



Department for Transport

Advanced fuels: Call for Evidence

Stakeholder workshop

15 January 2014

Structure of the workshop

- 10.40 Welcome
- 10.50 Overview of the call for evidence
- 11.00 Policy priorities
- 11.30 Which feedstocks to support?
- 12.00 Policy mechanisms
- 12.30 Concluding remarks

The call for evidence is a first-stage, evidence-gathering document.

We are keen to receive as much evidence as possible about advanced fuels. This data will feed into new policy development, so we value all contributions.

The call for evidence will run until **21 February**.

Structure of the call for evidence

1. Transport sectors
2. Feedstocks and fuels – what is ‘advanced’?
3. Policy mechanisms

Focus today is on parts two and three. Sectors are addressed in separate workshops.

Before discussing fuels and policy mechanisms, we need an assessment framework:

We have a number of things to consider as part of this policy. How should they be prioritised?

We propose (in no particular order):

1. Cost to industry/consumers/government
2. Greenhouse gas emission savings
3. Non-carbon impacts (eg on local environment or food prices)
4. Development of technology
5. Energy security
6. UK jobs and IP contributing to economic growth

Questions for discussion

What is an acceptable cost increase, and to whom?

Should we promote domestic businesses/manufacturers, or work EU-wide?

What should be our attitude to foreign investment and intellectual property?

How to determine support?

In the call for evidence we define 'advanced' as **innovative and low-carbon**.

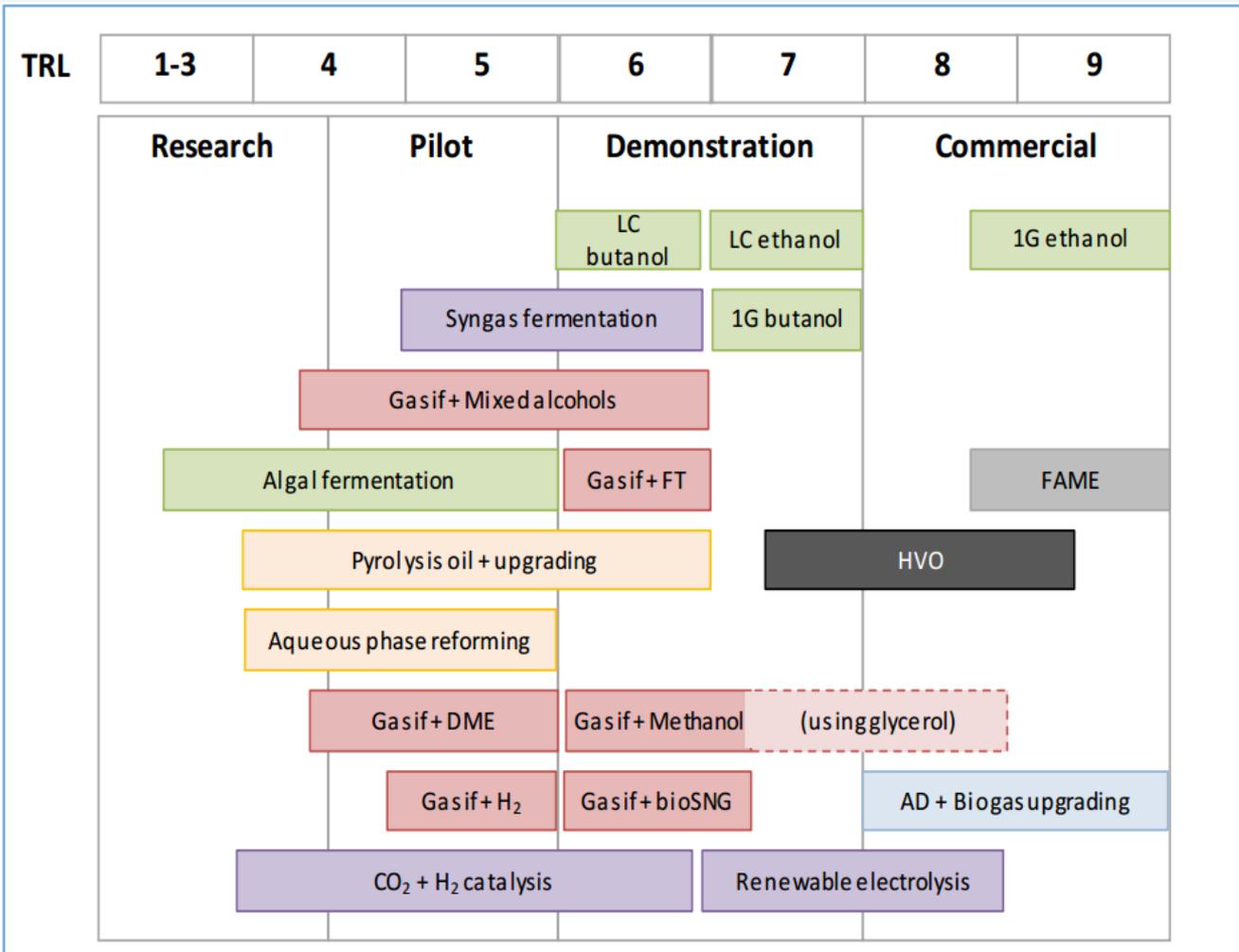
E4Tech's feedstock report researched the sustainability of the Annex IX feedstocks, which defined advanced fuels by **feedstock only**.

Should support for advanced fuels be dependent on:

- the feedstock;
- the technological process;
- or a combination?

Which technologies to support?

If we are concerned with innovative processes, how innovative do advanced fuels need to be? What level of technological maturity are we looking for?



Source: E4Tech 2013, "Advanced' biofuel feedstocks – an assessment of sustainability"

Which feedstocks to support?

In terms of feedstocks, ILUC is a key risk.

1. No biomass use
 2. Waste/residue only
 3. Managed forestry
 4. Energy crops
 5. Crop ethanol
 6. All biofuels
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- Lower ILUC risk
- Greater ILUC risk



What is the appropriate level of ILUC risk that we should accept for an advanced mechanism?

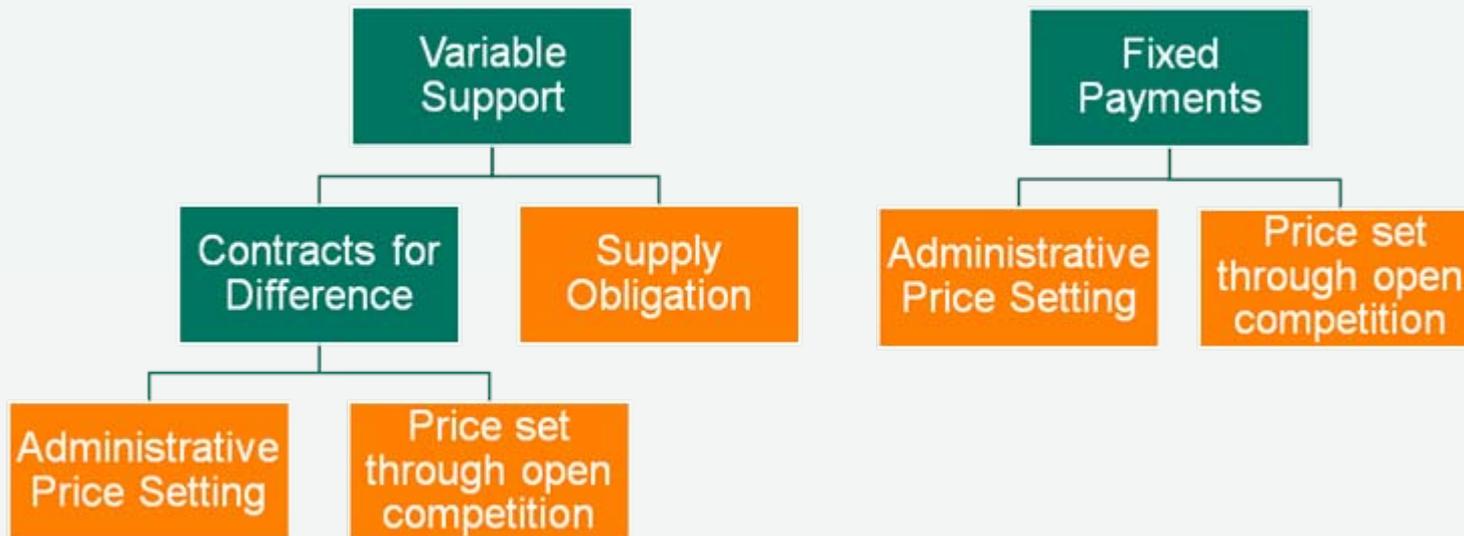
As well as ILUC, what about other local environmental impacts? Should there be minimum direct GHG savings?

Which feedstocks to support?

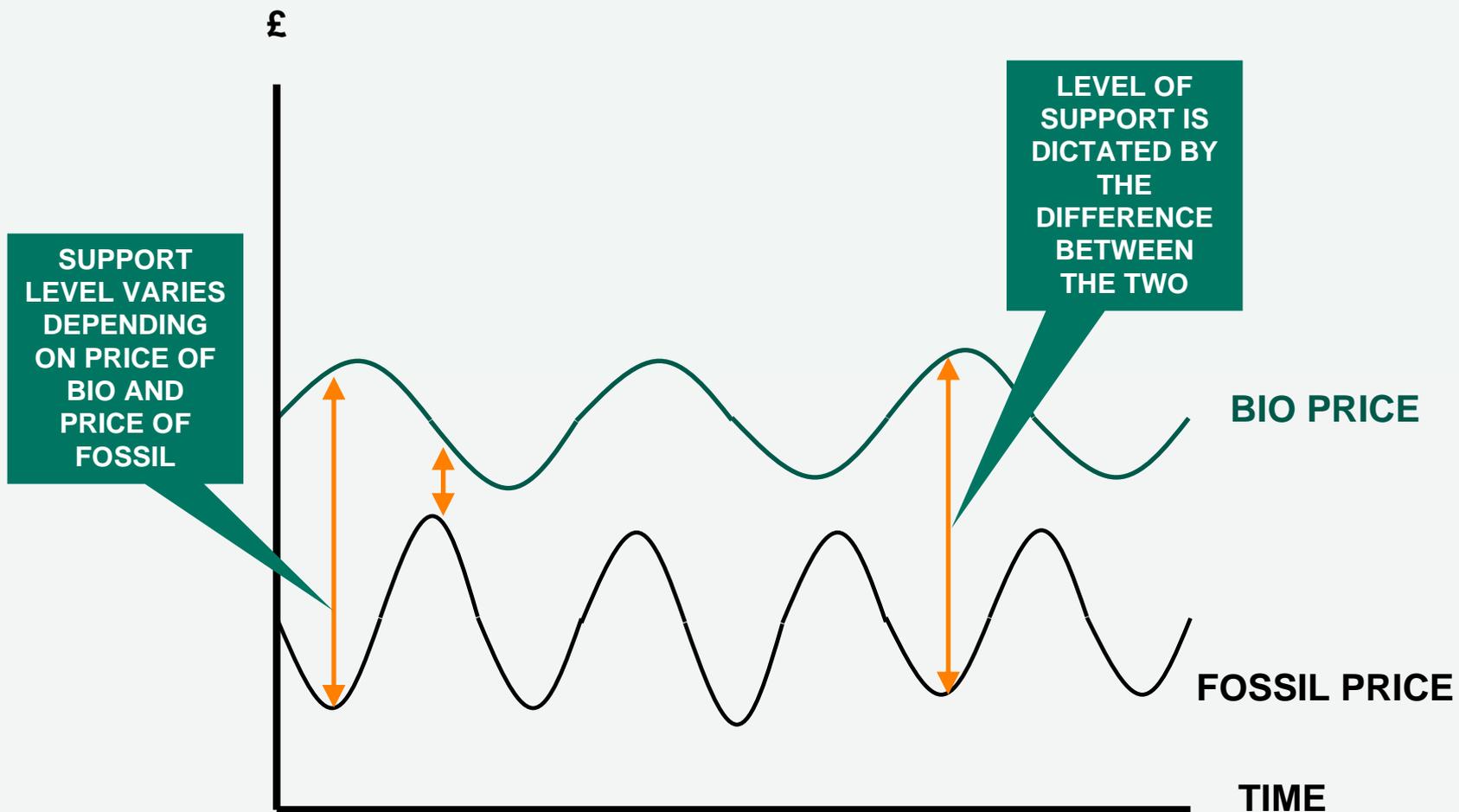
Fuels within an advanced support mechanism will compete only on price, so it is important to agree which fuels are eligible. What should be inside the circle?

Biofuels	Fuels from fossil waste	Hydrogen based fuels
Fuels from organic wastes and residues	Fuels from fossil plastics	Fuels from electrolysis using renewable electricity
Fuels from energy crops	Fuels from waste industrial gases	Hydrogen from grid electricity
Fuels from forestry		Hydrogen from natural gas
Fuels from food crops		
Fuels from algae		

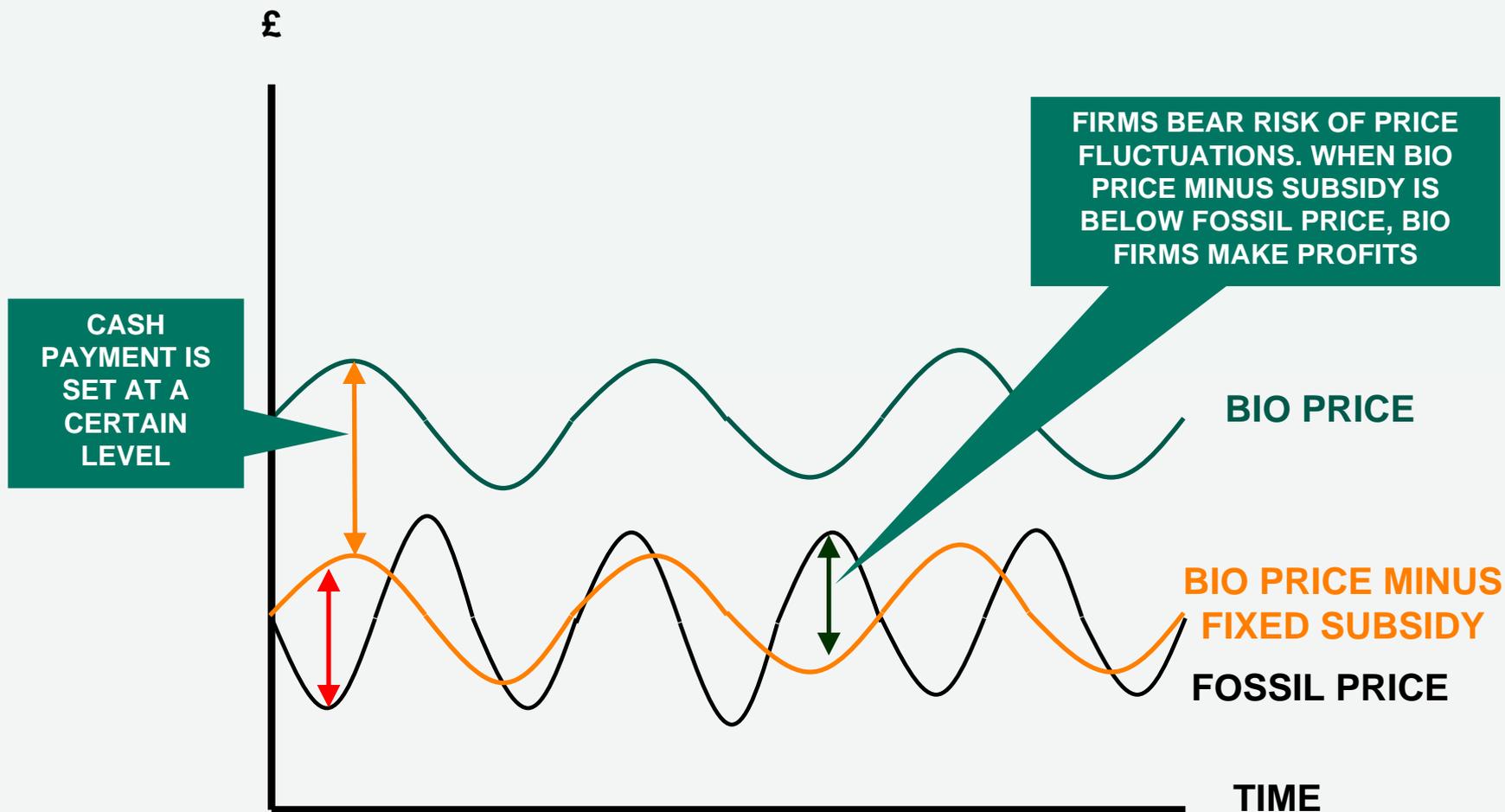
Different Forms of Renewable Energy Support



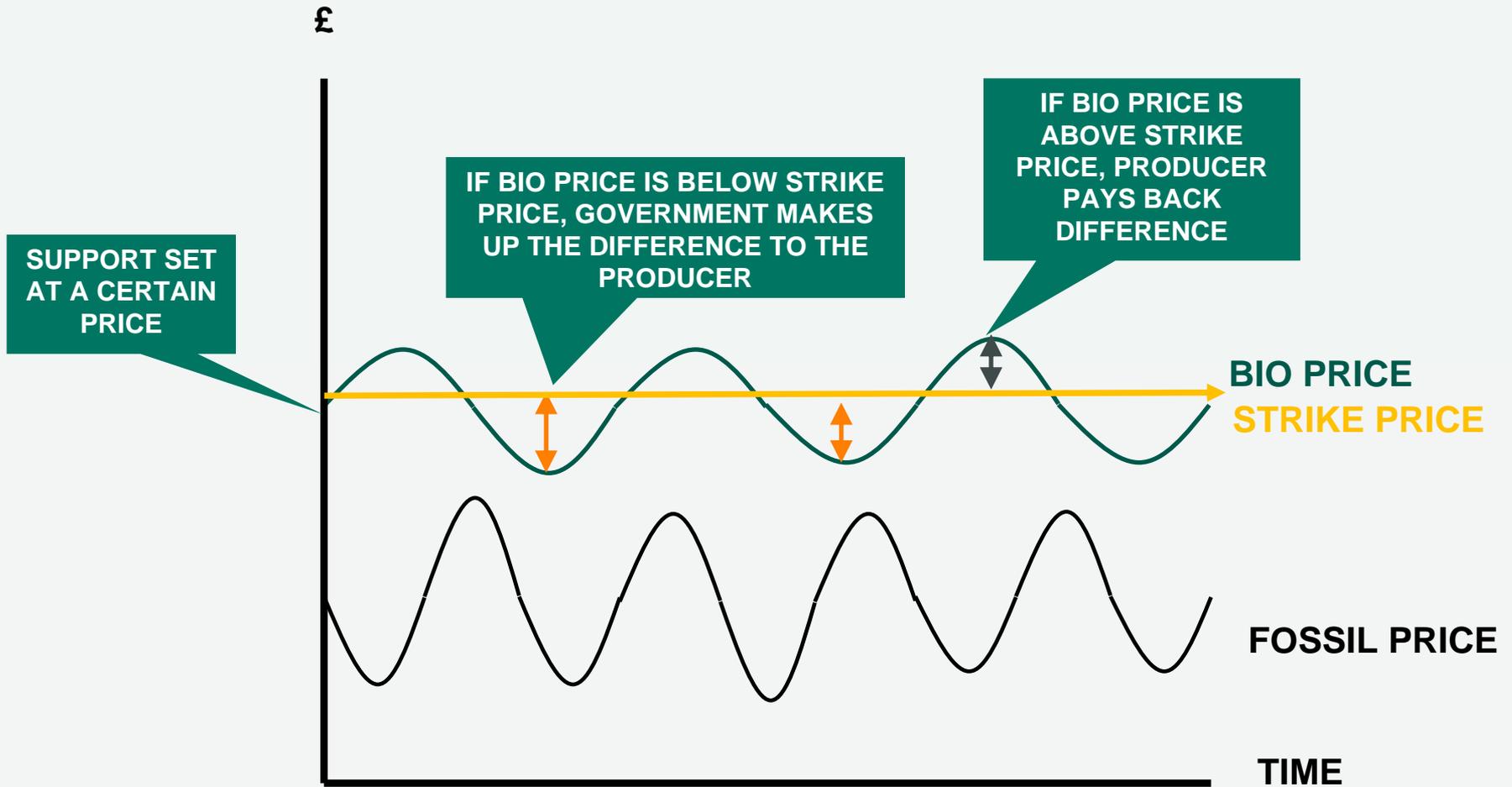
Supply Obligation



Fixed Price Payments



Contracts for Difference



What are the different kinds of renewable energy support scheme available?

		A Undifferentiated support	B Support differentiated by technology	C Support differentiated by feedstock	D Support differentiated by both technology and feedstock	
1 Fixed Payments	<i>(i) Administrative price setting</i>		<ul style="list-style-type: none"> • Renewable Heat Incentive • Feed-in tariffs 			
	<i>(ii) Price set through open competition</i>		<ul style="list-style-type: none"> • UK non-fossil fuel obligation 			
2 Variable Support	<i>(i) Supply Obligation</i>		<ul style="list-style-type: none"> • Unbanded Renewables Obligation • Pre-2011 RTFO 	<ul style="list-style-type: none"> • Banded Renewables Obligation 	<ul style="list-style-type: none"> • Post-2011 RTFO (with double counting) • Renewable Fuel Standard (US) • Potential advanced feedstocks sub target 	<ul style="list-style-type: none"> • Low Carbon Fuel Standard (California) • Potential GHG based RTFO
	<i>(ii) Contracts for Difference</i>	<i>(a) Administrative price setting</i>		<ul style="list-style-type: none"> • 1st phase Electricity Market Reform (pre-2017) 		
		<i>(b) Price set through open competition</i>		<ul style="list-style-type: none"> • 2nd phase Electricity Market Reform (post-2017) 	<ul style="list-style-type: none"> • 3rd phase Electricity Market Reform (post-2024) 	

Policy priorities determine preferred policy

- Each scheme will drive different outcomes. Different support schemes will be preferable depending on policy priorities.

Please choose either...

An obligation on suppliers

Putting the obligation on UK suppliers guarantees that the fuel will be used in the UK and count towards our EU targets.

An incentive for producers

Providing incentives for projects based in Britain ensures British jobs, but the fuel could be sold internationally.

Sustainable feedstocks

A system might provide additional support for the most sustainable feedstocks (eg, an obligation based on GHG savings)...

Technological innovation

...but this sustainability could come at the expense of the developing advanced technologies.

Guaranteed returns for investors

Fixed payments systems provide guaranteed support to investors...

Minimised costs for consumers

...but consumers or taxpayers still pay full price even if costs fall. Supply obligations ensure that energy is delivered at the lowest possible cost.

Choices must be made