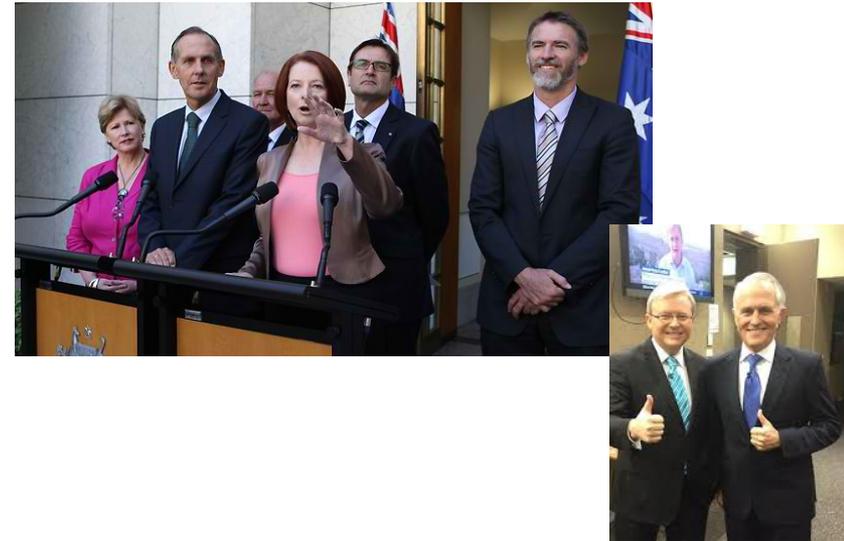




# Market reform in the power sector for effective carbon pricing



# Update on Australia's climate policy



“It’s particularly important that we do not demonise the **coal industry** and if there was one fundamental problem, above all else, with the **carbon tax** was that it said to our people, it said to the wider world, that a **commodity which in many years is our biggest single export, somehow should be left in the ground and not sold**. Well really and truly, I can think of few things more damaging to our future.”

*PM Abbott, Address to the Minerals Week 2014 Annual Minerals Industry Parliamentary Dinner, Canberra*

## Australia's carbon pricing mechanism

Started July 2012 ... **still exists, pending new Senate July 2015**

Fixed price A\$23/t, rising to A\$25/t, EU ETS link 2015

~ 1/2 of permits sold; income tax cuts to lower and middle income households, higher welfare payments

**The large majority of households are better off as a result of the policy  
... but a majority thinks they are worse off**

## Other climate policy instruments currently in place

Renewable energy target (portfolio standard)

Clean Energy Finance Corporation

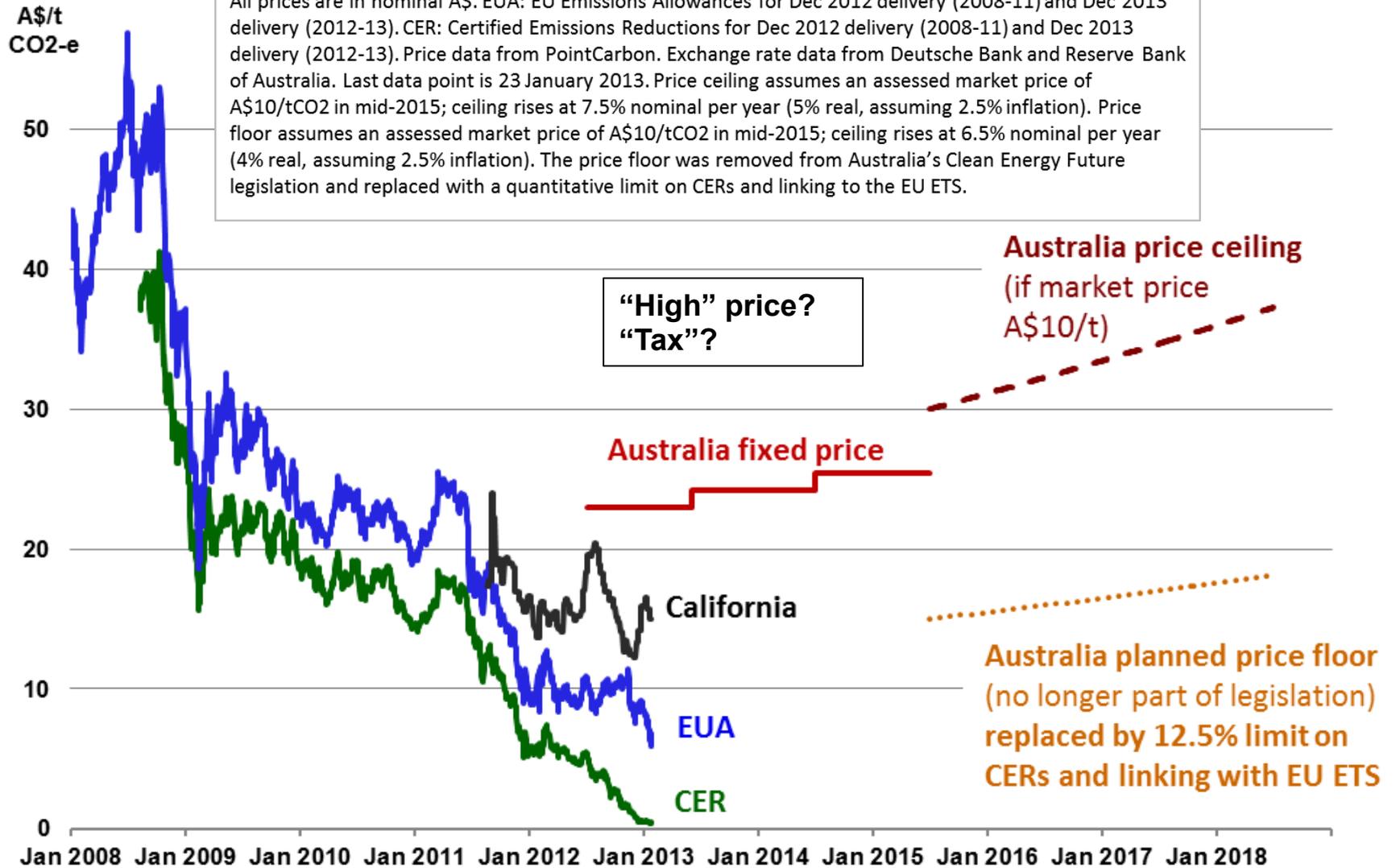
R&D support for renewables, CCS

Energy efficiency programs

Climate Change Authority



# Australia's carbon price in comparison

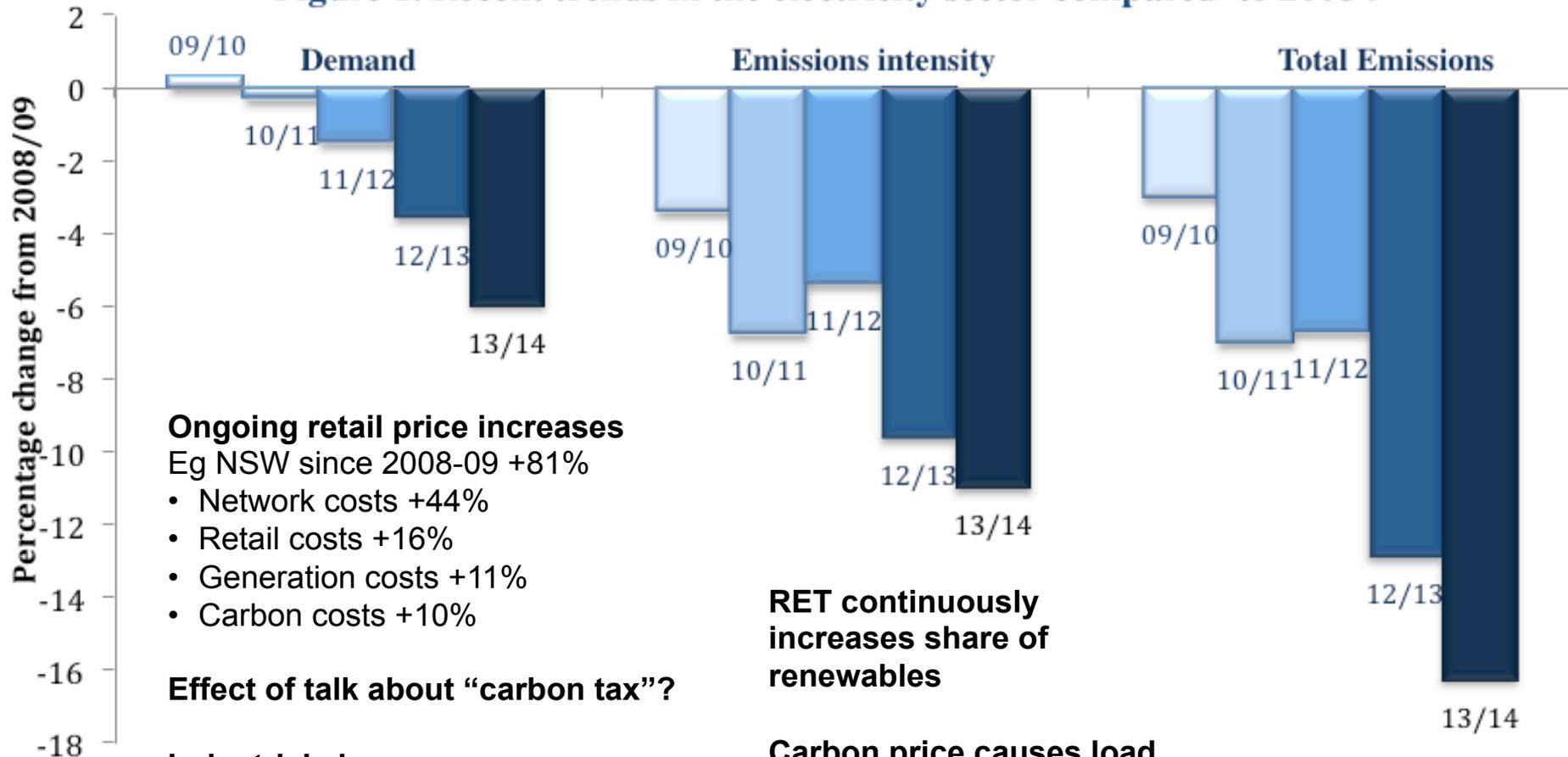




# Trends in Australia's electricity sector

## Carbon price started in 2012-13

Figure 1. Recent trends in the electricity sector compared to 2008-9



### Ongoing retail price increases

Eg NSW since 2008-09 +81%

- Network costs +44%
- Retail costs +16%
- Generation costs +11%
- Carbon costs +10%

Effect of talk about "carbon tax"?

Industrial closures  
(independent of carbon price)

RET continuously increases share of renewables

Carbon price causes load shifting  
... but probably no investment effect

## OUT

- **Abolish the carbon pricing mechanism**
- **Cut govt support for financing and R&D**
- **Abolish climate policy institutions**
- **Water down the renewable energy target?**
- **Cut energy efficiency programs?**

## IN

- **New subsidy mechanism to pay for contracted emissions reductions projects (“Emissions Reductions Fund”)**
- **Car fuel efficiency standards?**

## Arguments:

- **Lower power demand means diminished need for renewables**
- **Idle coal-fired generating capacity, wholesale power prices squeezed**
- **Energy efficiency programs:  
“Profit losses to generators outweigh energy cost savings to consumers”**

**Perhaps the world's best designed carbon pricing policy**  
... and probably the shortest lived one

## **Politics trumps policy**

... communicating the benefits of sound economic policy

Can we really leave the explaining to the politicians?

... dealing with vested interests in democratic processes

Take a more gradual approach if governments are not firmly in control?



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