

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 CO₂/GDP 2005-2020

An absolute target for 2025/2030?

Peak coal, peak CO₂?

A stronger role for market mechanisms

Including a carbon price

Context: further “marketization” of the economy

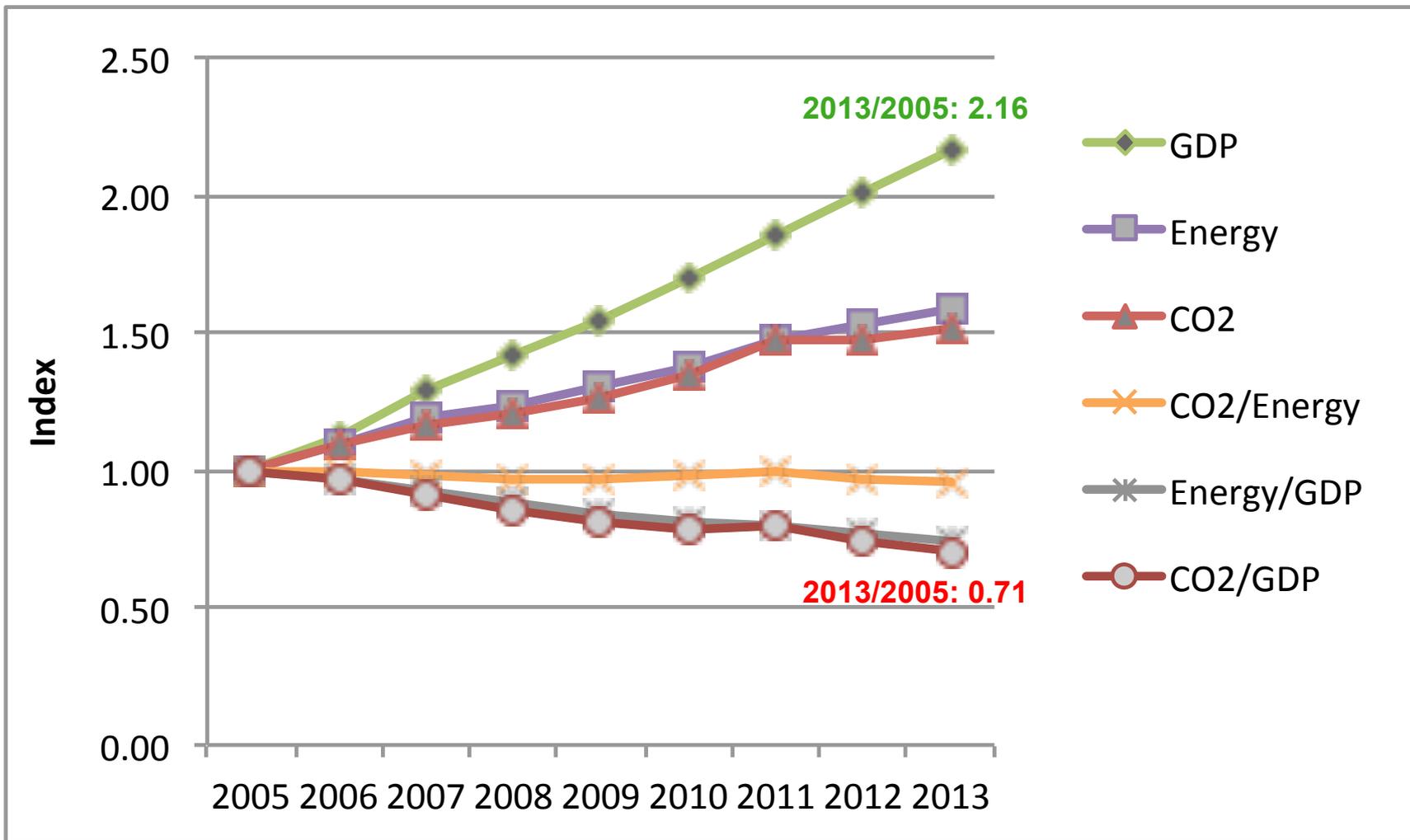
Market reform needed

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 ₂ emissions/population	CO ₂ emissions/GDP PPP	CO ₂ emissions/GDP at XR	TPES/GDP PPP	TPES/GDP at XR	CO ₂ emis/TPES
	(t CO ₂ per capita)	(t CO ₂ /US\$'000 [2005 prices])		(petajoules/US\$ billion [2005 prices])		(t CO ₂ /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, CO₂ peaking in the 2020s requires fast energy productivity improvements and de-carbonization of energy supply

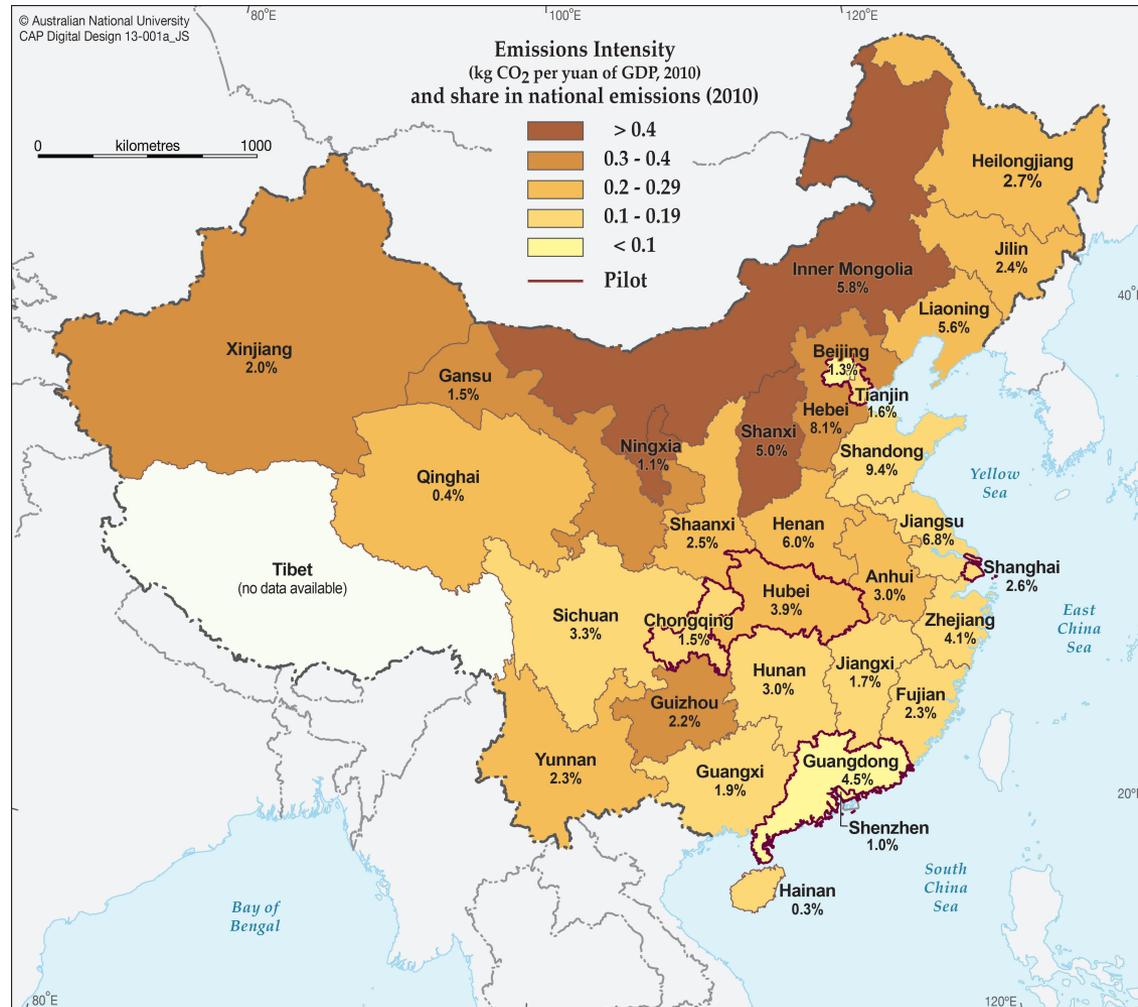
	2005-2013 (actual)		2014-2020		2021-2030		2031-2040	
	Annual growth	Index (2005=1) at 2013	Annual growth	Index (2005=1) at 2020	Annual growth	Index (2005=1) at 2030	Annual growth	Index (2005=1) at 2040
Energy/GDP	-3.8%	0.74	-4.0%	0.55	-4.0%	0.37	-4.0%	0.24
CO ₂ /energy	-0.5%	0.96	-1.0%	0.89	-1.5%	0.77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

7 pilot schemes

6 in operation,
covering >600MtCO₂
different designs:
experimentation

National c-price?

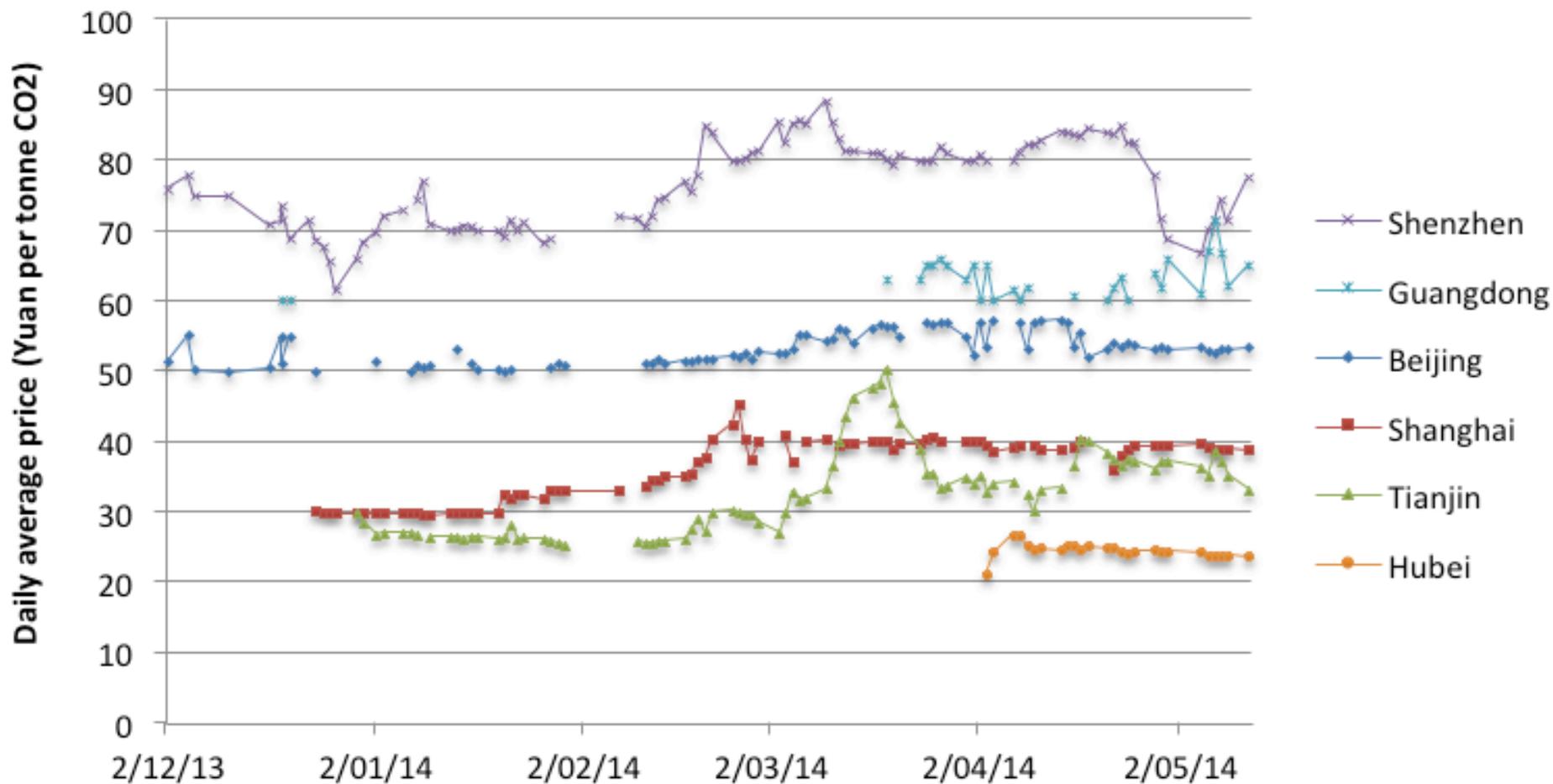
National ETS expected to
be in operation by 2020
National carbon tax
possibly in parallel, or
in addition





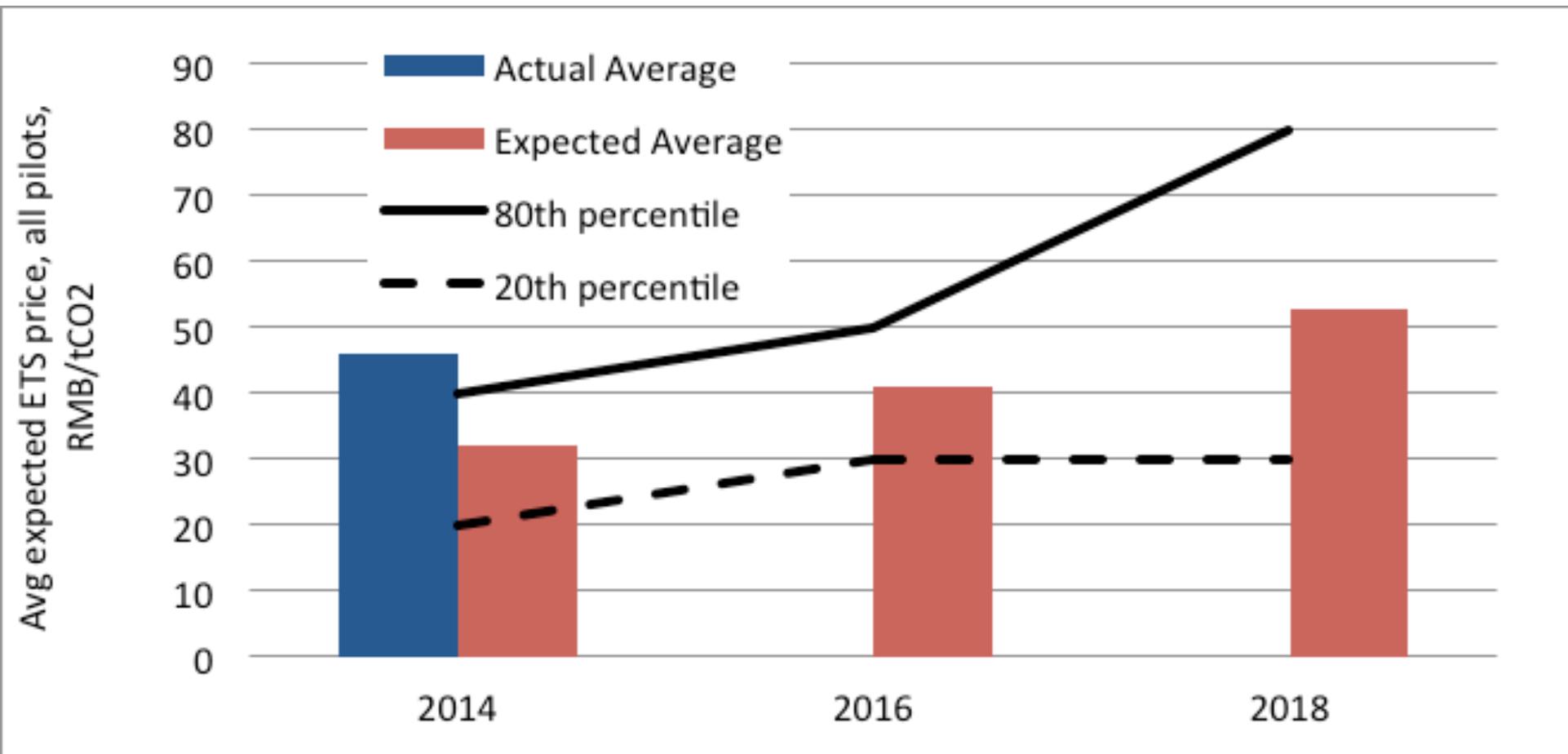
Prices in the pilot schemes

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



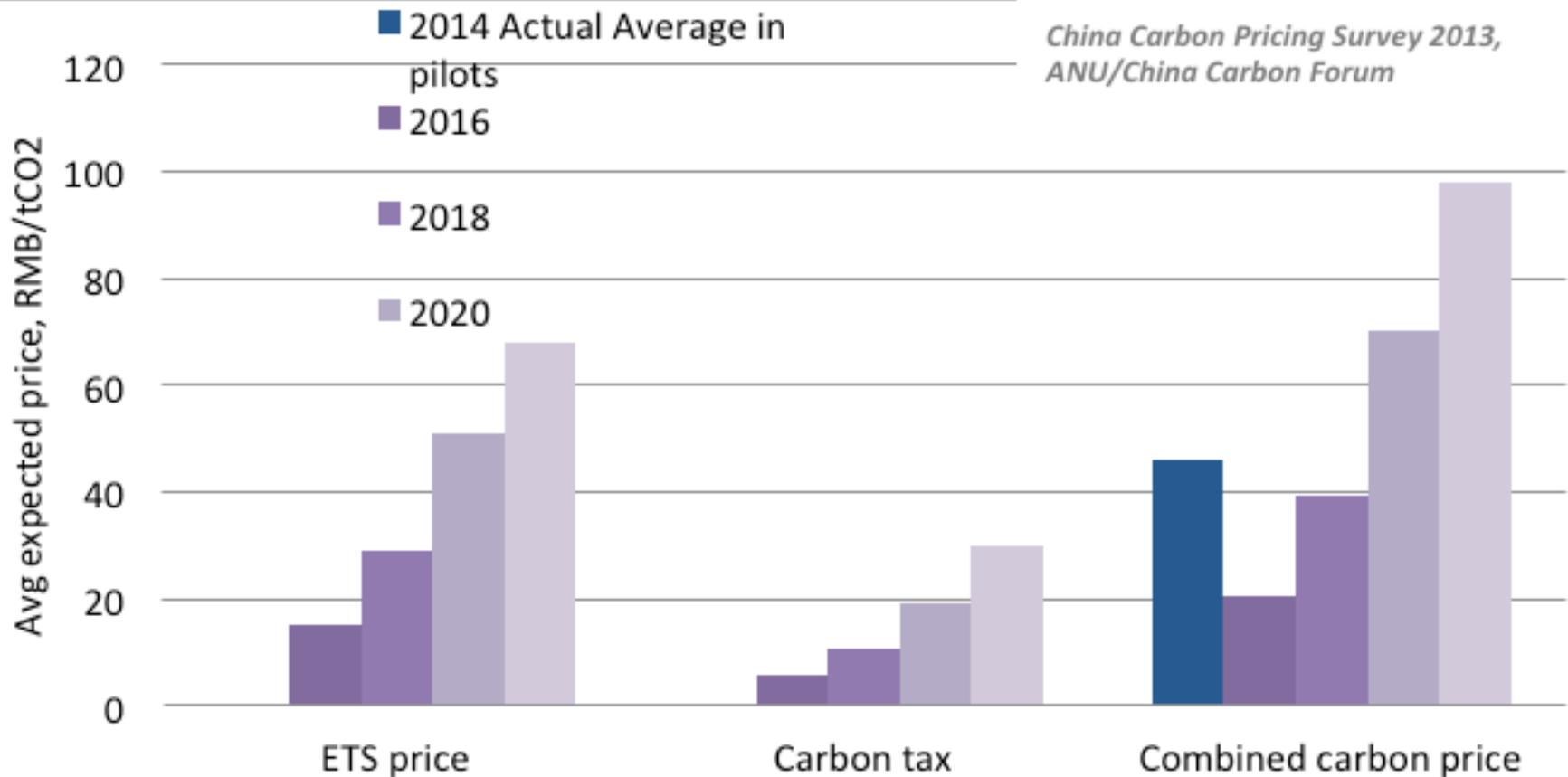
Prices in the pilot schemes

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



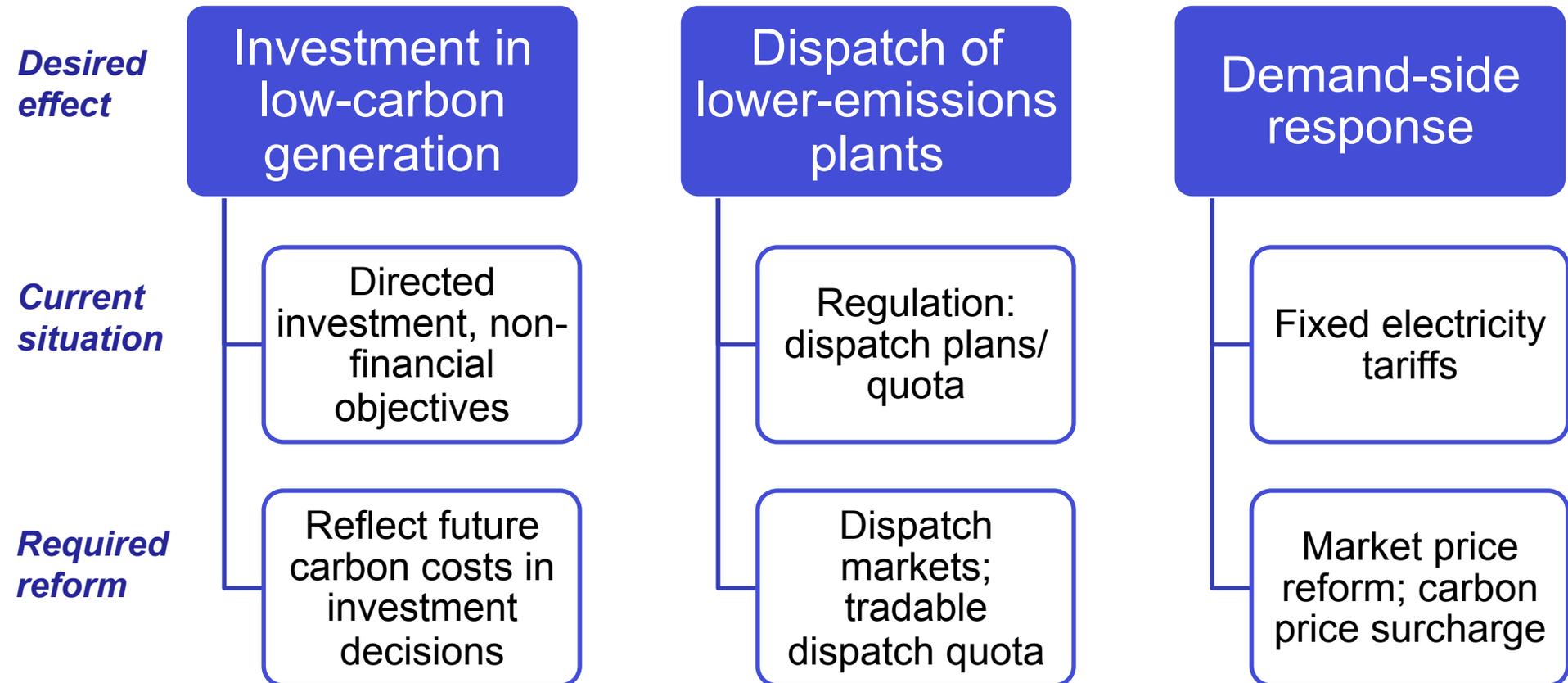
Expected prices for a Chinese national scheme

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

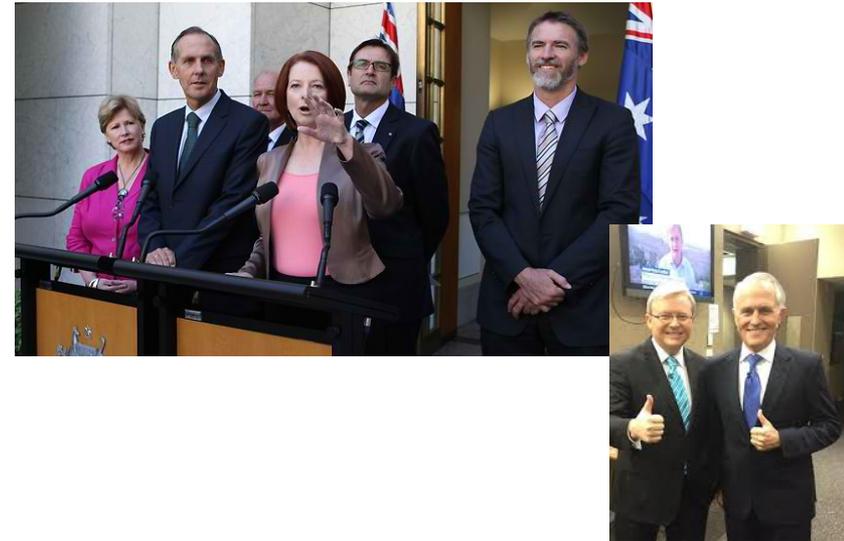




Market reform in the power sector for effective carbon pricing



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

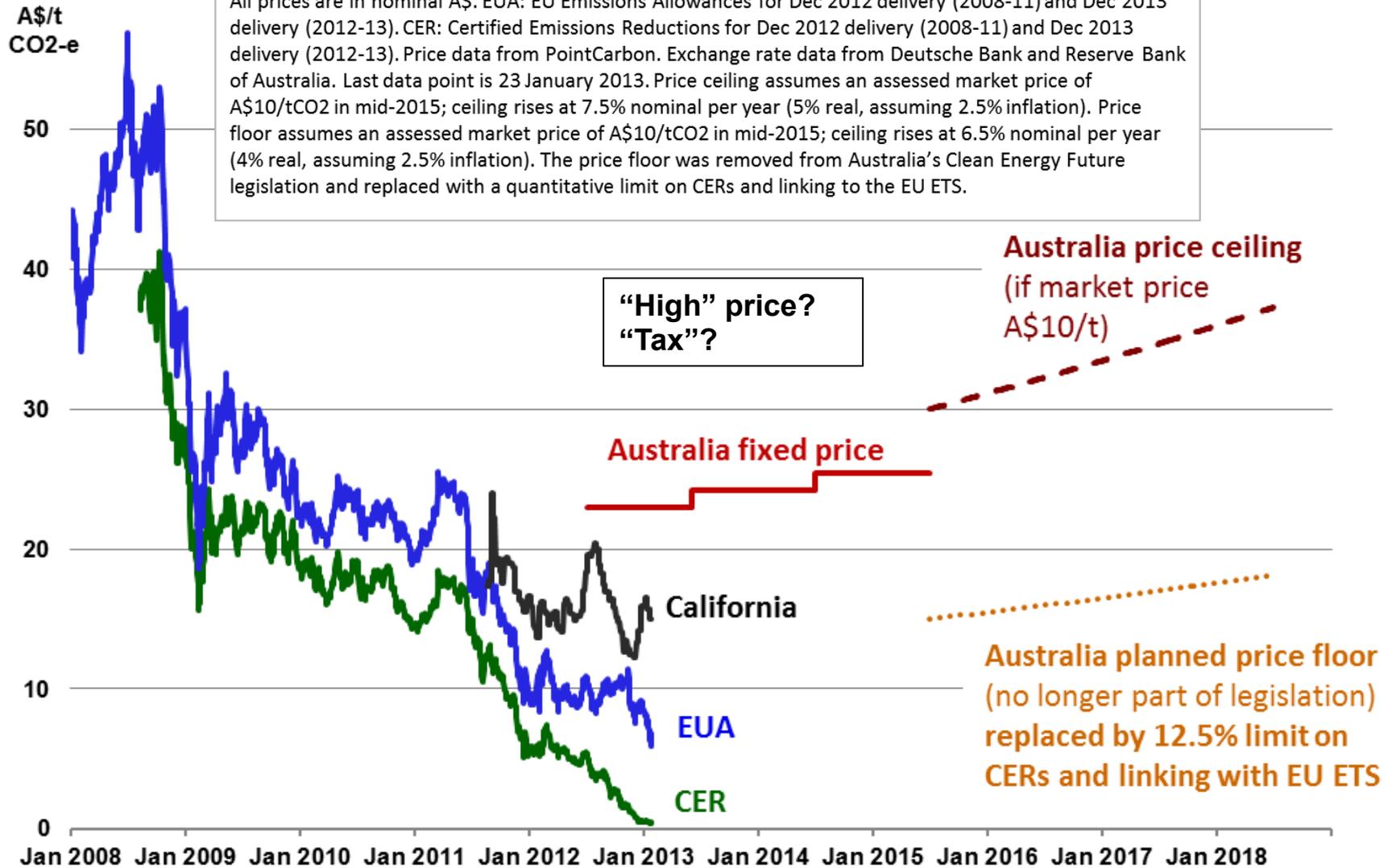
R&D support for renewables, CCS

Energy efficiency programs

Climate Change Authority



Australia's carbon price in comparison

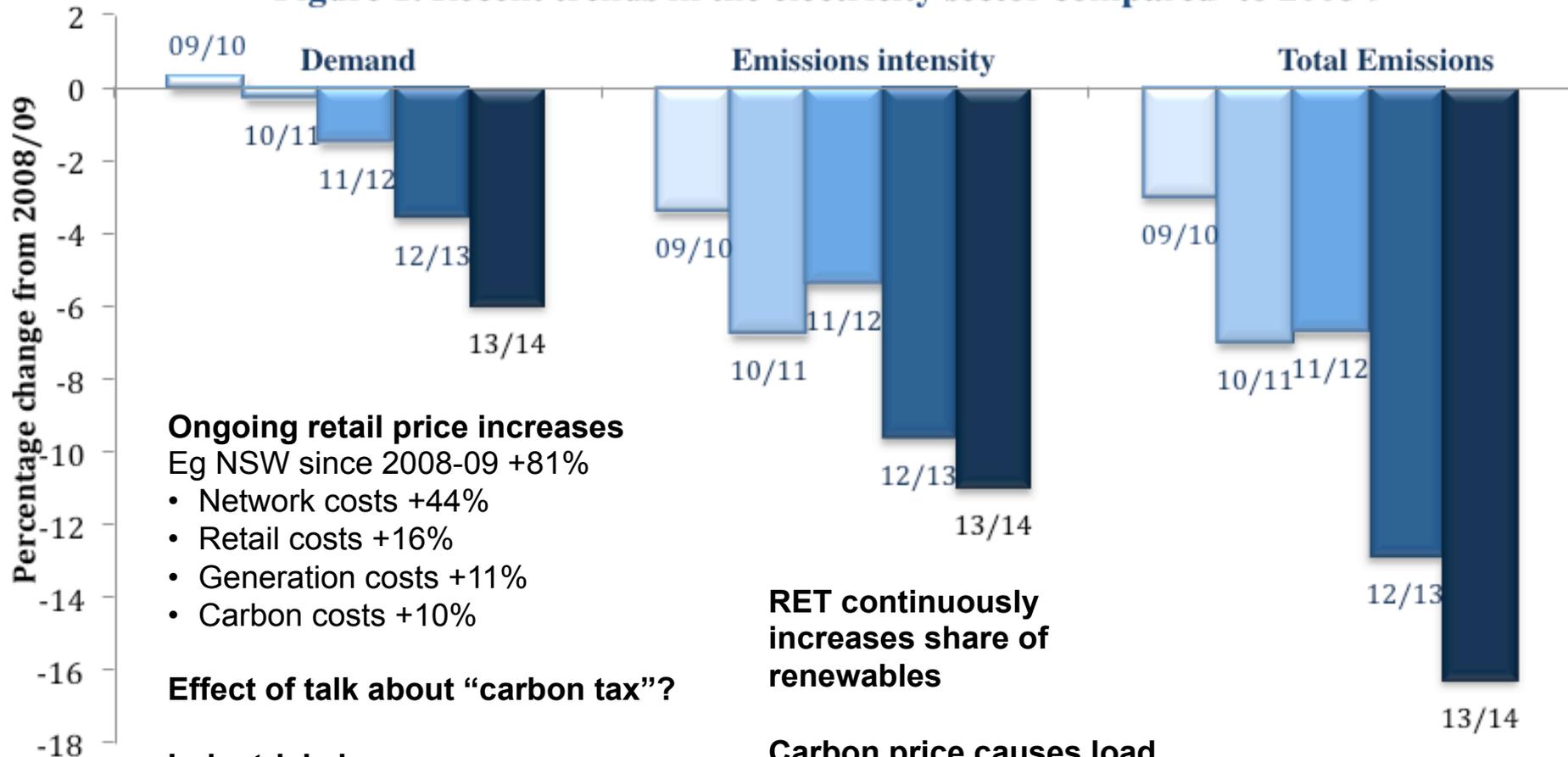




Trends in Australia's electricity sector

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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