

The Energy Mix

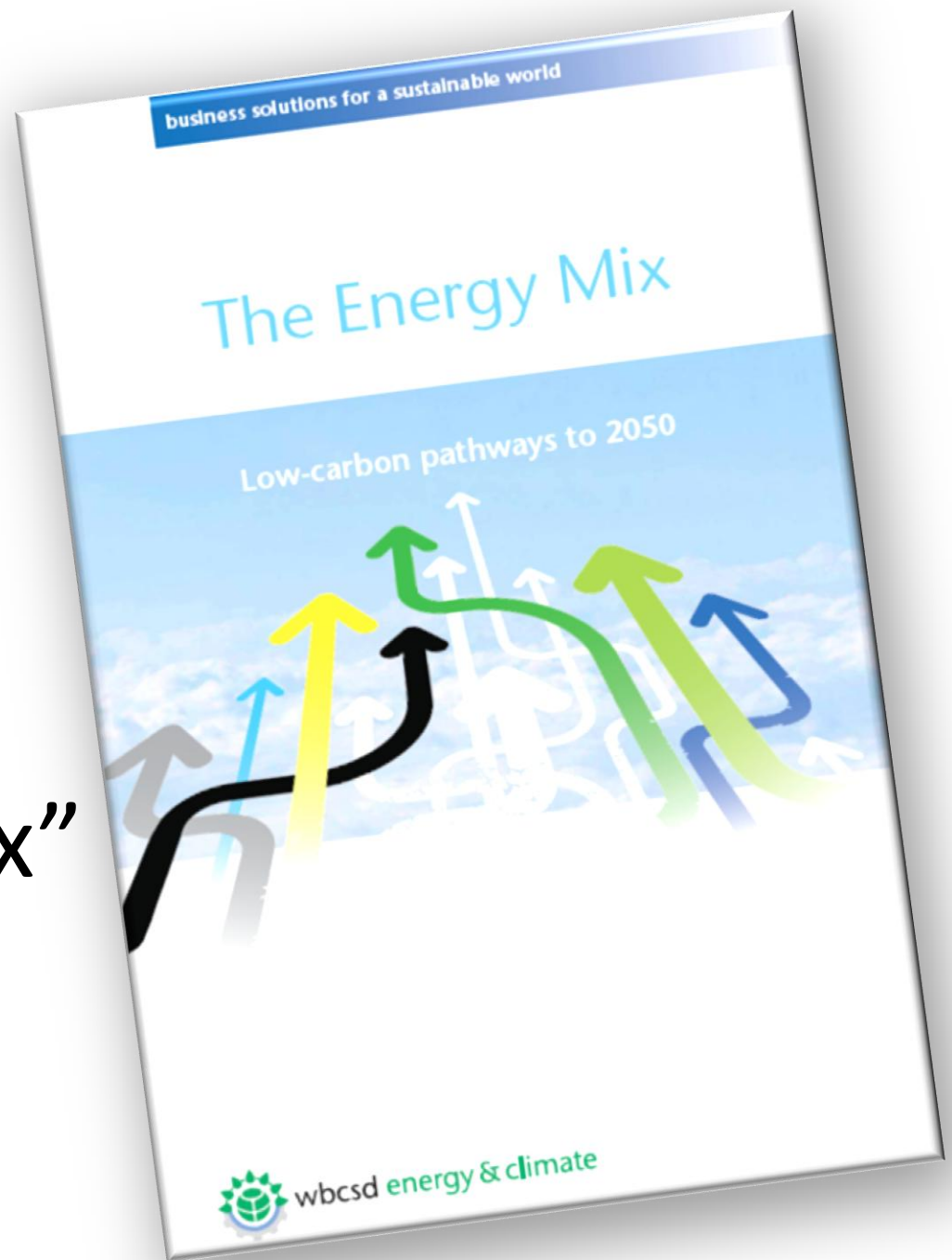
Low carbon pathways to 2050



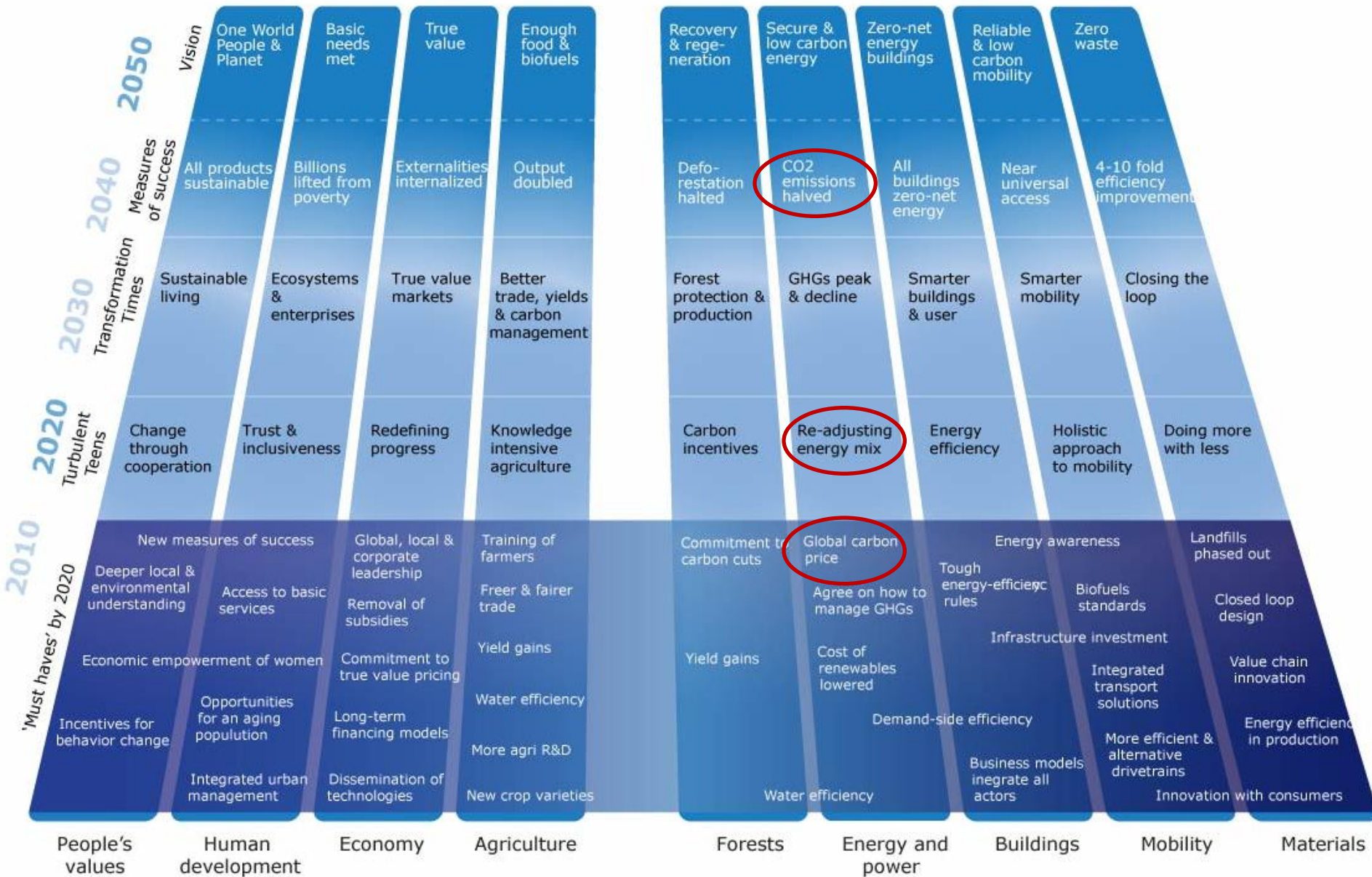
wbcscd

business solutions for a sustainable world

Introducing “The Energy Mix”



9 billion living well within the limits of one planet

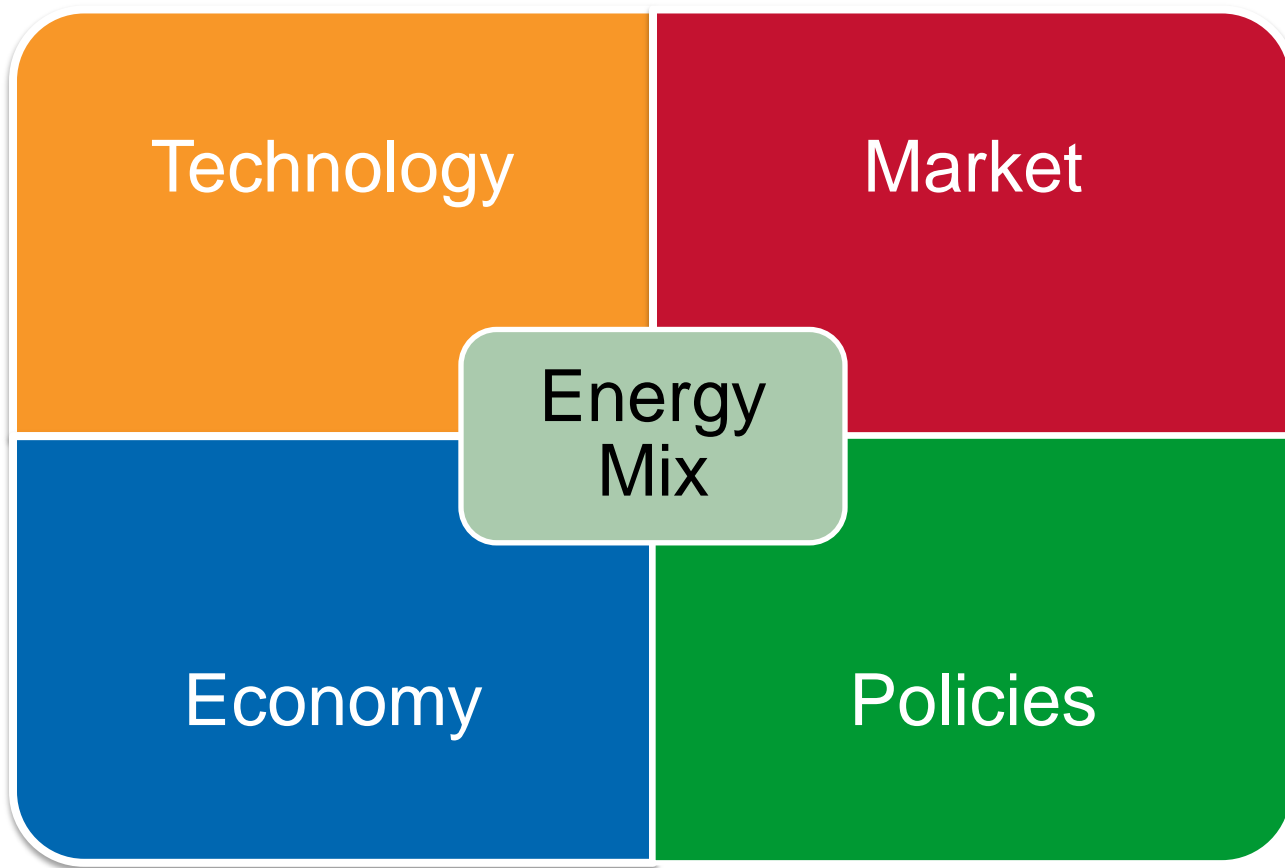


From business-as-usual

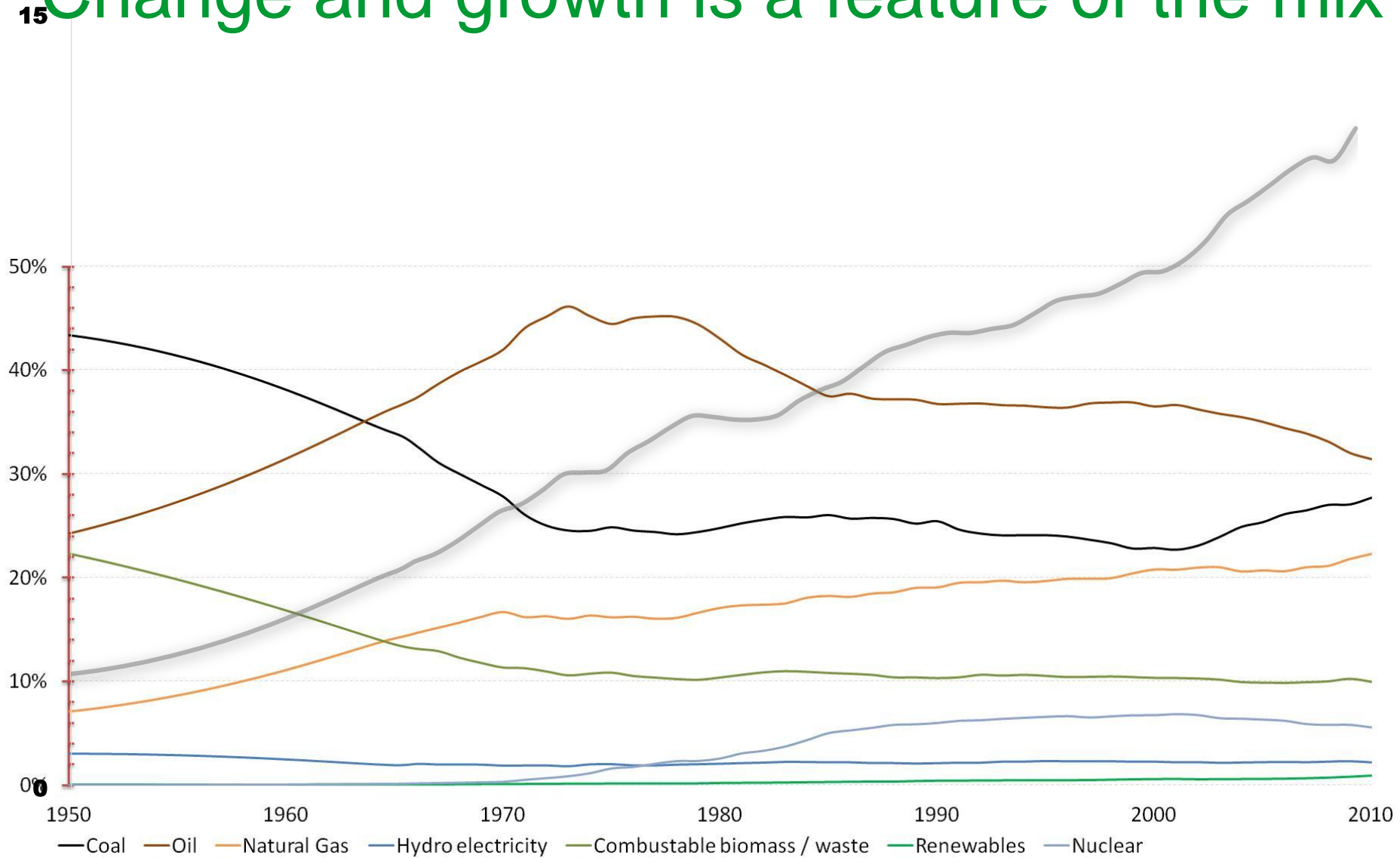
Today the energy mix is attracting more attention than ever before

building carbon change climate co2 coal cost countries demand deployment
development economy electric emissions energy forest framework
fuel gas generation global growth gt impact increase infrastructure investment level long-term market mix
natural needed nuclear oil per policy power price public reduce reduction
renewable sector support technology transport trillion wind world

The energy mix is the result of a number of influencing mechanisms



Change and growth is a feature of the mix



But a major constraint is looming

One trillion tonnes
of carbon emitted



. . . over half full today.

Starting in 1750

... which we are currently ignoring

Sometime in 2045

About
2 trillion
tonnes in
2100 at
1% p.a.
increase

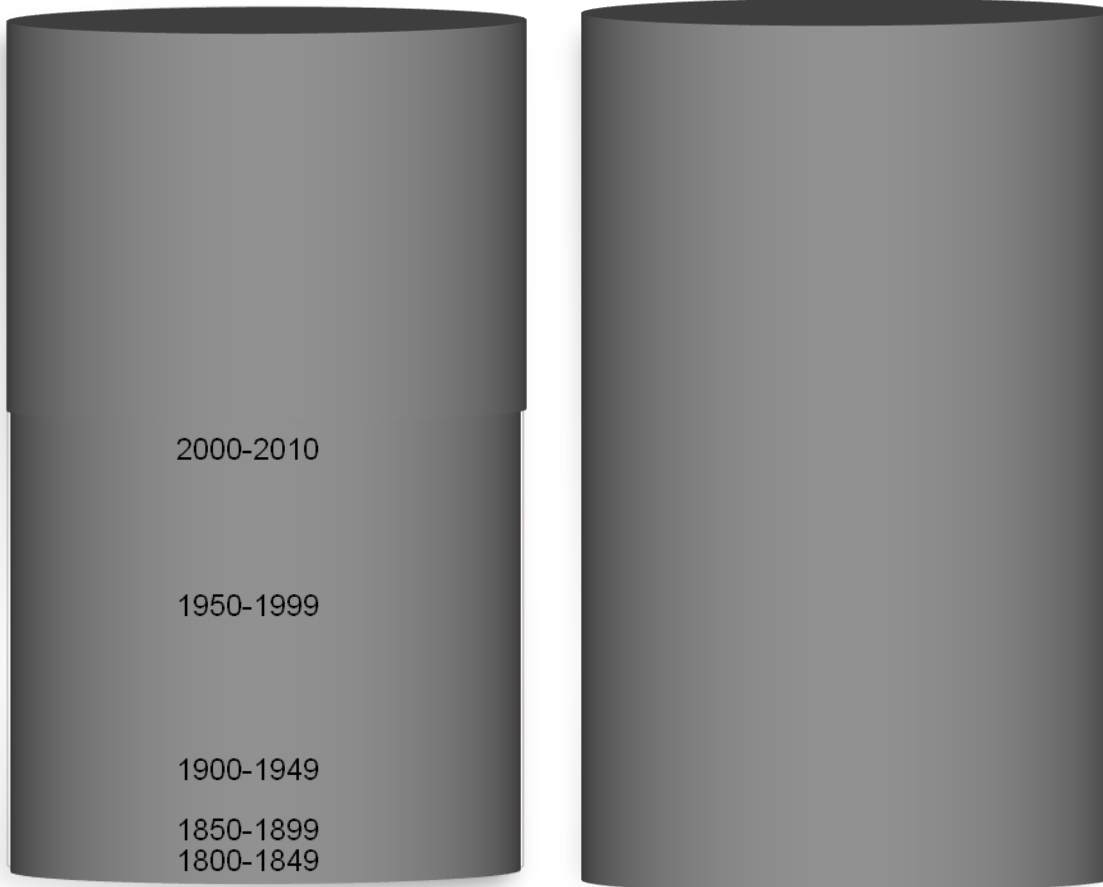
2000-2010

1950-1999

1900-1949

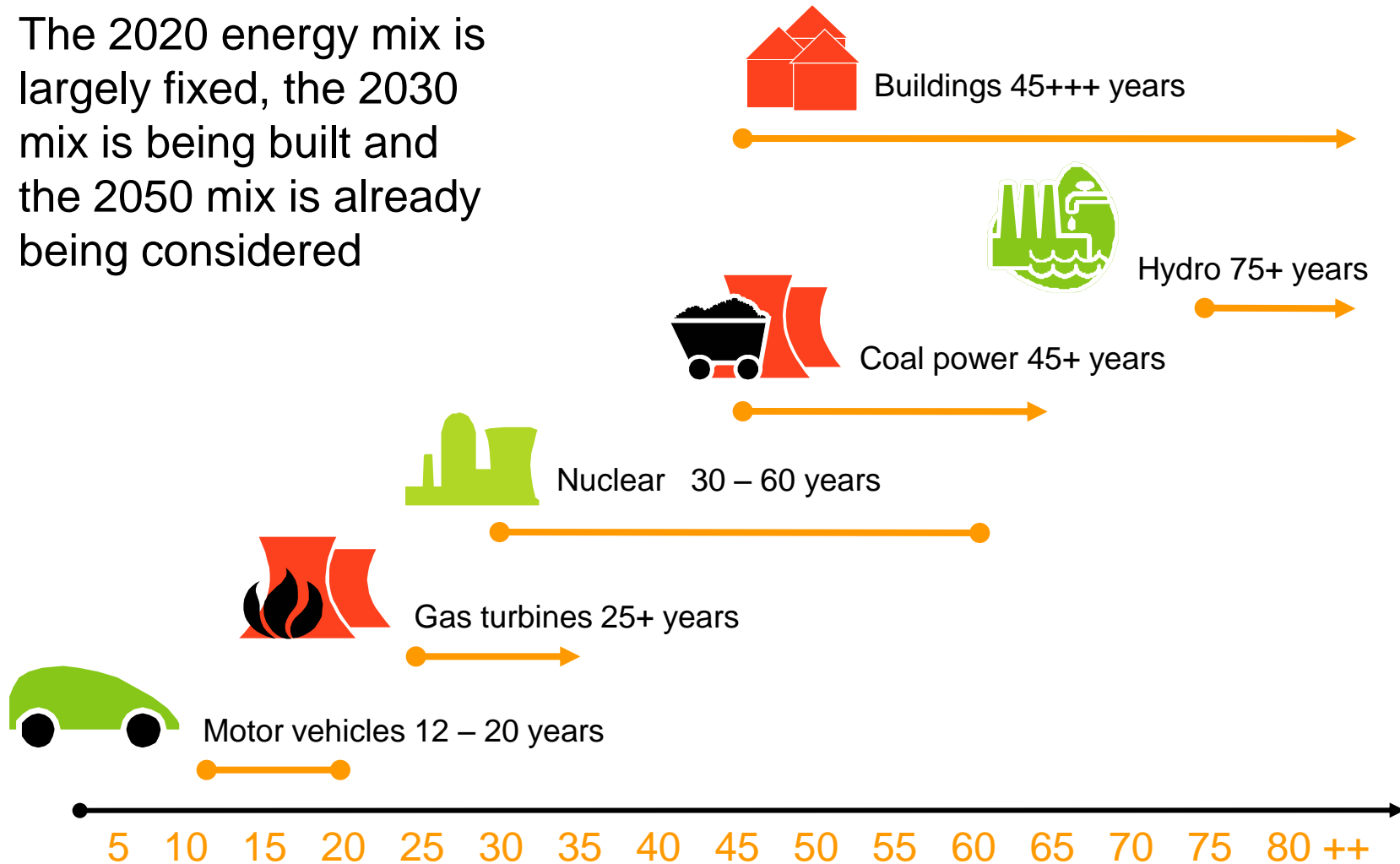
1850-1899
1800-1849

Starting in 1750

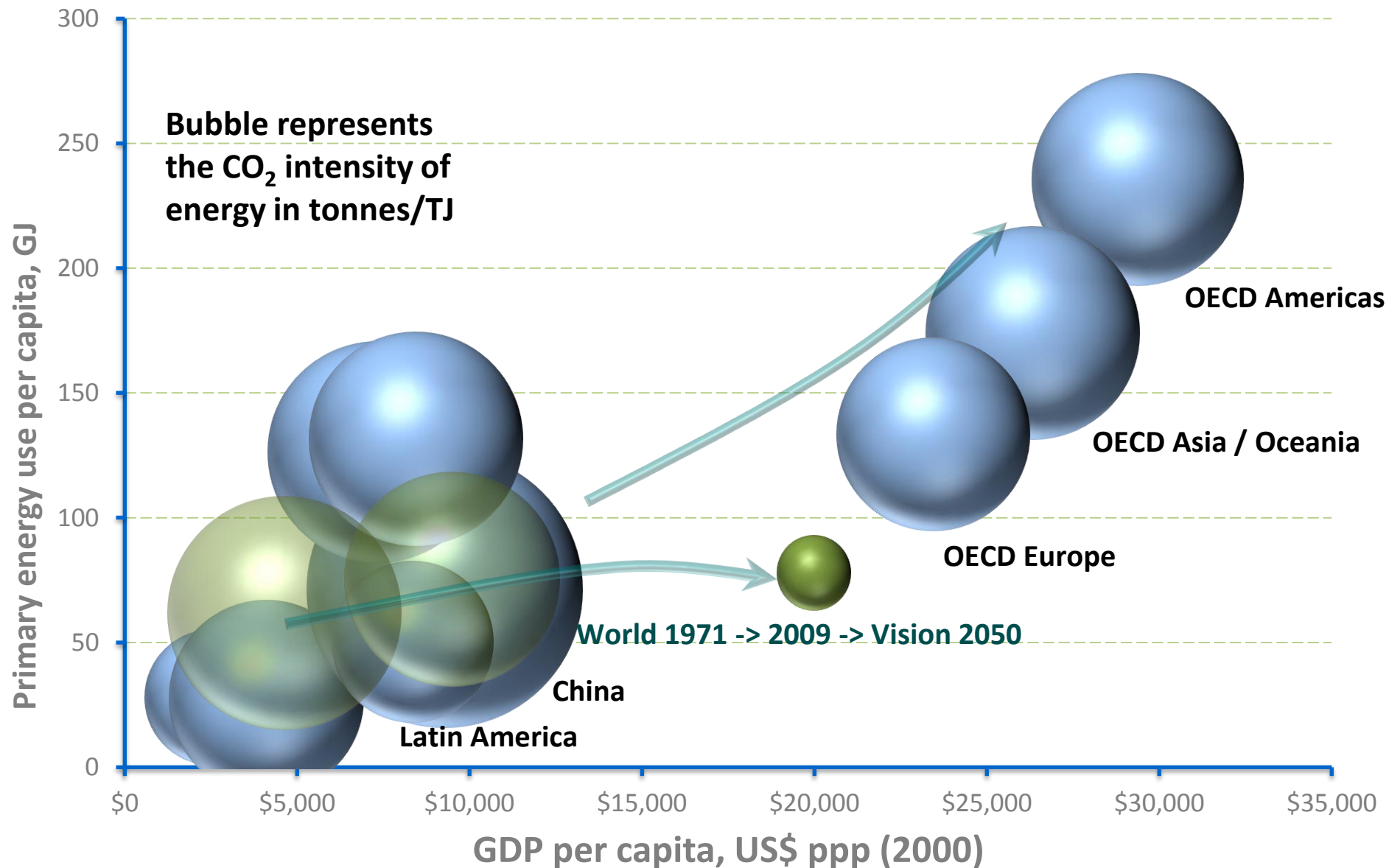


There is a significant risk of lock-in

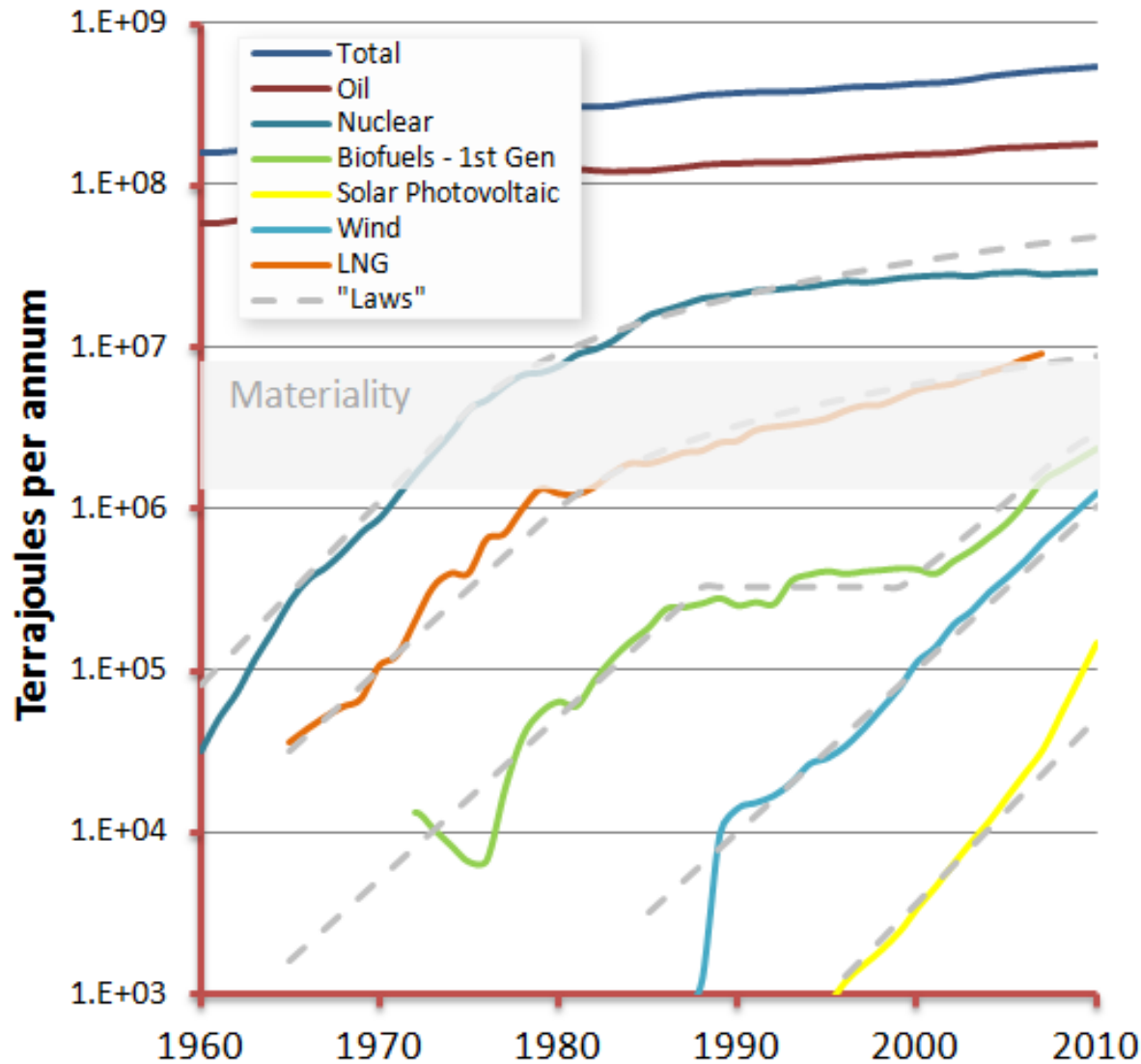
The 2020 energy mix is largely fixed, the 2030 mix is being built and the 2050 mix is already being considered



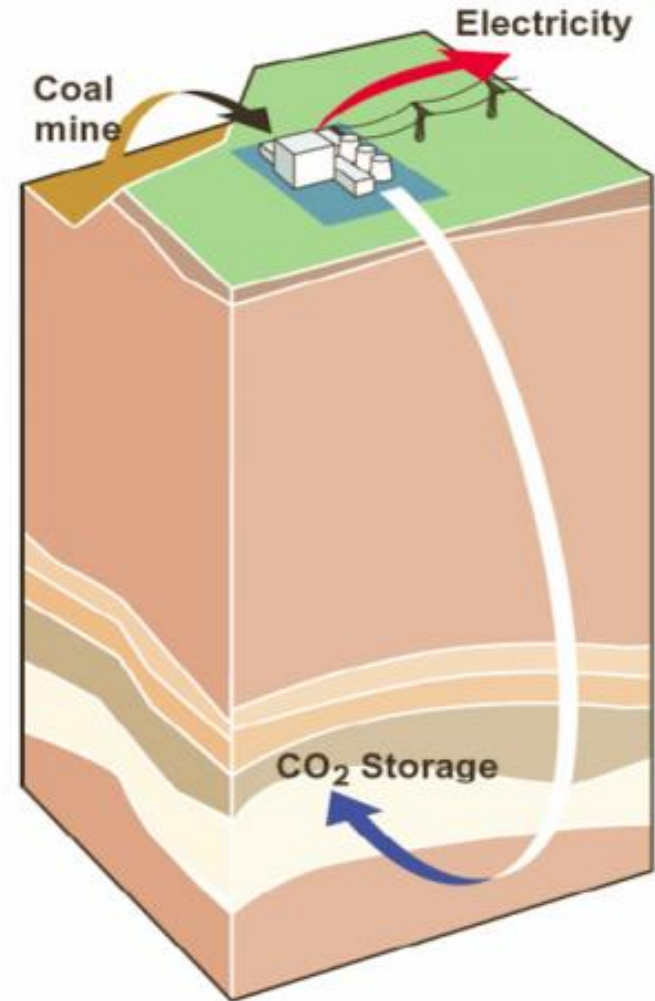
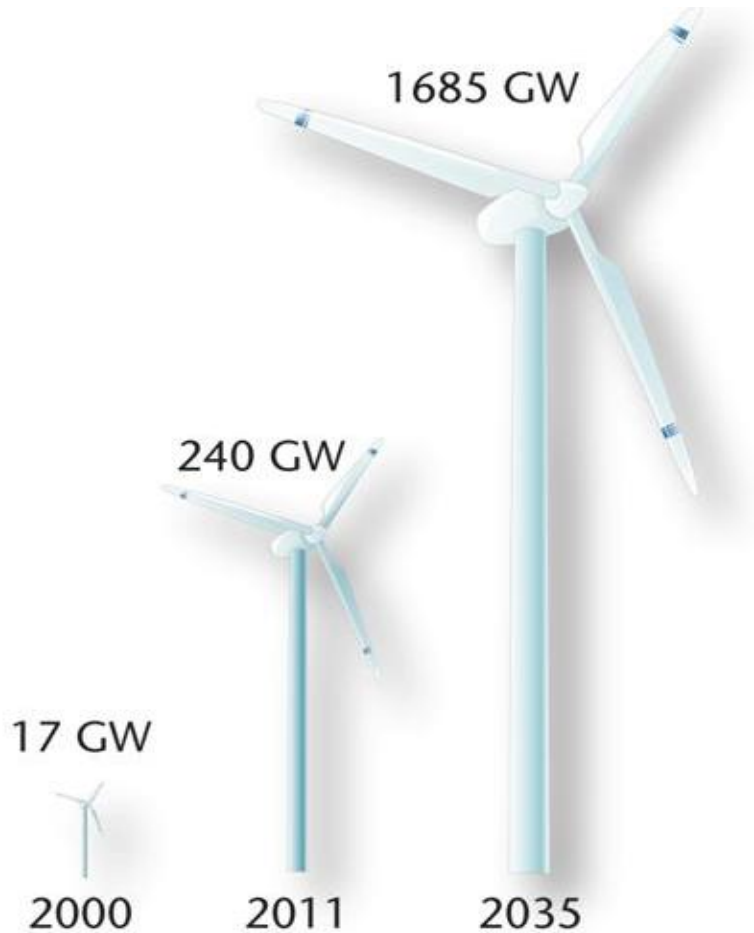
A New Pathway to 2050



The timing challenge is significant



Technology will be critical



End-user behaviour will be crucial

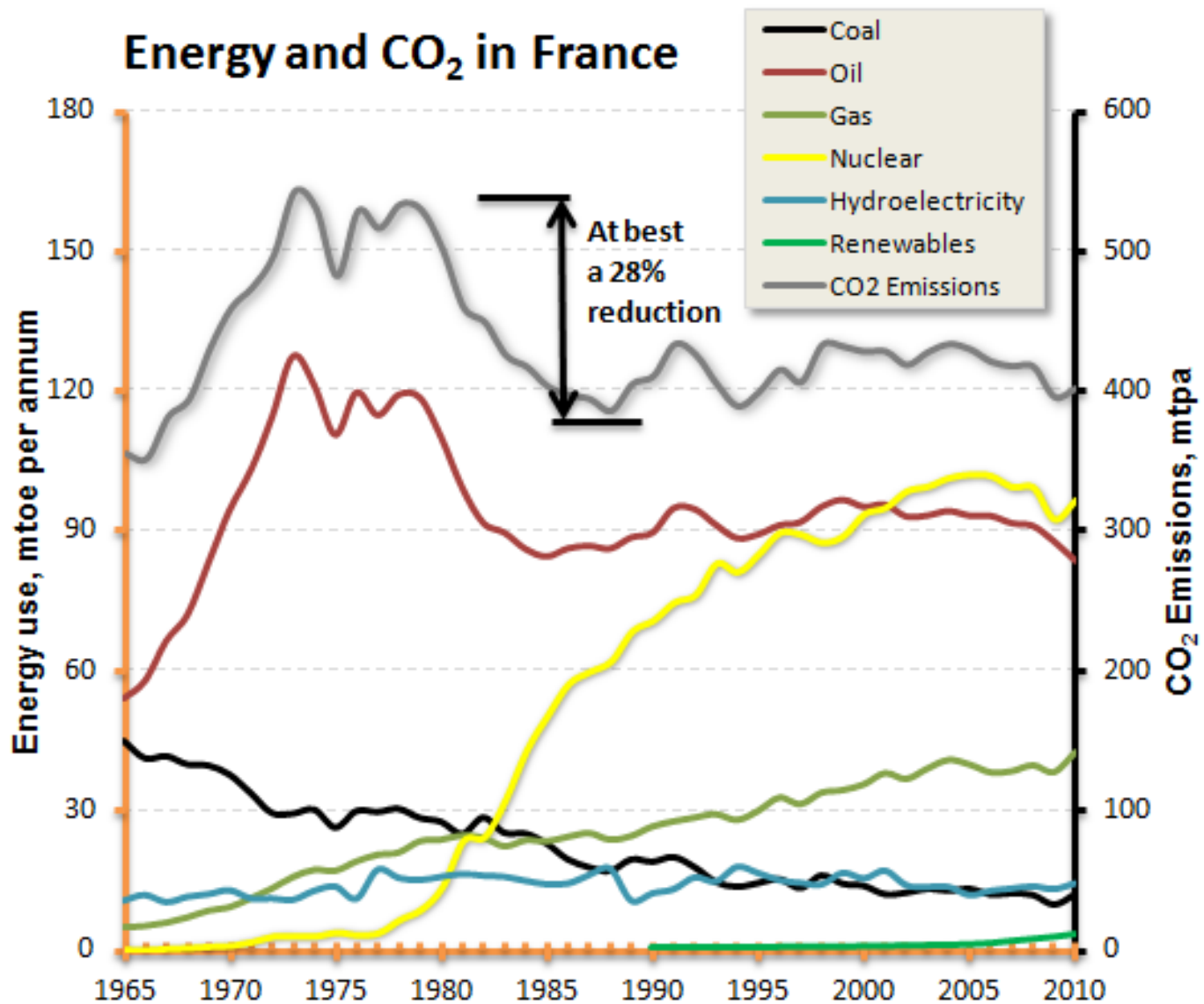
Energy Efficiency in Buildings





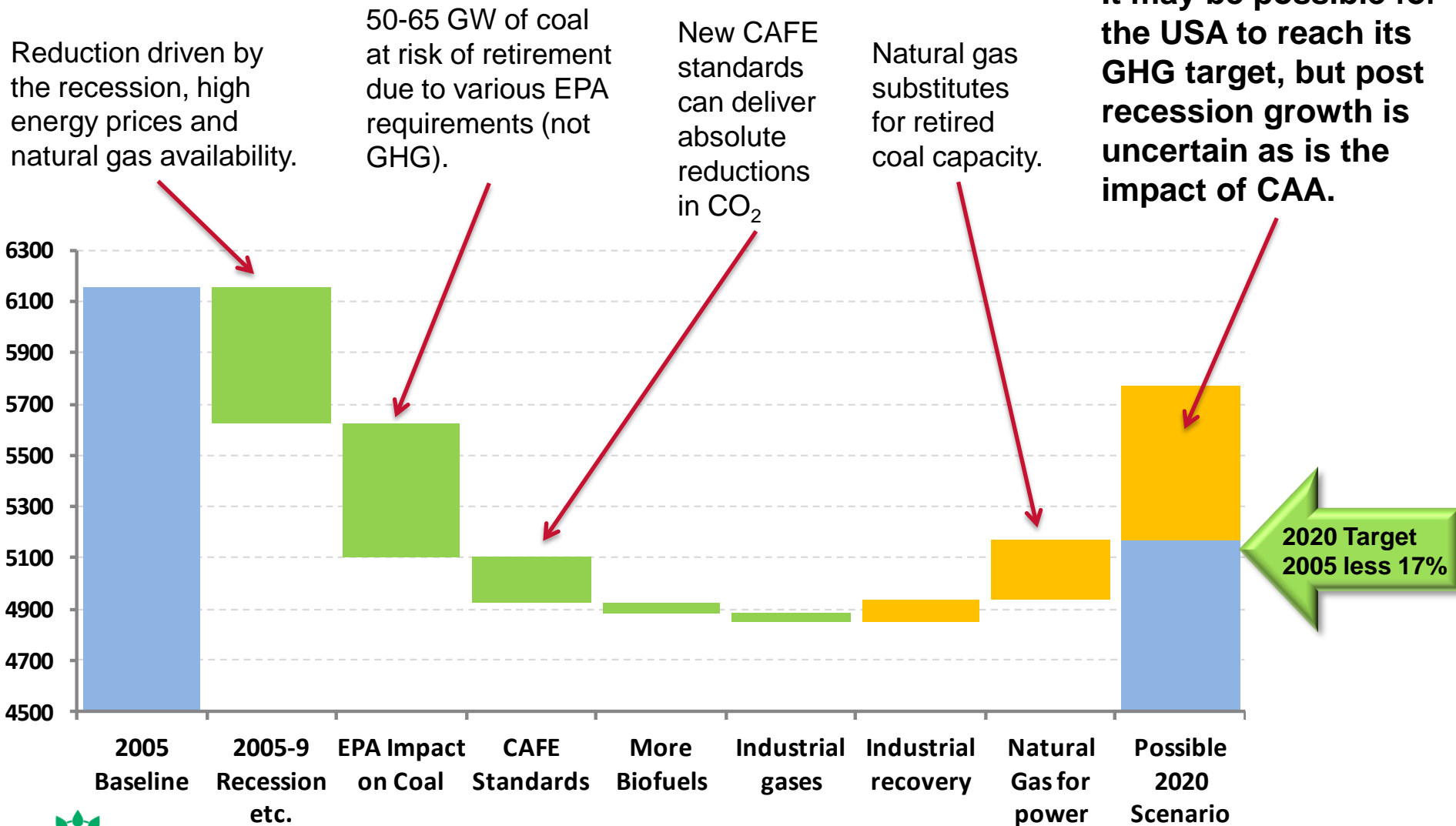
The influence of the
energy mix is best viewed
at a national level

France has made radical changes



Radical changes are underway in the USA

It may be possible for the USA to reach its **GHG target**, but **post recession growth is uncertain** as is the **impact of CAA**.

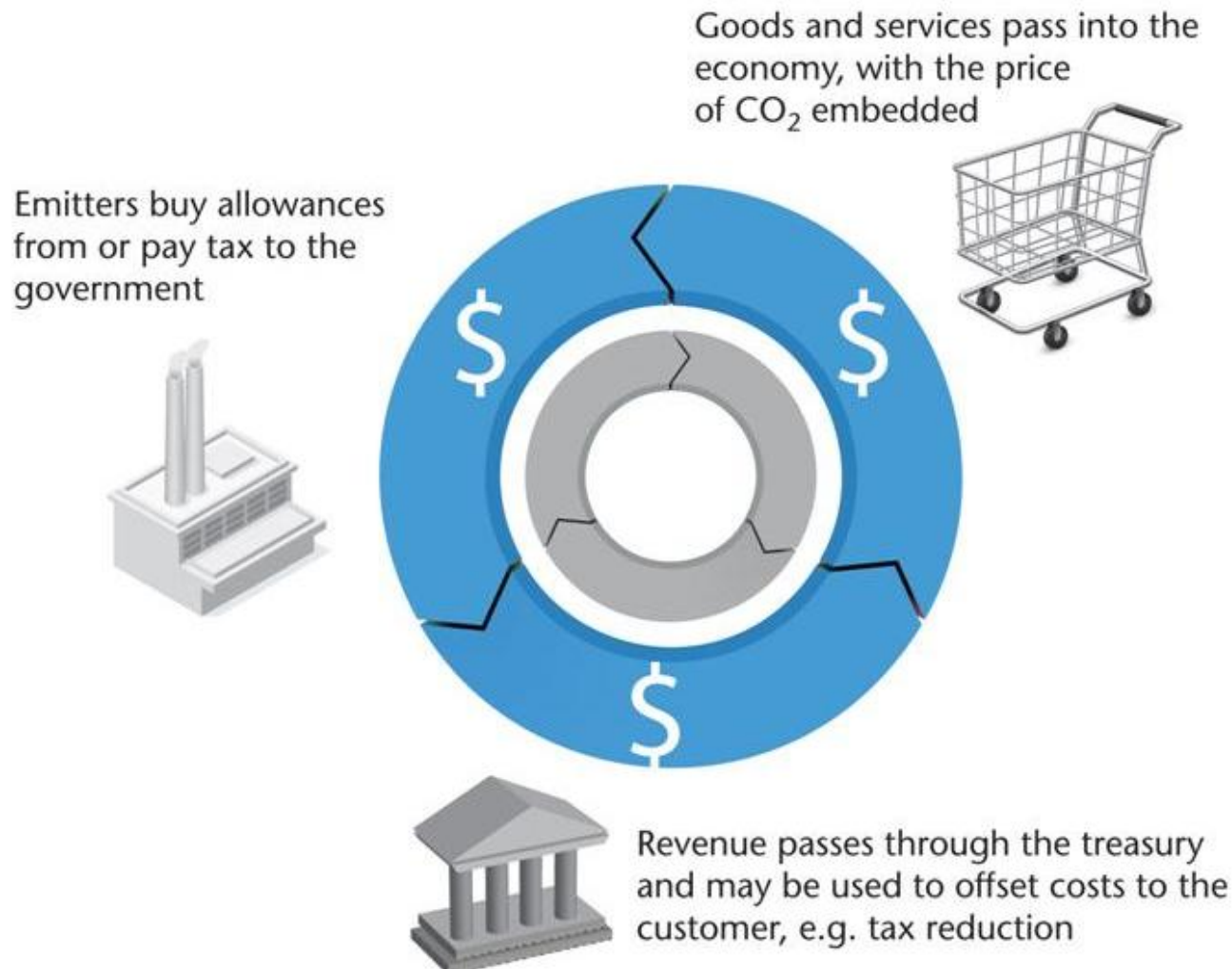


A clear, unambiguous and well structured energy policy framework is needed

- Include a **transition period** aligned with the long-term design
- Need significant **financial incentives** and regulatory support
- **Early goal** of commercial-scale **demonstration** for some technologies;
- Allow **all technology** options
- Deliver substantial improvements in **energy efficiency**
- **Balance** security, affordability and environmental;
- Build **public support** for new energy infrastructure

Carbon pricing has a critical role

A global carbon price needs to be in the range US\$100 - 200 per ton of CO₂ to have a substantial impact



A structured policy framework is needed

	Power Generation / Industry & Manufacturing	Transport	Commercial & Domestic (Buildings)
Research & Development			
Demonstrate			
Deploy			

A structured policy framework is needed

	Power Generation / Industry & Manufacturing	Transport	Commercial & Domestic (Buildings)
Research & Development	<i>Broad R&D policy framework for energy production and use</i>		
Demonstrate	<i>Direct support for limited large-scale programs</i>	<i>Early infrastructure networks in key locations</i>	<i>Radical design in buildings, e.g. through competitions</i>
Deploy	<i>Carbon price delivered through a cap, taxes or performance standards</i>	<ul style="list-style-type: none"> <i>Carbon price impacts the fuel mix</i> <i>Vehicle efficiency standards</i> 	<i>Efficiency standards for buildings, appliances etc.</i>

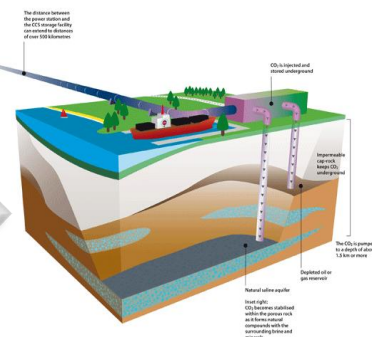
The shift required for an effective post 2020 international framework



From micro-finance to
very large scale project financing



From small scale local projects to large
scale regional change



From billion dollar public funding to
trillion dollar carbon market financing



Conclusion

1. There is a significant risk of lock-in of the GHG emissions trajectory
2. An energy policy framework is required to secure a pathway to vision 2050 outcome
3. Carbon pricing has a critical role
4. The design of the policy framework has to be broad in scope and effective in its application through the economy

Thank you!

Please take a
copy with you

