

# **Carbon Price: Stifled or Boosted by War and Record Gas Prices?**

**March 2022**

## **1. Global compliance carbon markets**

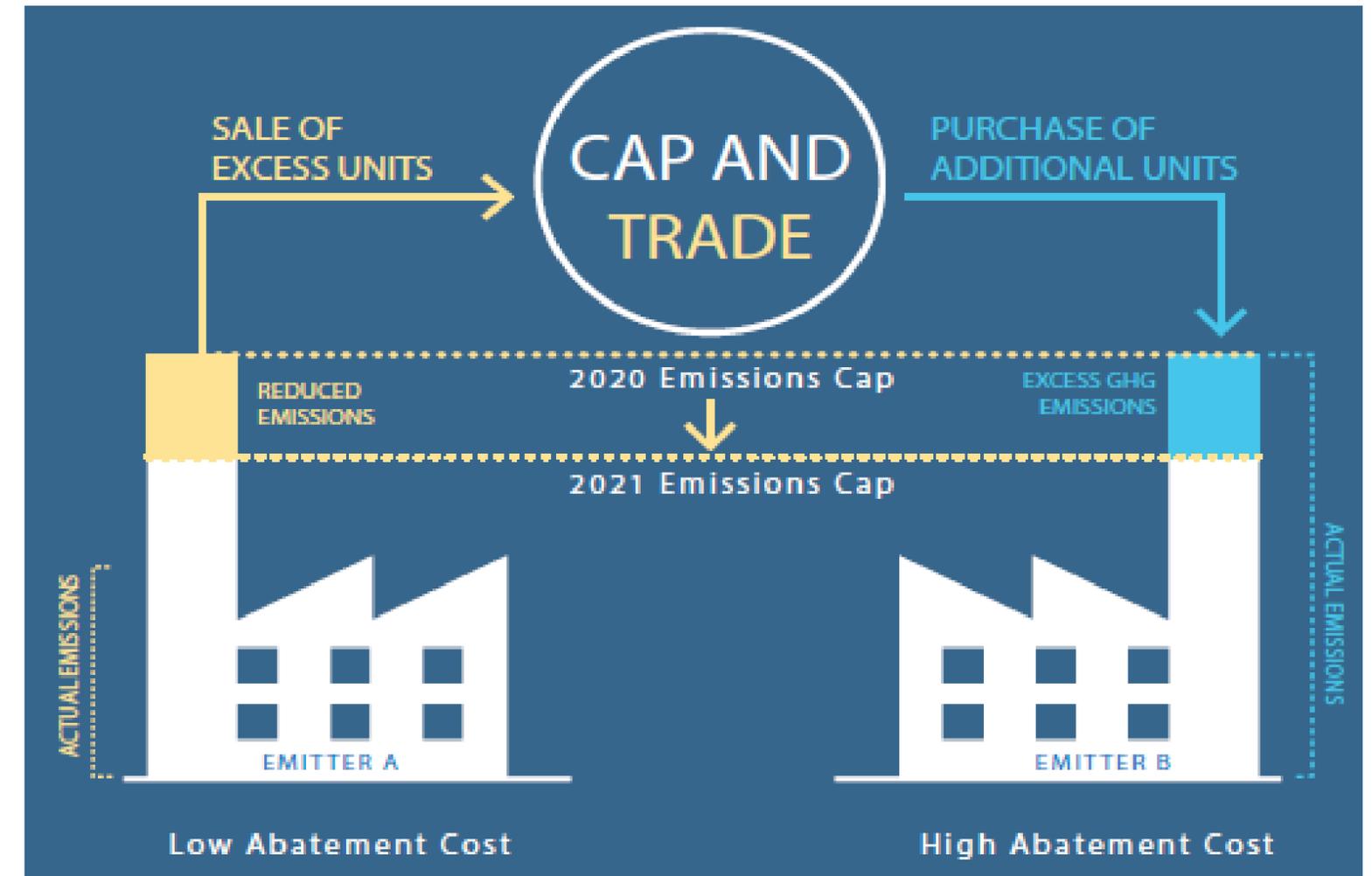
## **2. Impacts of carbon pricing**

## **3. 'Carbon neutral' LNG**

# Emissions Trading Systems (ETS) are “market based” policies that cap and reduce emissions at the lowest cost



1. **Regulated system with mandatory inclusion** for entities with emissions above a threshold
2. Participants **audited annually and must submit allowance permits** matching their emissions (1 allowance permit = 1 tonne of CO<sub>2</sub>e)
3. Participants **allocated or auctioned** allowance permits.
4. Total supply of allowance permits is capped, and **cap declines annually**
5. Participants trade allowance permits, **setting a market price for carbon**
6. The trading of carbon sends a price signal that **ensures emissions reductions occur at the lowest cost to society**
7. A **liquid market** provides the ability to hedge and to monetise low carbon technology

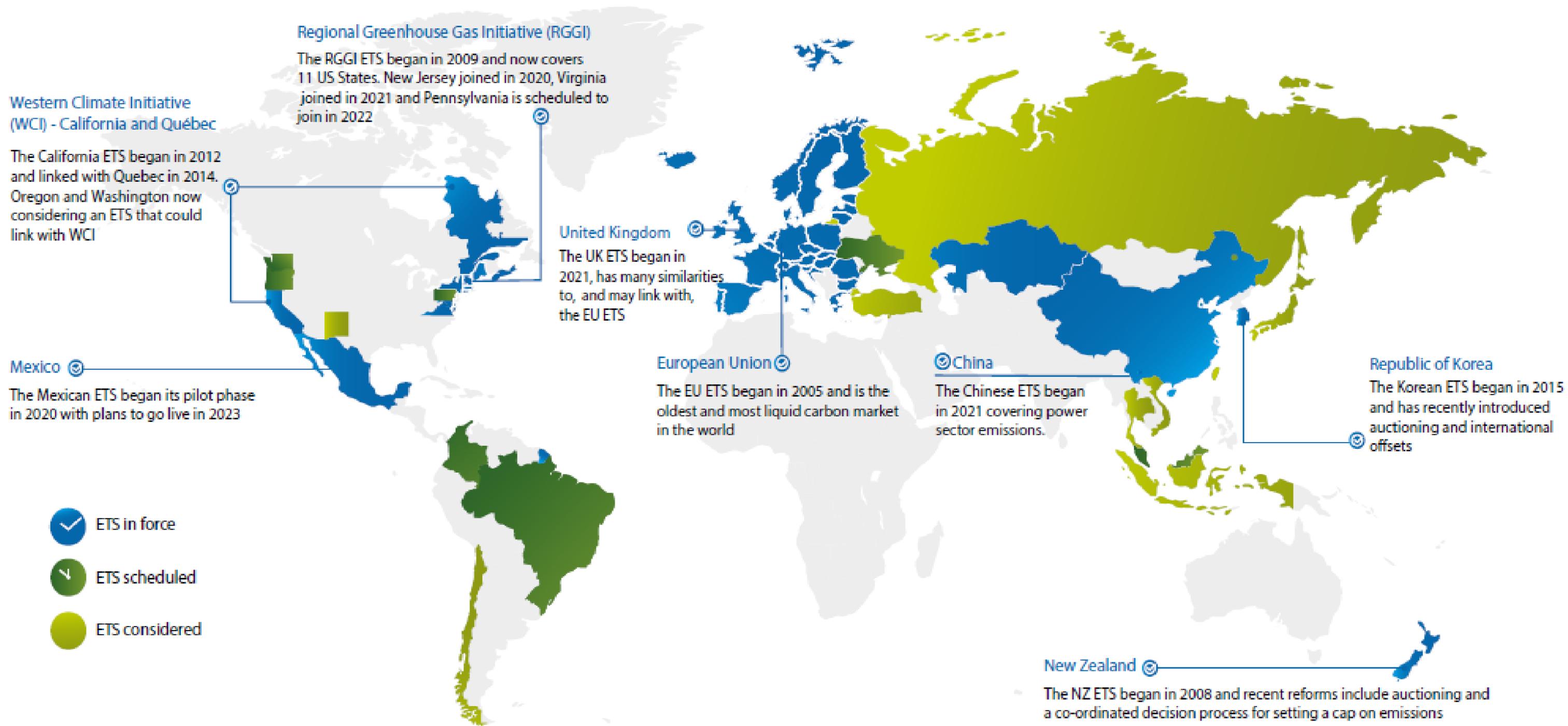


# There are two main types of carbon markets



Market elements	Compliance carbon markets (Emissions Trading Systems)	Voluntary carbon markets
<b>Description</b>	<ul style="list-style-type: none"> <li>Mandatory markets setting a cap on emissions for large emitters</li> <li>Sometimes allow limited amount of external offset credits</li> </ul>	<ul style="list-style-type: none"> <li>Markets for non-regulated entities to voluntarily reduce emissions</li> <li>The Clean Development Mechanism (CDM) was the first under the Kyoto Protocol</li> <li>Emissions reductions transferred across countries</li> </ul>
<b>Current Status</b>	<ul style="list-style-type: none"> <li>Now covers 15% of global emissions with the launch of the Chinese ETS</li> </ul>	<ul style="list-style-type: none"> <li>Large market, currently stagnating</li> <li>Article 6 of the Paris Agreement to reignite international markets</li> </ul>
<b>Regulation</b>	<ul style="list-style-type: none"> <li>Highly regulated with robust monitoring, reporting and verification (MRV)</li> </ul>	<ul style="list-style-type: none"> <li>UN recognised accounting methodologies, such as Gold Standard (GS), Verified Carbon Standard (VCS) accounting, etc.</li> </ul>
<b>Liquidity</b>	<ul style="list-style-type: none"> <li>Highly liquid</li> <li>In 2021 over US\$ 800 billion traded in global compliance carbon markets</li> </ul>	<ul style="list-style-type: none"> <li>Low liquidity</li> <li>In 2021, US\$ 1 billion traded</li> </ul>
<b>Carbon prices</b>	<ul style="list-style-type: none"> <li>Range from US\$ 13 - &gt;100 /tCO<sub>2</sub>e</li> </ul>	<ul style="list-style-type: none"> <li>Range from US\$ 0.3 - &gt;\$70/tCO<sub>2</sub>e</li> </ul>

# Emissions trading is spreading globally - 13 Emissions Trading Systems in force with 6 scheduled and 12 being considered



# Compliance carbon markets exhibit unique design features



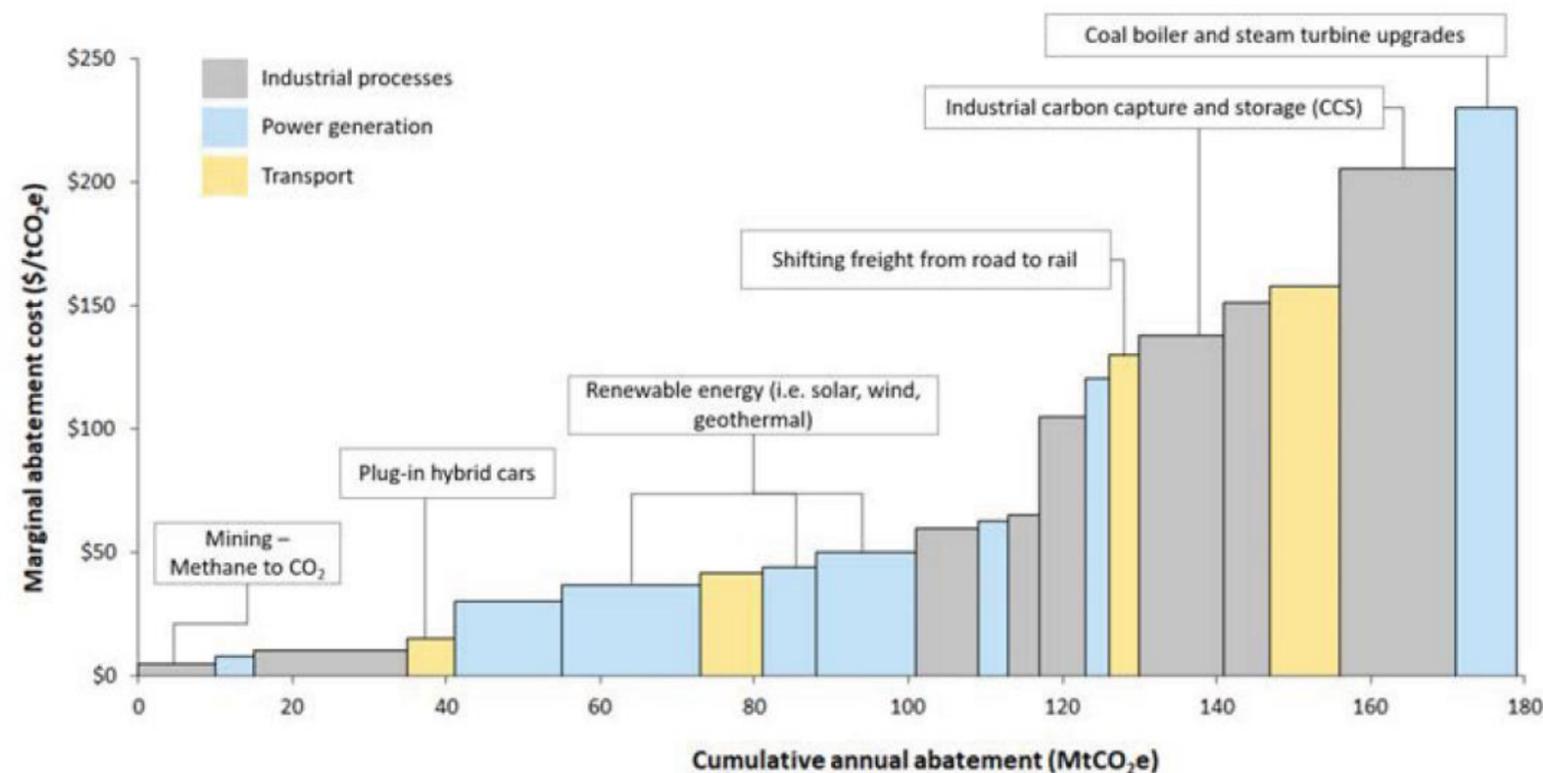
Characteristics	EU ETS	UK ETS	WCI	RGGI	NZ ETS
<b>Number of covered entities</b>	>12,000	>1,000	>800	>220	>2,200
<b>Sectors covered</b>	energy intensive manufacturing, electricity generation and aviation	energy intensive manufacturing, electricity generation and aviation	Transport fuels, energy intensive manufacturing and electricity generation	Electricity generation	energy intensive manufacturing, electricity generation, transport fuels, waste, forestry
<b>Use of offsets</b>	Post 2020 – none allowed	None allowed	4% over 2021-25 then up to 6% post 2025. Qualitative limits - only domestic offsets across specific project types	Entities can use domestic offsets from specific project types for up to 3.3% of their compliance obligations.	Only emissions removals from domestic forestry
<b>End of 2021 allowance price (US\$)</b>	91	101	33	14	47
<b>Market stability mechanism</b>	Market Stability Reserve	Auction price floor and Cost Containment Mechanism (CCM)	Soft price corridor (soft auction floor and three-tier ceilings)	Soft price corridor (two-tier soft auction floor and ceiling)	Auction price floor and Cost Containment Reserve (CCR)
<b>Use of Auction Revenues</b>	Most recycled into climate and energy purposes	Revenues recycled into general budget, exploring options to fund industrial decarbonisation	Funding activities to help achieve broader climate mitigation	Funding projects to reduce emissions, create jobs, reduce energy bills, and reduce local pollutants	Revenues recycled into general budget, no earmarking.

# Carbon markets reduce emissions by incentivizing abatement based on marginal abatement costs



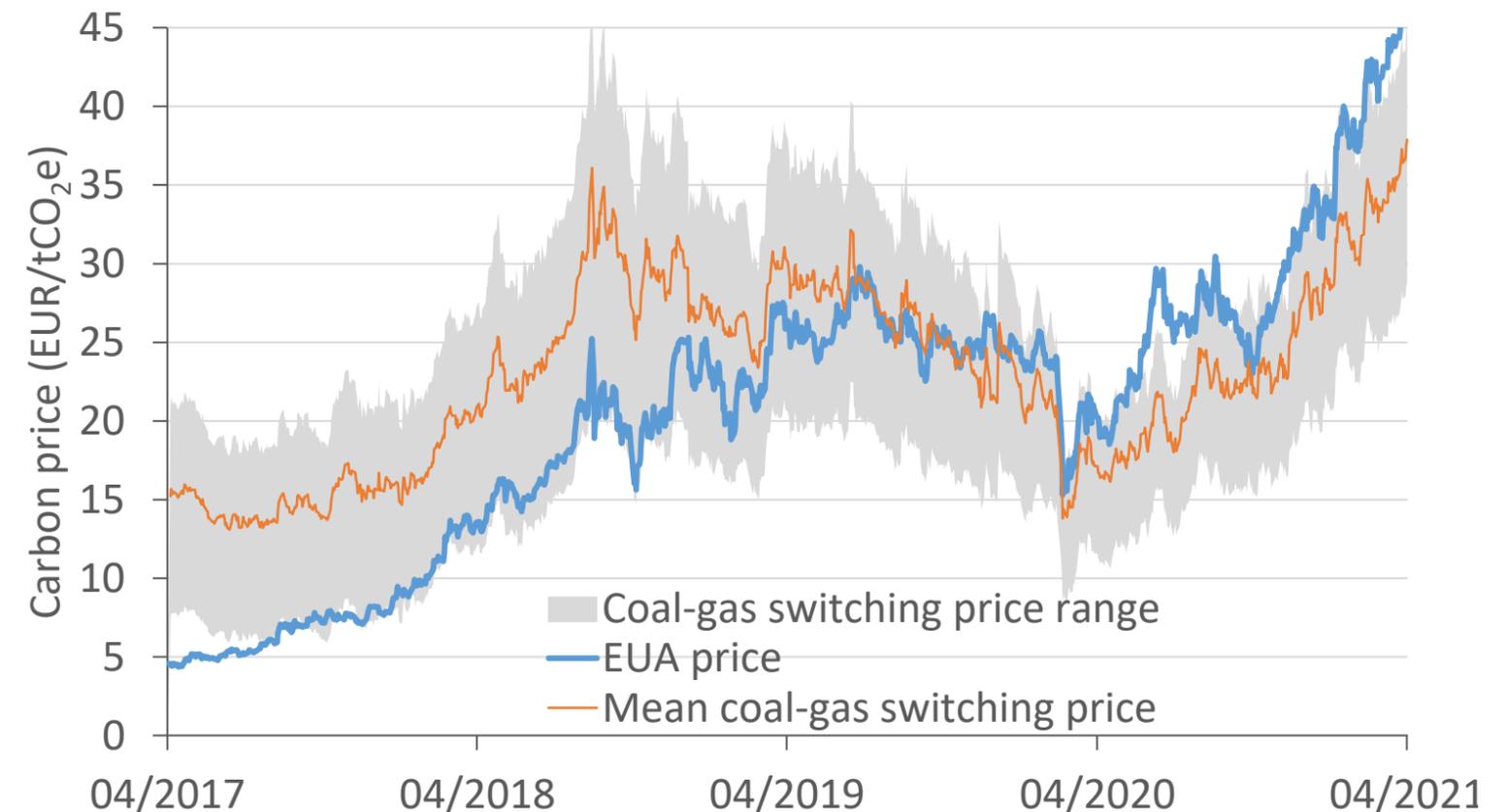
- In Europe, abatement has been achieved largely through coal-gas fuel switching since 2017
- Unlocked abatement reduces demand for carbon allowances resulting in an equilibrium price

### Illustrative Marginal Abatement Cost Curve (MACC)



Source: Illustration based on Reputex (2015)

### German Year-ahead fuel-switching costs through time

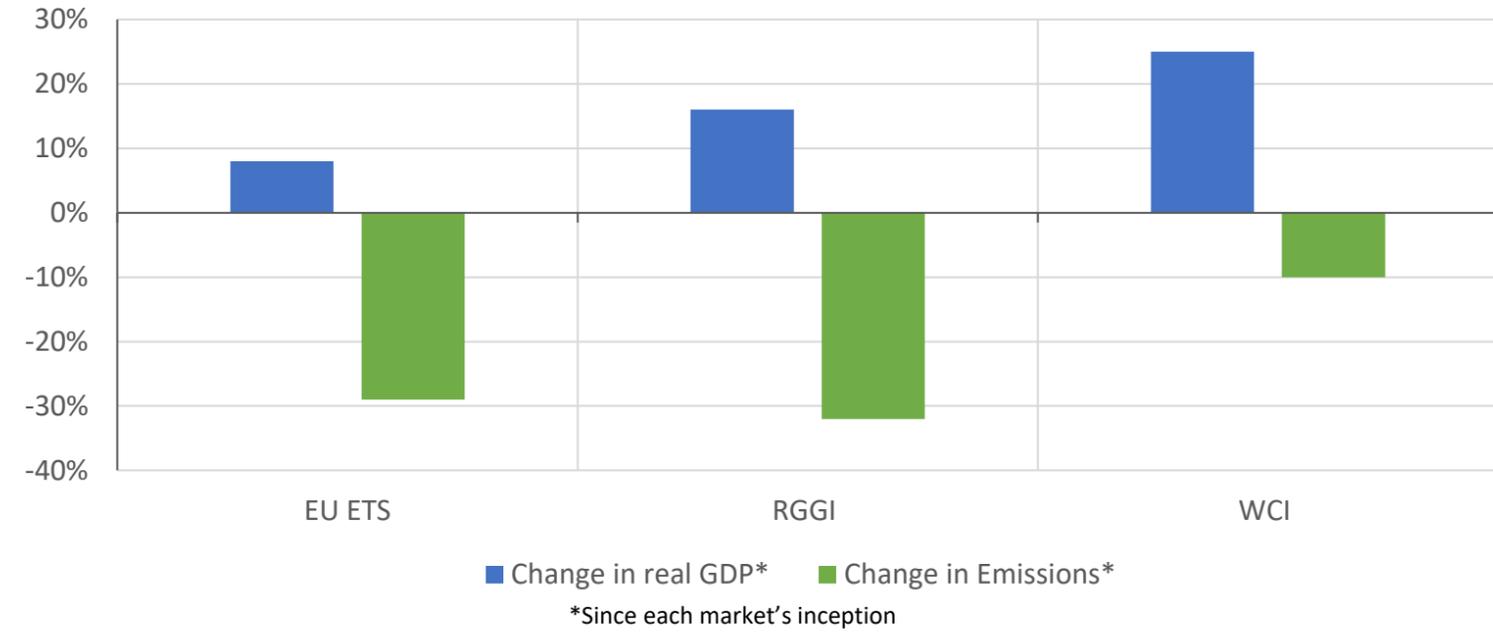


# Emissions Trading Systems have been successful in reducing emissions



Emissions Trading Systems have driven emissions reductions without negatively impacting GDP

Change in emissions and real GDP in carbon markets (Inception – 2019)



Emissions decoupling from growth, with California emissions per unit of GDP reduced by 22% over 2012-17

California  
Quebec



RGGI States  
States potentially joining RGGI



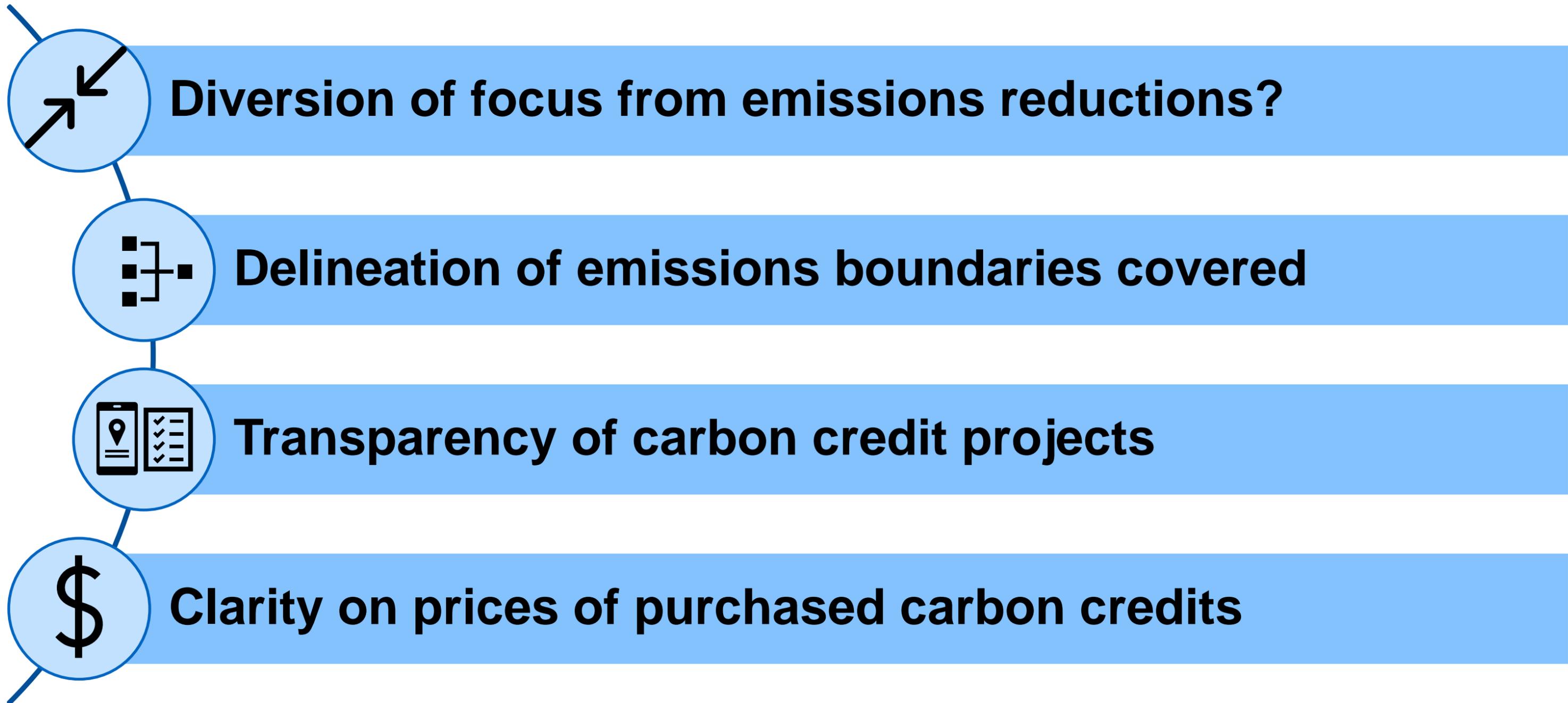
RGGI states electricity prices have increased by 9% less than Non-RGGI states over 2009-18

EU ETS

Coal-fired power generation down 47% in Europe over 2012-19



# 'Carbon Neutral' LNG requires careful consideration of key issues



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