



Personal Carbon Trading: An Overview

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Outline

- 1. Define personal carbon trading (PCT)**
- 2. Summarize place within policy debate**
- 3. Outline PCT**
- 4. Assess PCT**

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Definition

Personal carbon trading (PCT) schemes are...

***proposed* greenhouse gas emissions trading schemes**

under which

individuals are allocated some/all available emissions rights

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PCT and policy #1

Research

- Royal Society of Arts £0.5m research programme
- Research at Environmental Change Institute + ippr

Government

- PCT has “a simplicity and beauty”
- Defra completed pre-feasibility study

Parliament

- Call for evidence by EFRACOM and Env Audit Ctte

PCT and policy #2

Political parties

- Adopted as Green Party policy
- Awareness/discussion of PCT within 3 main parties
- Even discussed by British National Party!?!

Other

- Formation of carbon rationing action groups (CRAGs)

PCT now well known within the policy community

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2. Summarize place within policy debate
- 3. Outline PCT**
4. Assess PCT

A particular form of PCT...

- ...Domestic Tradable Quotas (DTQs)
- Proposed by David Fleming in 1996
- Since July 2003 assessed by Tyndall for
 - *feasibility*
 - *appropriateness*

What are DTQs?

- PCT scheme covering emissions from **energy use**
- Rights allocated to **end purchasers of fuel and electricity**
 - *individuals*
 - *firms*
 - *other organizations*

3 elements

- 1. Setting the carbon budget**
- 2. Allocating carbon units**
- 3. Surrendering carbon units**

3 elements

1. **Setting the carbon budget**

CAP

+

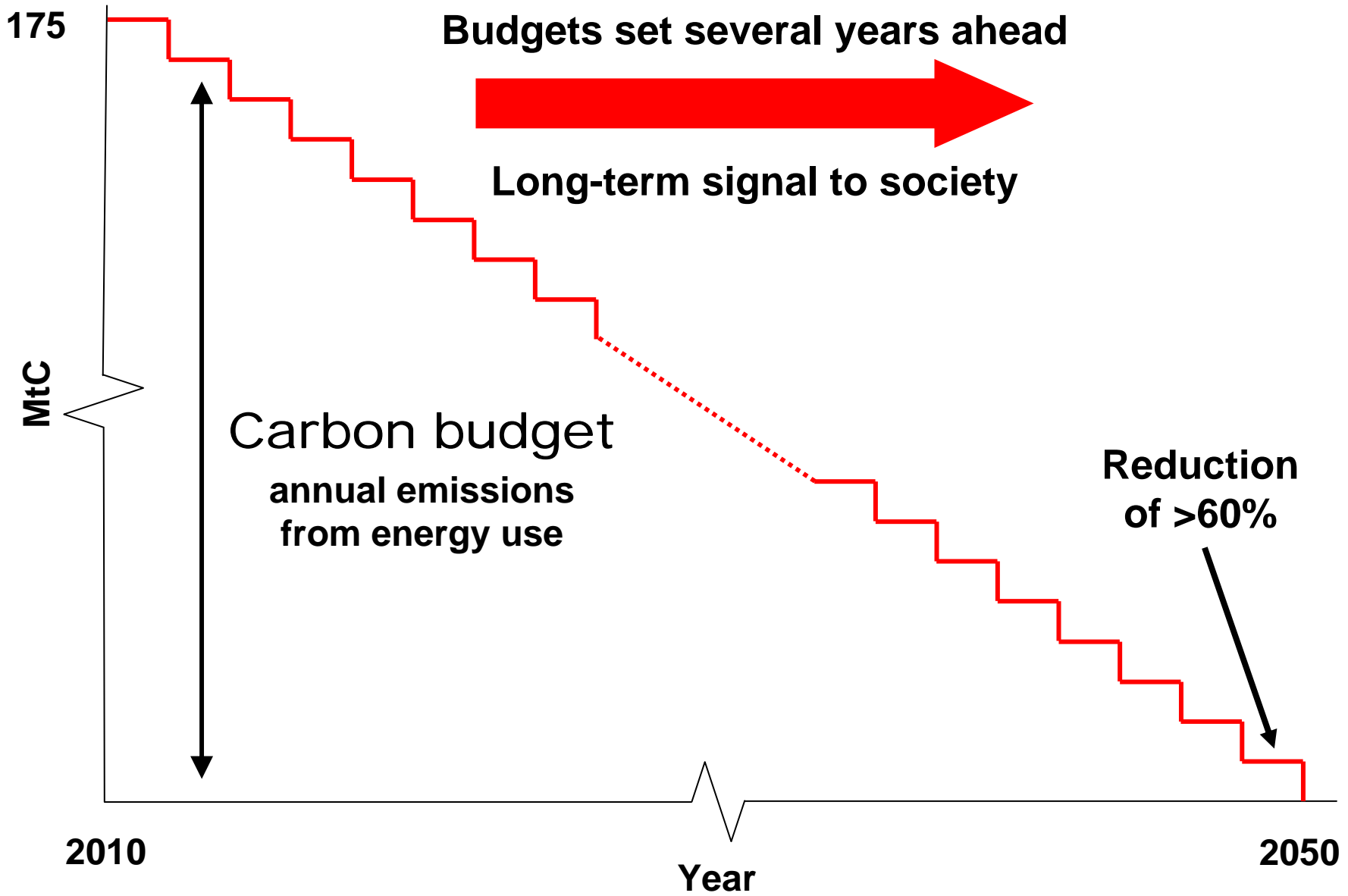
2. **Allocating carbon units**

TRADE

3. **Surrendering carbon units**

3 elements

1. **Setting the carbon budget**
2. Allocating carbon units
3. Surrendering carbon units



3 elements

1. **Setting the carbon budget**
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3 elements

1. Setting the carbon budget
2. **Allocating carbon units #1**
3. Surrendering carbon units

Carbon units

- Carbon units are **emissions rights**
- 1 carbon unit = right to emit 1kg CO₂ (equivalent)

How are carbon units allocated?

Carbon units equal to carbon budget divided between

ADULT INDIVIDUALS

and

ORGANIZATIONS

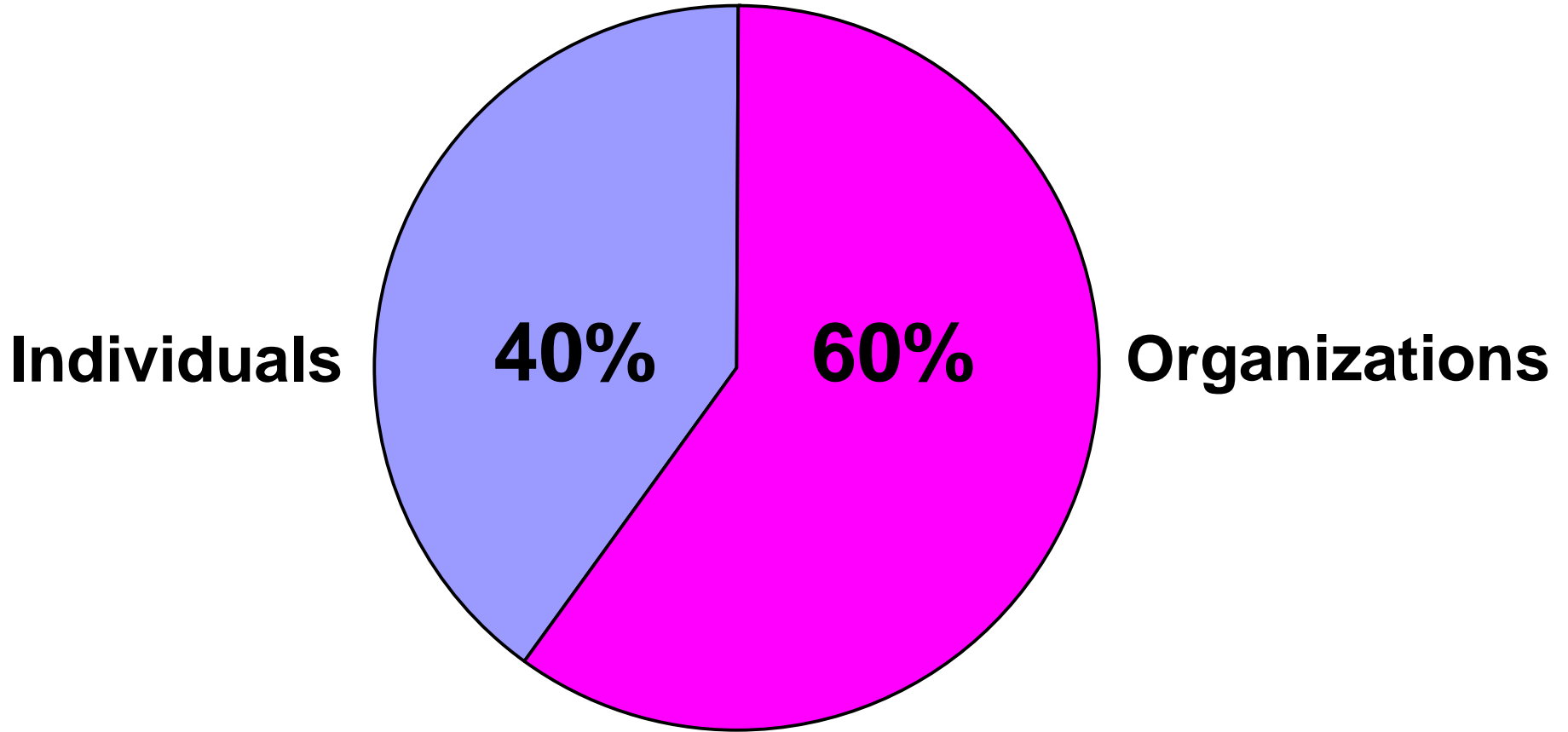
Individuals

% carbon units to individuals

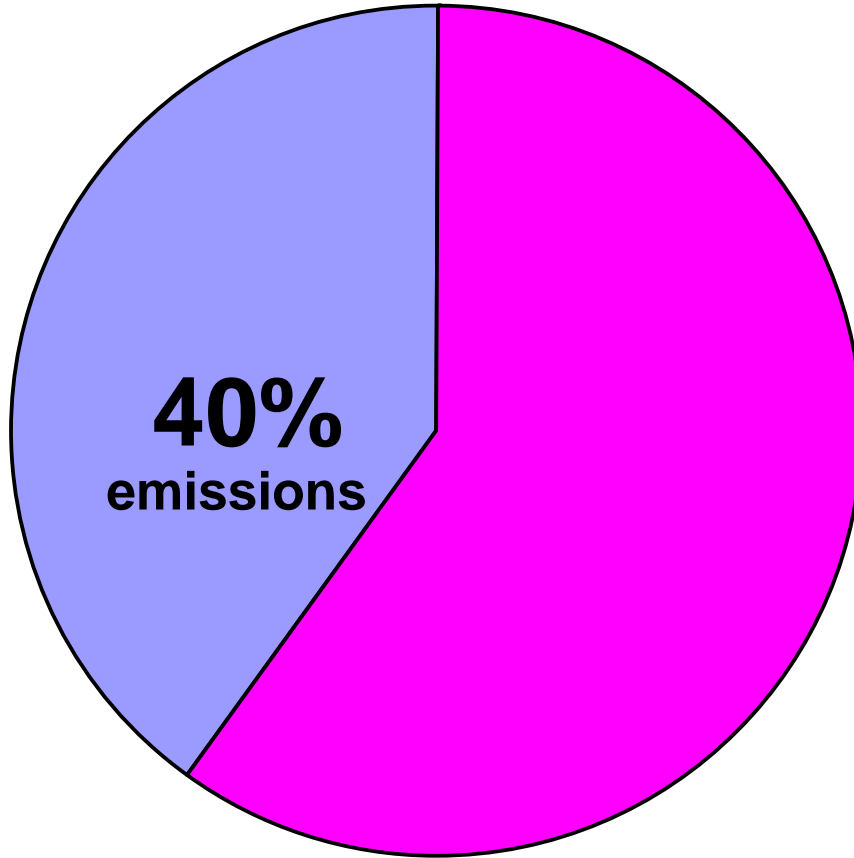
equal to

% energy emissions from their **fuel + electricity use**

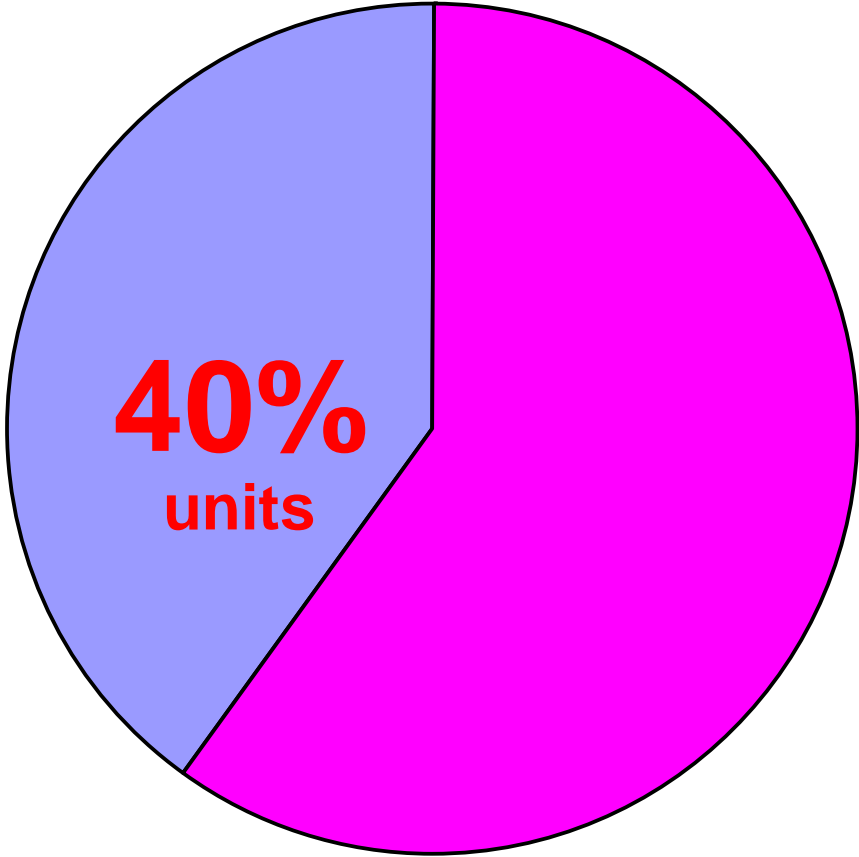
Energy emissions



Individuals



Individuals

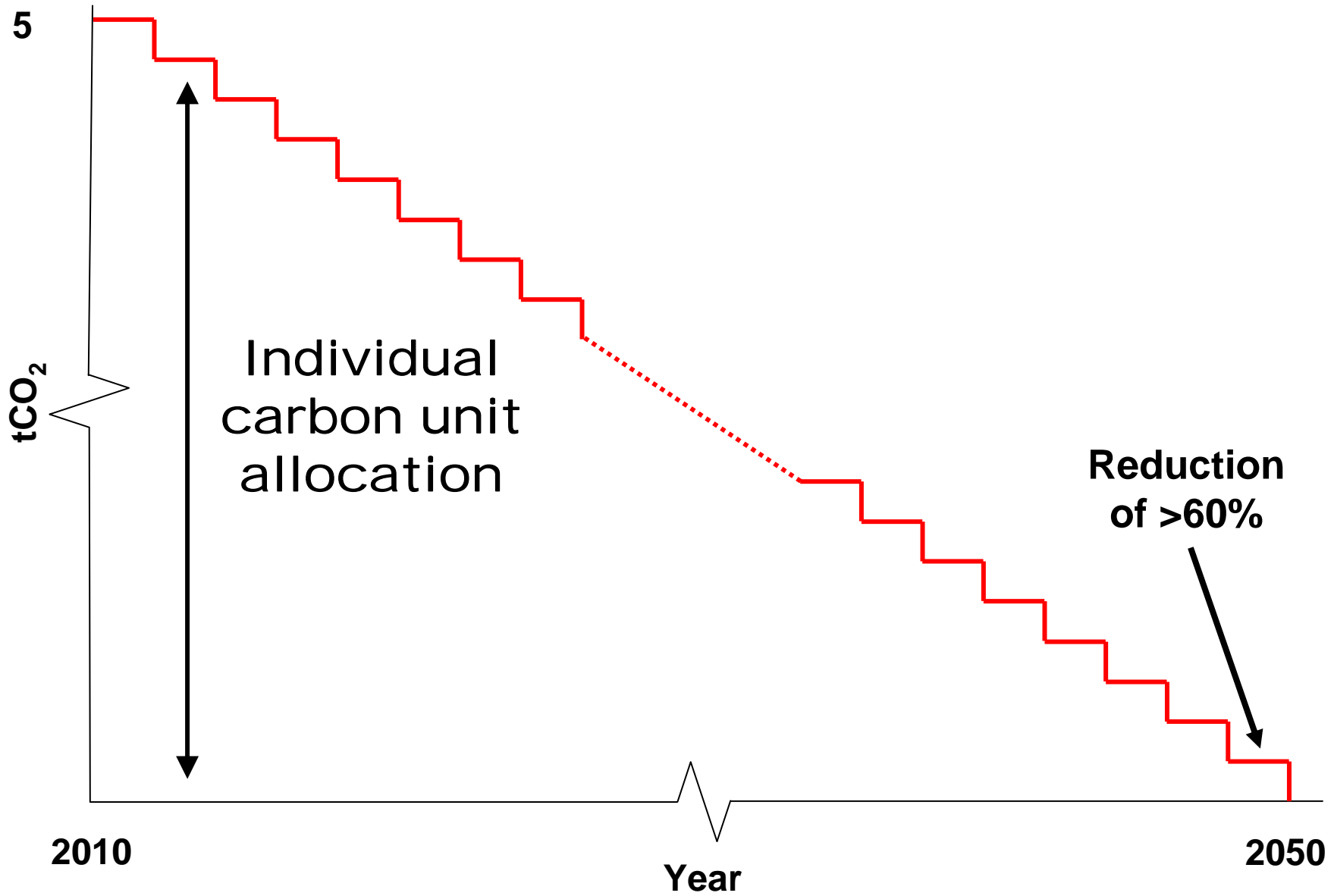


Free and on an

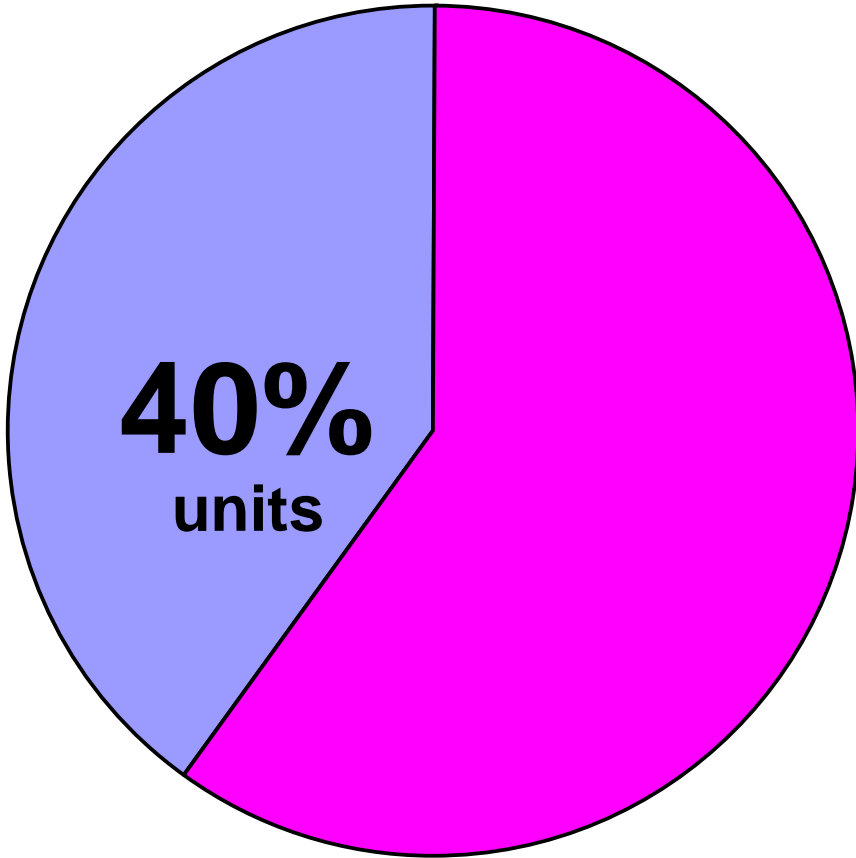
Equal per capita basis

Carbon account

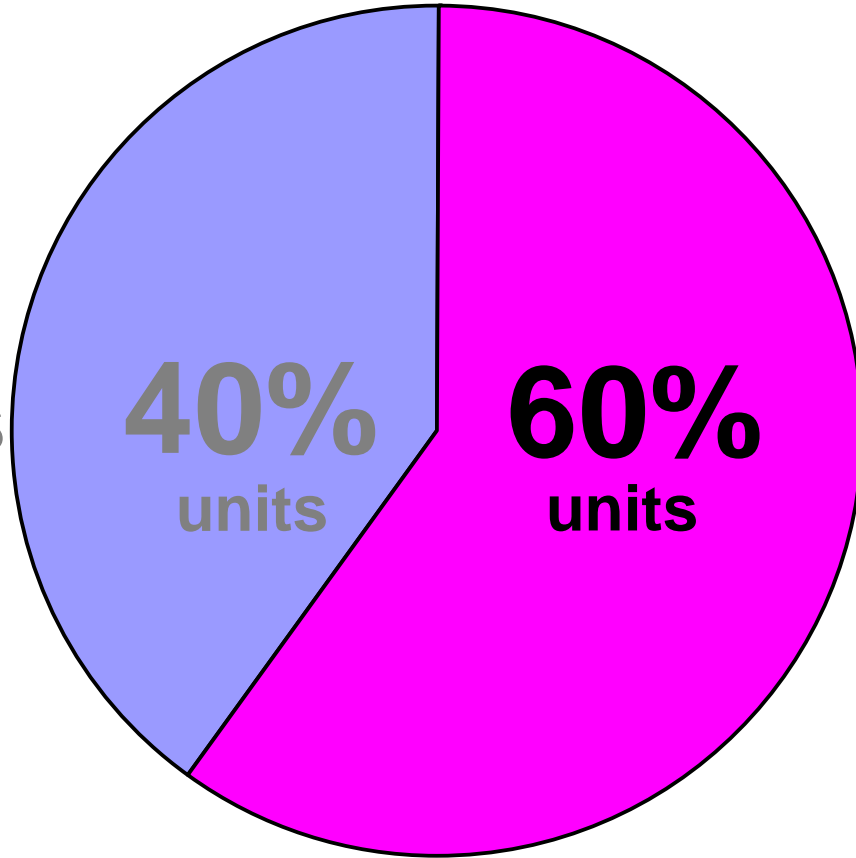
- **Units deposited in an electronic carbon account**
 - **Carbon account similar to bank account**



Individuals



Individuals



**Auctioned by
government
on the...**

...National carbon market

All organizations must purchase units on market

...more on the carbon market later

3 elements

1. Setting the carbon budget
2. **Allocating carbon units #1**
3. Surrendering carbon units

3 elements

1. Setting the carbon budget
2. Allocating carbon units
3. Surrendering carbon units

Surrendering

- Units surrendered whenever **fuel/electricity** purchased
- **N.B.** No surrender when purchasing e.g. train ticket
- Quantity surrendered covers carbon content of purchase

Surrender must be easy and convenient

When paying

- **gas and electricity bills**

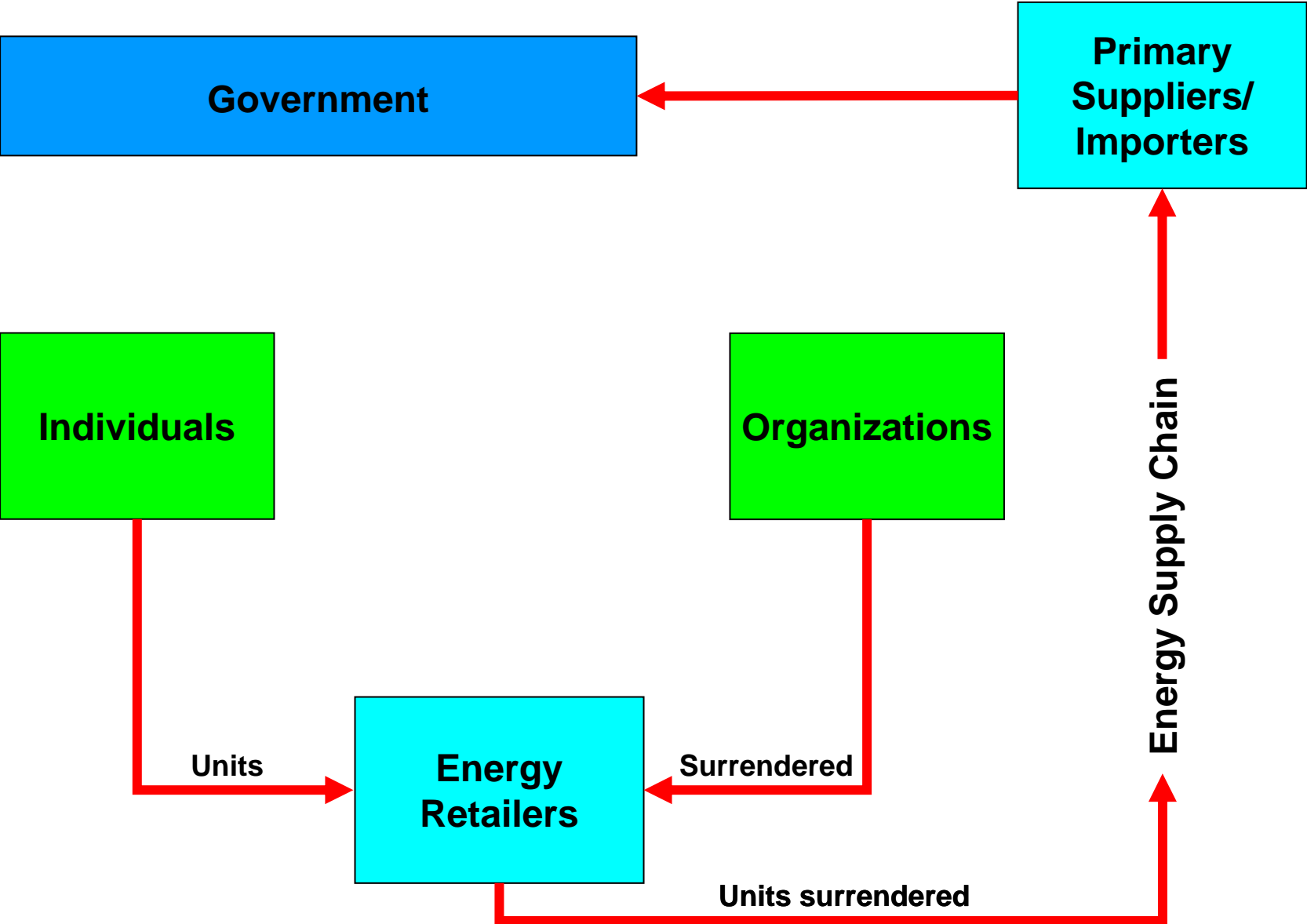
surrender by direct debit from carbon account

- **for petrol/diesel**

surrender by...

...carbon card





3 elements

1. Setting the carbon budget
2. Allocating carbon units
3. Surrendering carbon units

3 elements

1. Setting the carbon budget

2. Allocating carbon units #2

3. Surrendering carbon units

...More on the national carbon market

National carbon market

Sellers

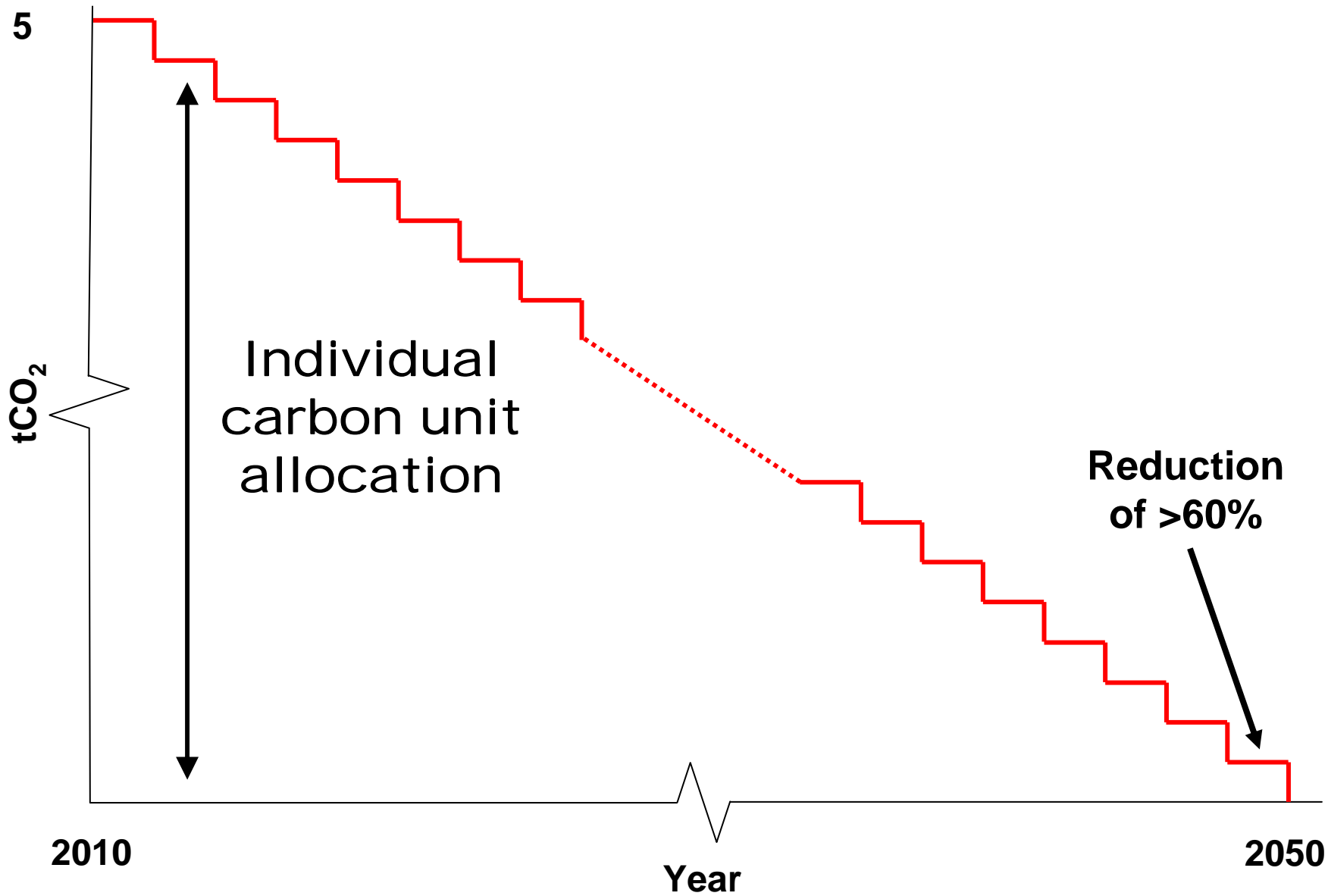
Government (*60% at auction*)

Below-allocation individuals

Buyers

Below-allocation individuals

- **Emit at level below that permitted by their allocation**
- **Have surplus units**
- **Surplus can be saved...**



Below-allocation individuals

- Emit at level **below** that permitted by their allocation
- Have surplus units
- Surplus can be saved...
- ...gifted, retired or **sold**

National carbon market

Sellers

Government (*60% at auction*)

Below-allocation individuals

Buyers

Organizations

Above-allocation individuals

Below-allocation individuals

emit at level **below** that permitted by their allocation

Above-allocation individuals

emit at level **above** that permitted by their allocation

National carbon market

Sellers

Government (60% at auction)

Below-allocation individuals

Buyers

Organizations

Above-allocation individuals

Buy at auction

Buy

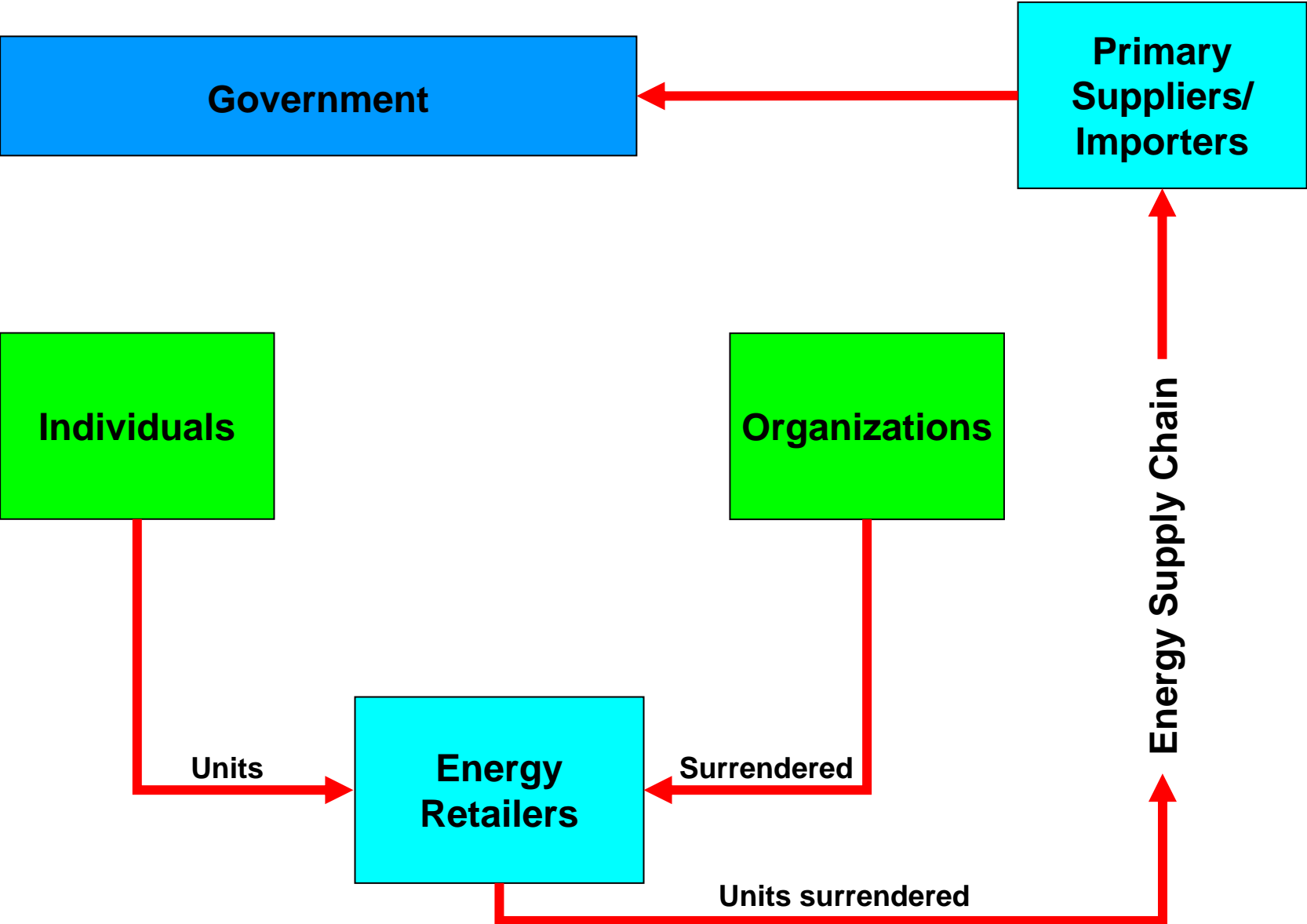
Sell

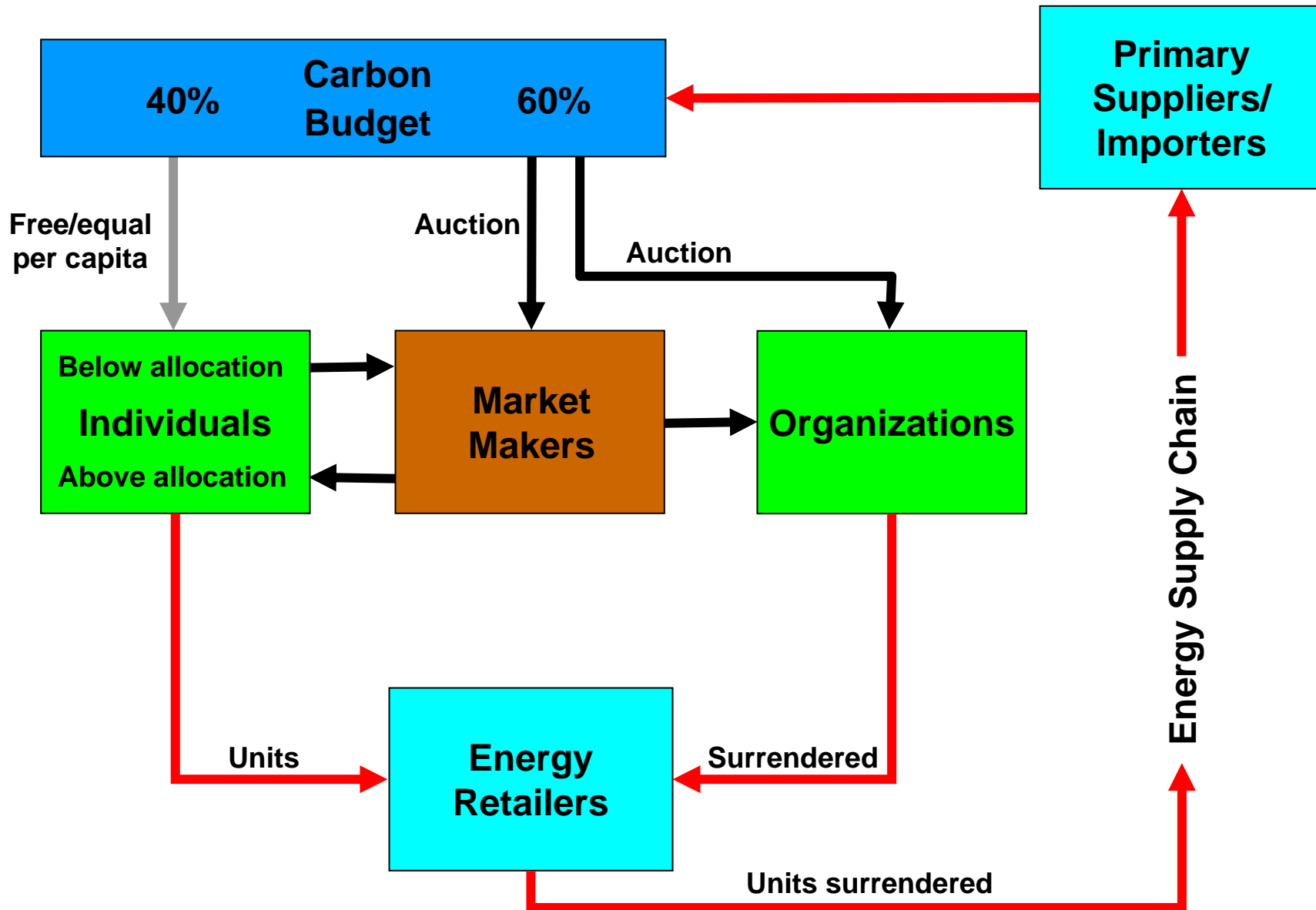
Market makers

E.g. banks, post office

Profit on “bid and offer” spread

Trading made easy – online, by phone or over-the-counter





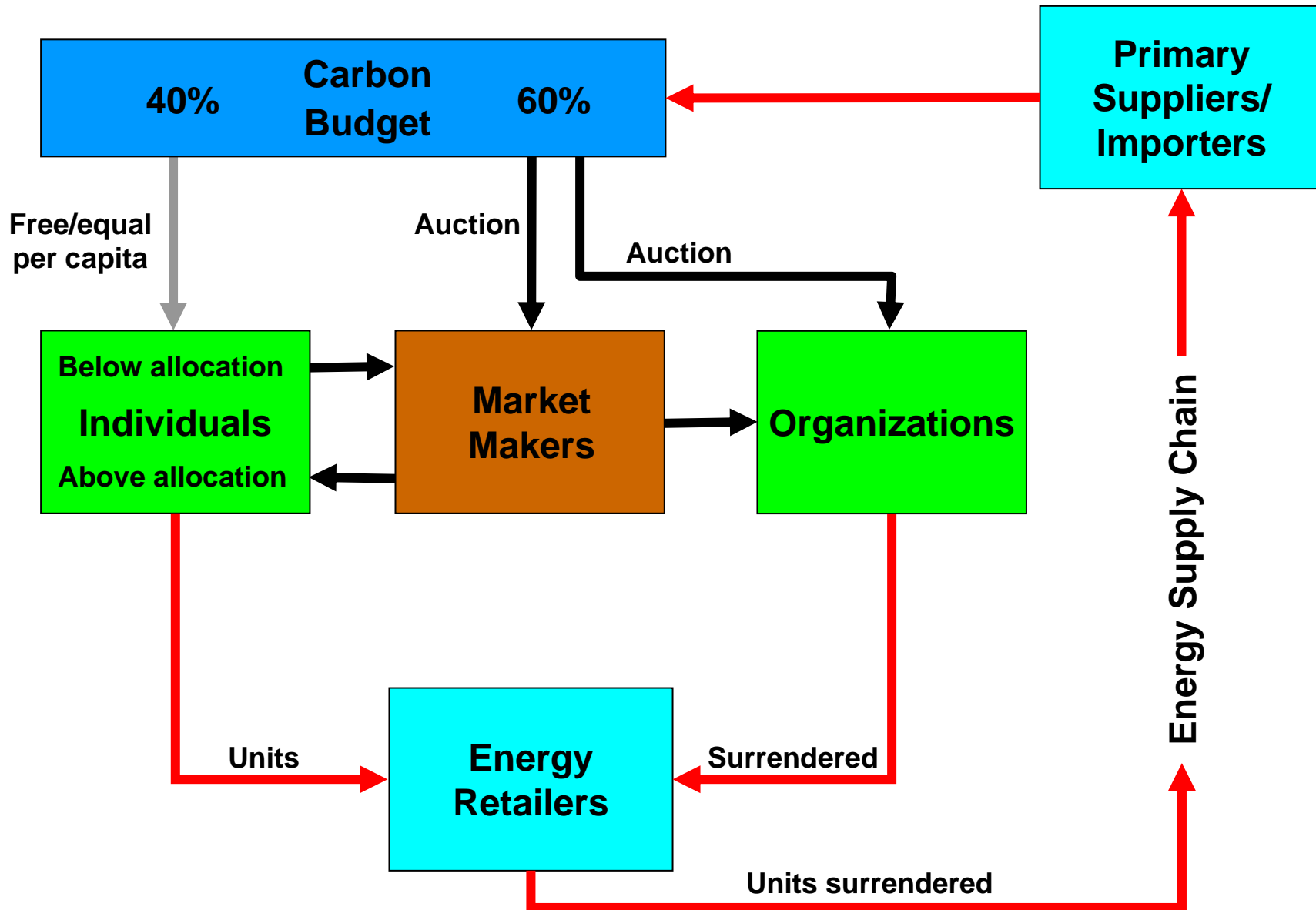
Question

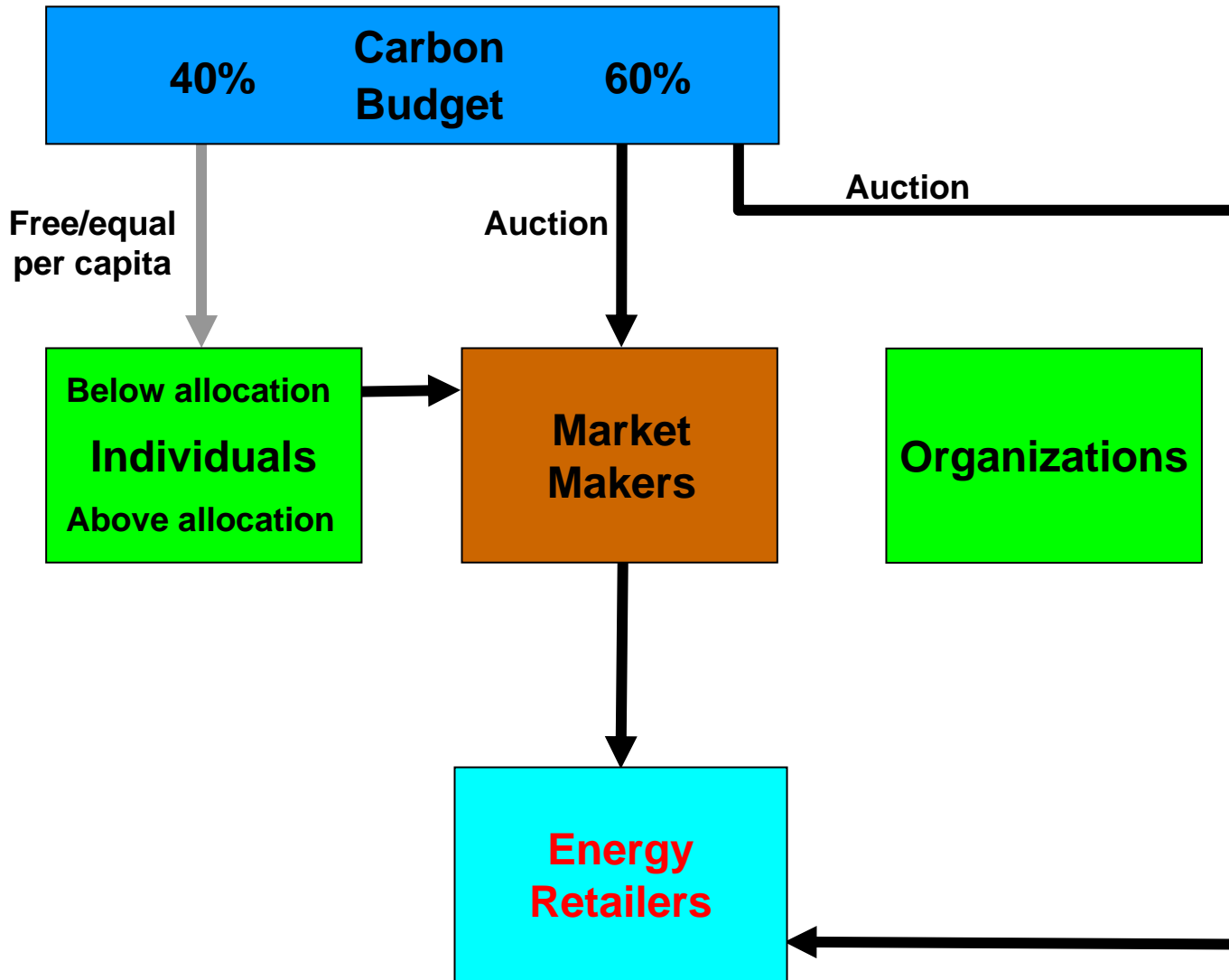
What if customer has no units at point of sale?
(e.g. forgotten carbon card, overseas visitor, run out of units)

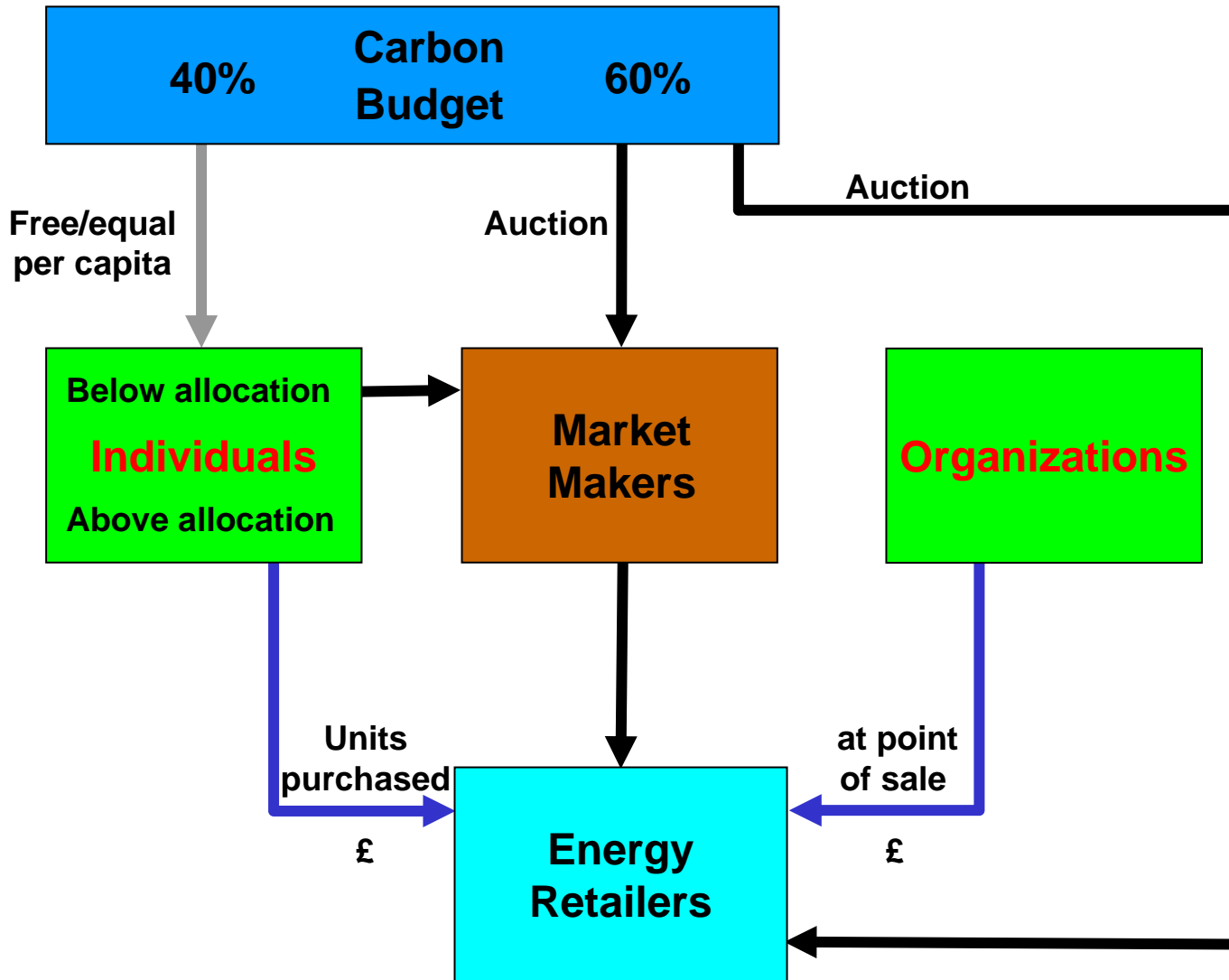
Answer

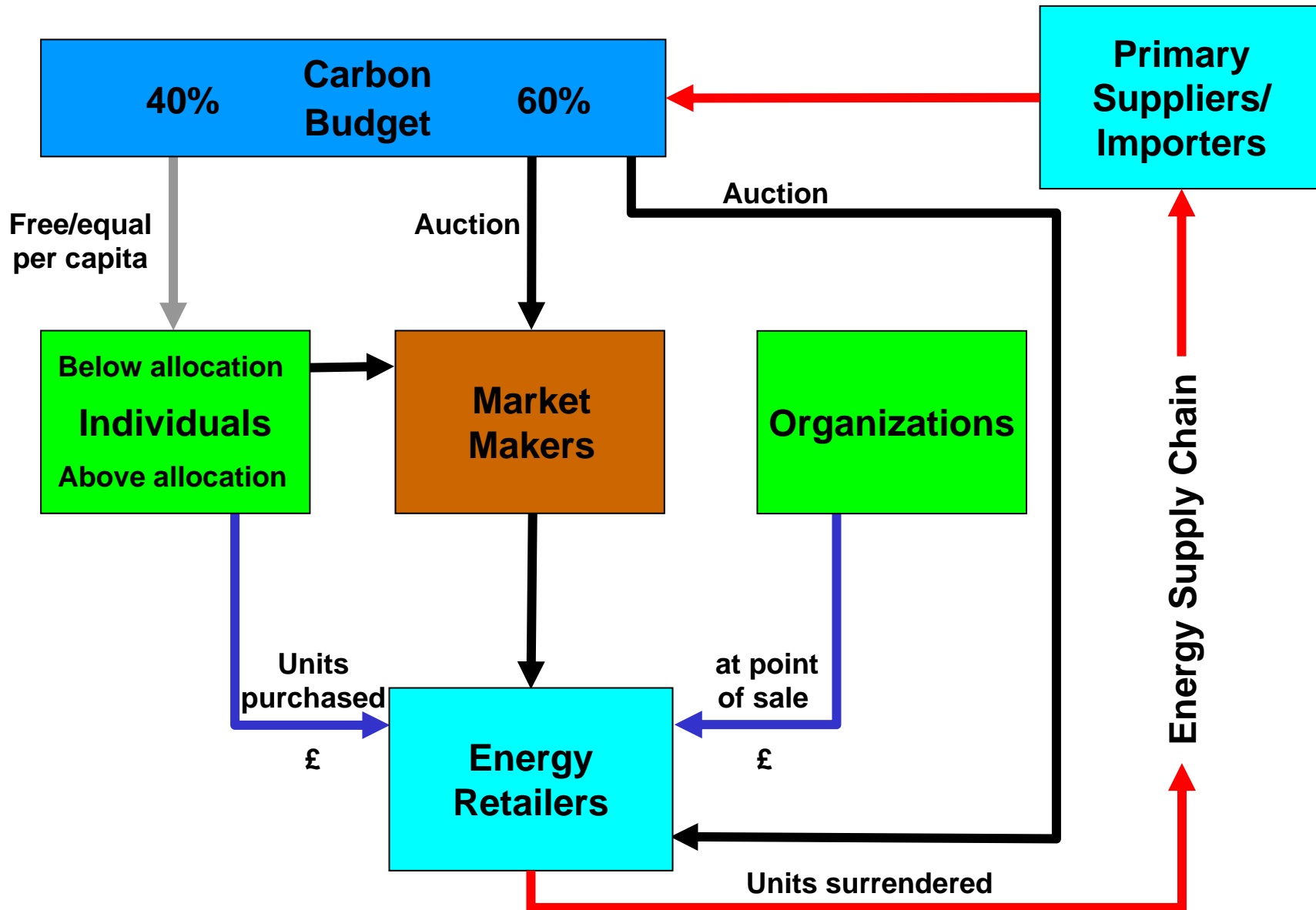
They buy units at the point of sale

- (1) Retailer buys units required by customer on market**
- (2) Cost added to customer's bill**





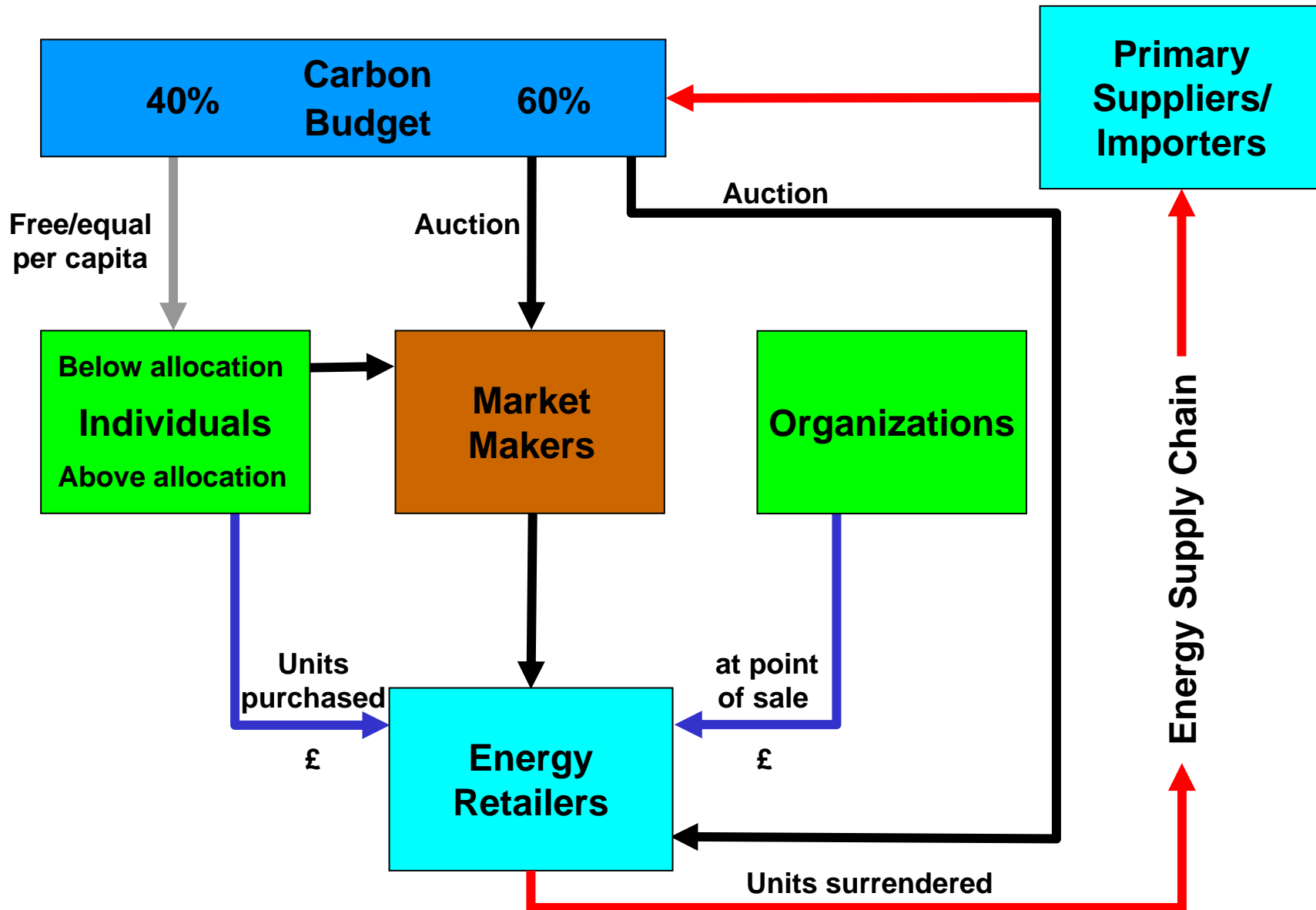




For those who don't understand...

...or who don't want to transact in carbon units

- 1. Sell ALL units immediately they enter carbon account**
- 2. Buy ALL units required at point of sale**



For those who don't understand...

...or who don't want to transact in carbon units

- 1. Sell ALL units immediately they enter carbon account**
- 2. Buy ALL units required at point of sale**
- 3. Deal only in money...like a carbon tax**

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DO YOU LOVE OR HATE

DTQS

NEW!
MARMITE SQUEEZE ME
IS IN STORES NOW...



SQUEEZE ME!



SQUASH ME!

A large, solid pink heart shape is centered on a white background. Inside the heart, the text "Why do some people love DTQs?" is written in a bold, blue, sans-serif font.

Why do some people love DTQs?

Two reasons

- **A fair allocation**
- **A tangible stake**
 - *Adults made stakeholders in the atmosphere*
 - *Carbon units are ones actual stake*



Should we all (learn to) love DTQs?

Tyndall assessment of PCT

- **Feasibility**
- **Appropriateness**

Tyndall assessment of PCT

- **Feasibility**
- **Appropriateness**

Technical elements

- **Enrol 50m people into the scheme**
- **Verify identity**
- **Open account and issue card**
- **Replace lost and stolen cards**
- **Provide and operate trading channels**
- **Issue statements**
- **Close accounts (on death or emigration)**

Defra pre-feasibility report

“We have not identified an insurmountable technical obstacle for the implementation of this type of Personal Carbon Trading scheme from this initial analysis. It appears that the majority of functions could be fulfilled by modifying and / or adding capacity to existing systems.”

Accenture (2008)

Tyndall assessment of PCT

- Feasibility
- **Appropriateness**

Appropriateness

- **Fairness**
- **Efficiency**

Appropriateness

- **Fairness**
- **Efficiency**

Seven Seas

Seven ~~Seas~~ Cs

Seven Cs

Individuals who

- Live in the **countryside**
- Live in a **cold** region of a country
- Live in a **chilly** house
- Have **children**
- Feel the **cold**
- Are single rather than in a **couple**
- Are **crook** (and require e.g. home dialysis)

Under equality of welfare

- All require **more energy** to achieve same welfare
- More energy = **more emissions**
- ∴ They should get **more emissions rights**
- ∴ A **fair** allocation is an **unequal** allocation

Appropriateness

- **Fairness**
- **Efficiency**

Appropriateness

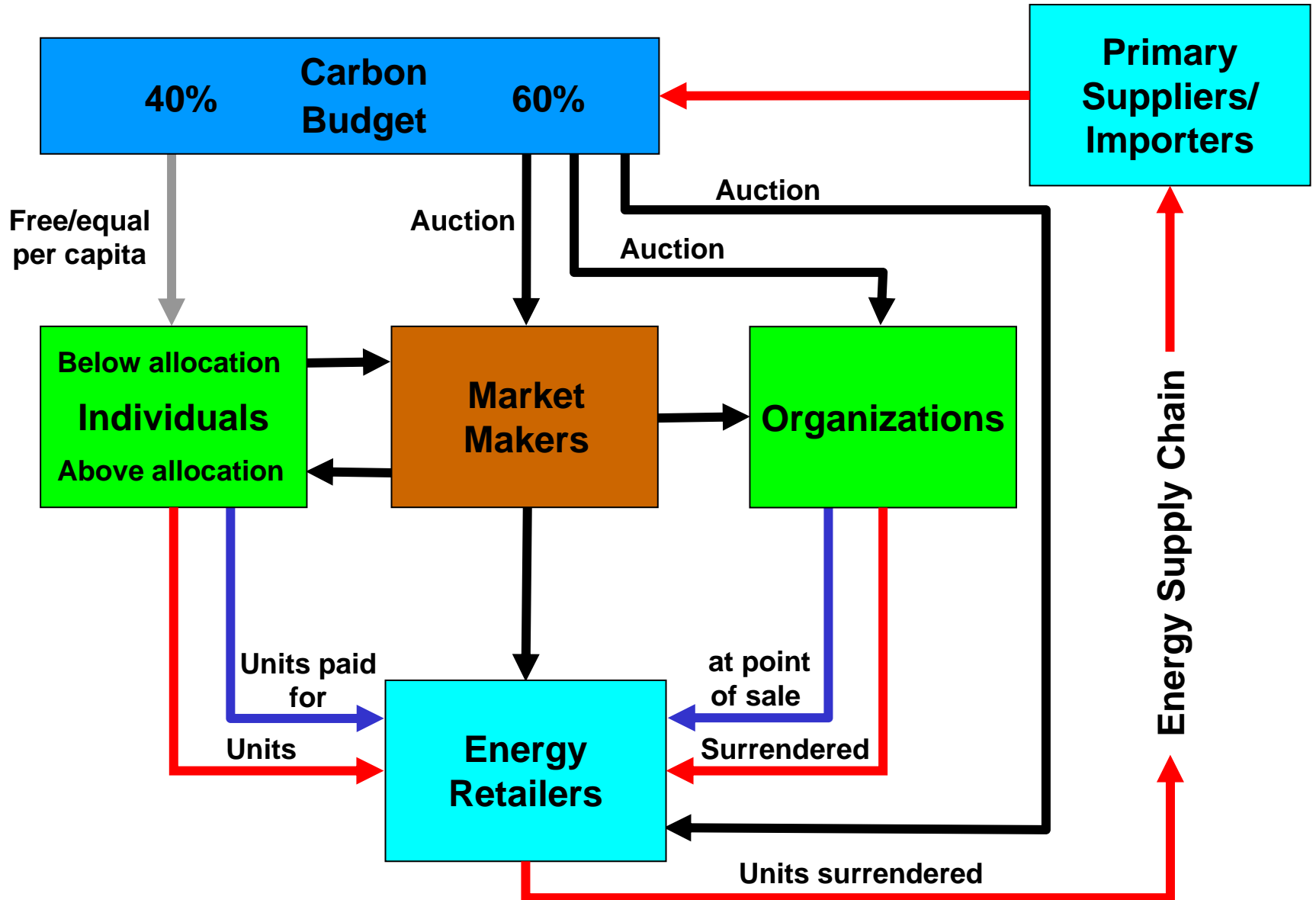
- Fairness
- **Efficiency**

Objection

Can implement equal per capita more cheaply

- *Upstream trading*
- *Carbon tax with lump-sum recycling*

DTQs

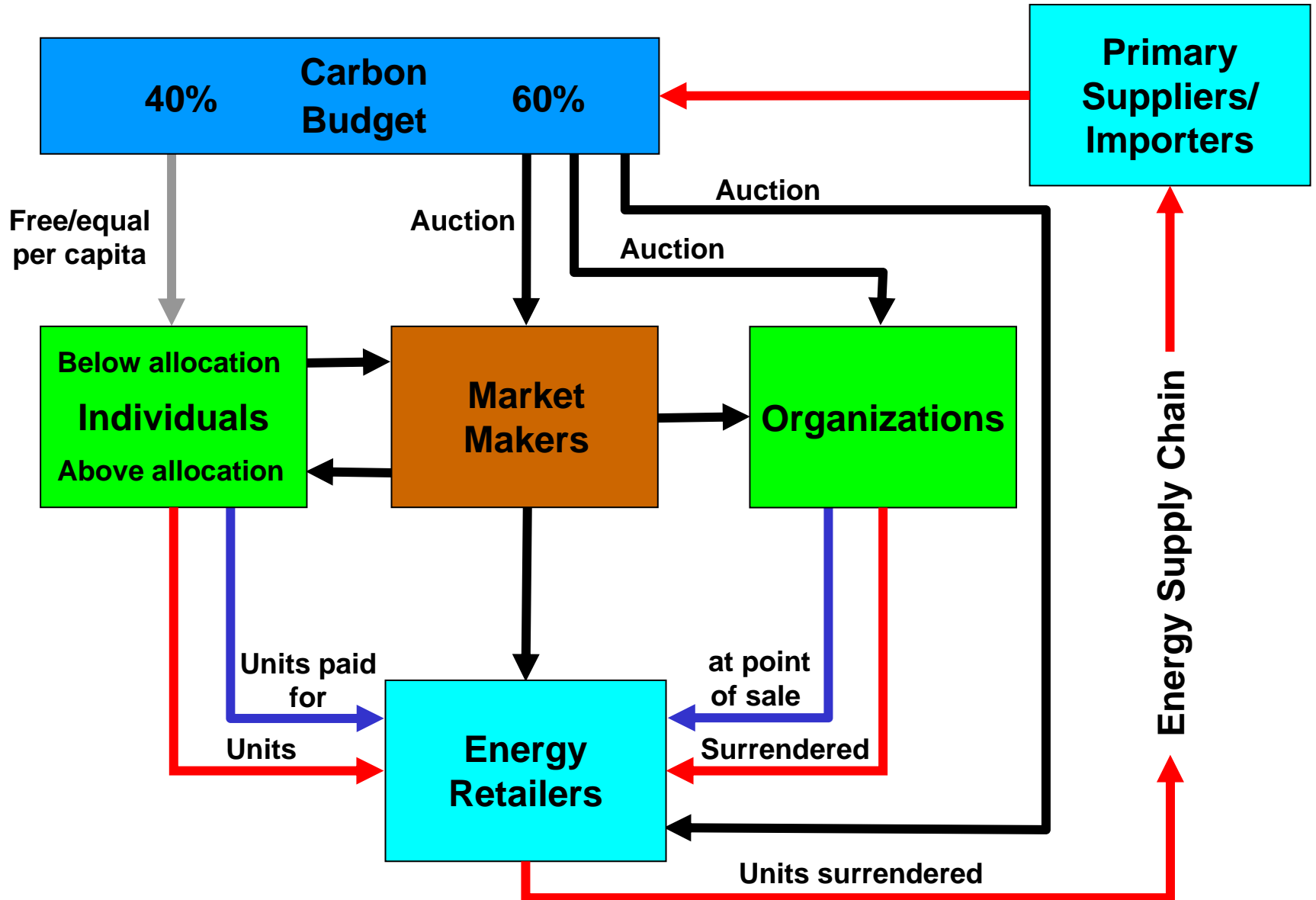


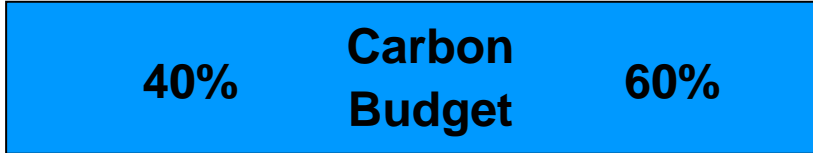
Costs

Set up costs **£0.7-2 billion**

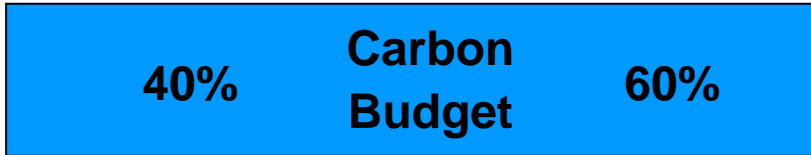
Annual running costs **£1-2 billion**

DTQs

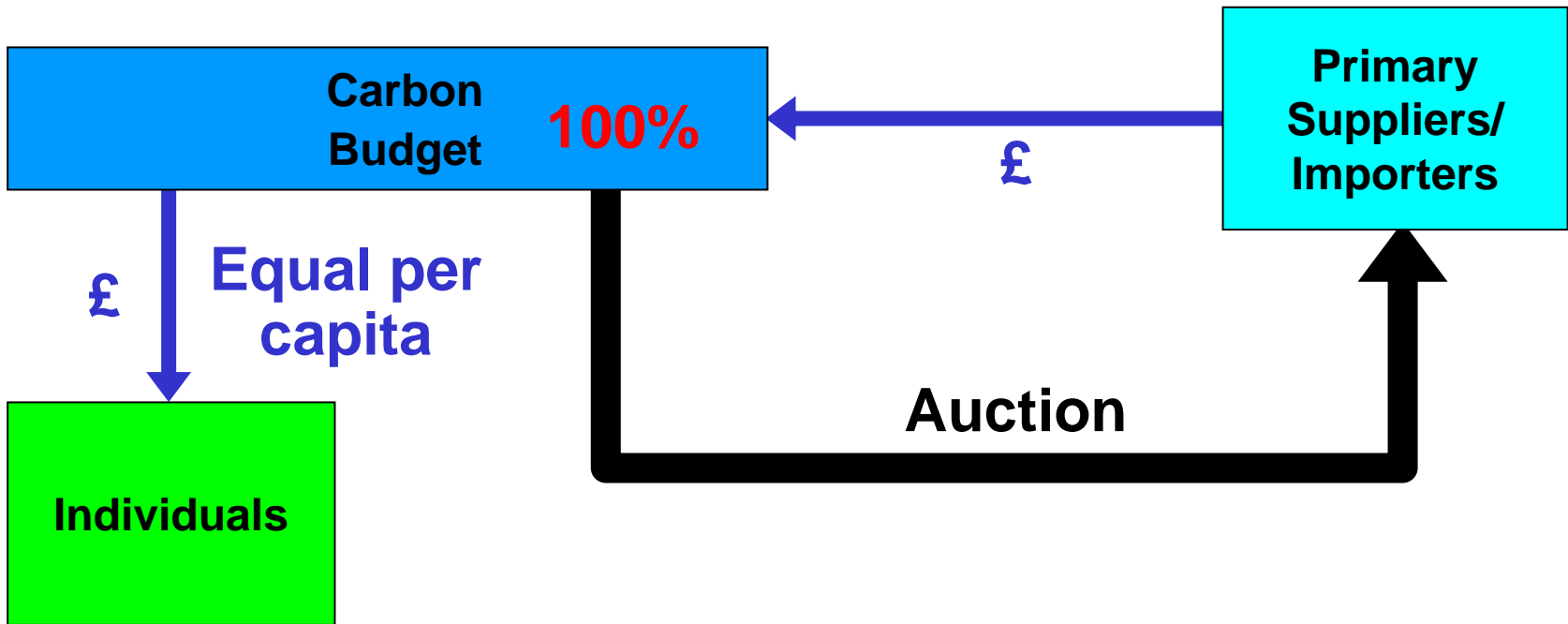




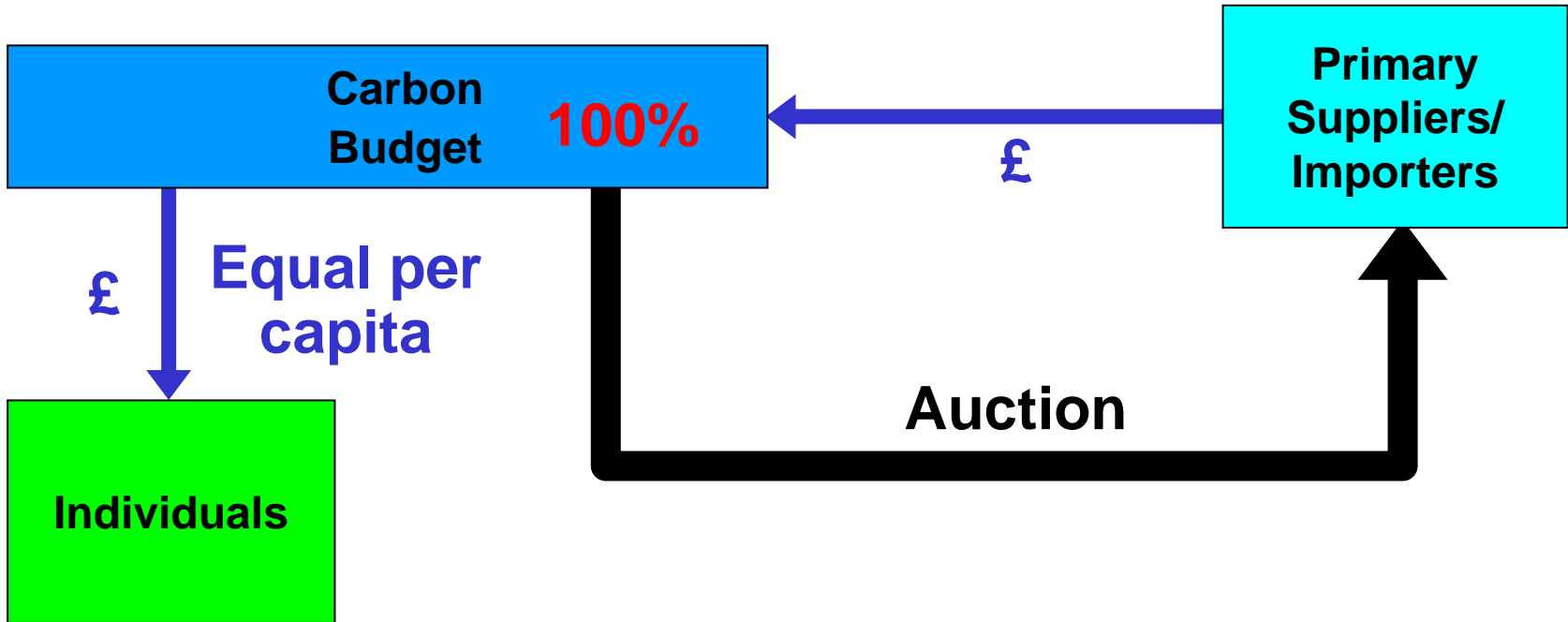
Upstream auction



Upstream auction



Sky Trust



Equivalent but CHEAPER!

Not

emissions rights

being allocated on

equal per capita basis

but

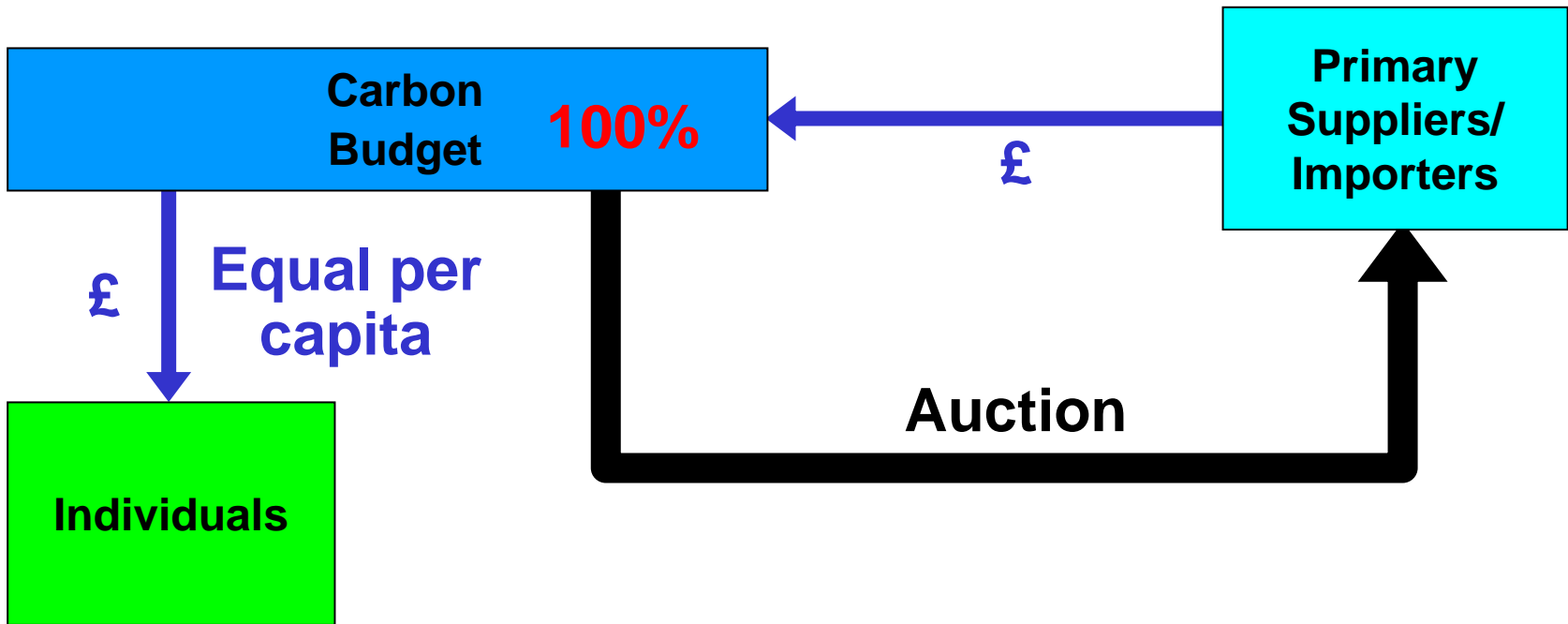
REVENUE FROM SALE OF EMISSION RIGHTS

Costs

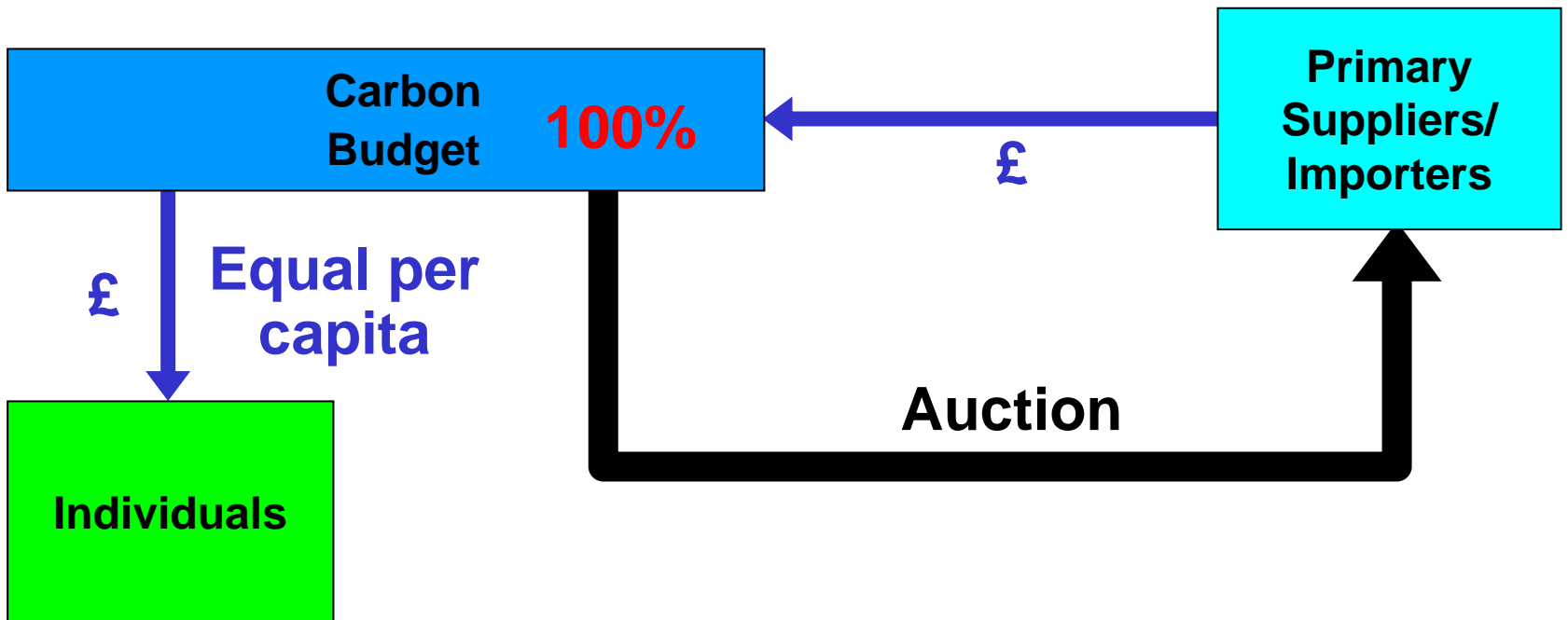
Set up costs **£50-100 million**

Annual running costs **£50 million**

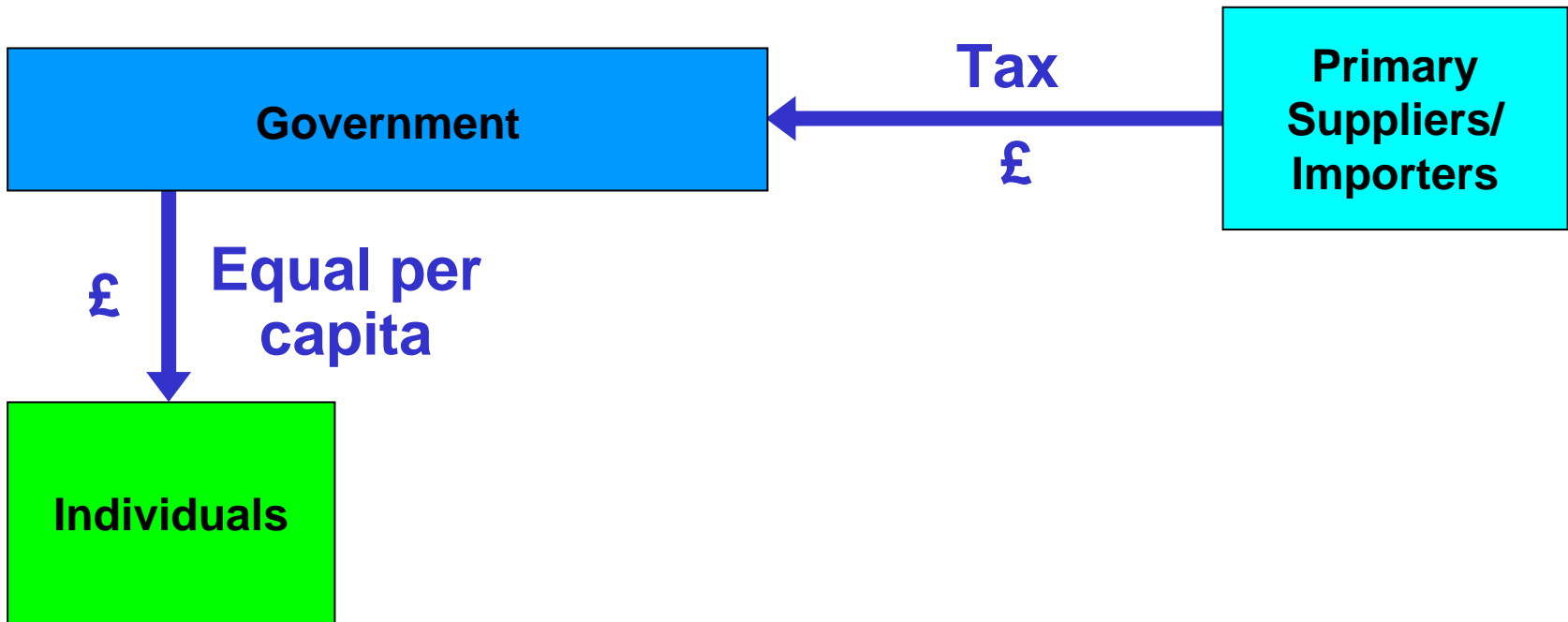
Sky Trust



Carbon tax



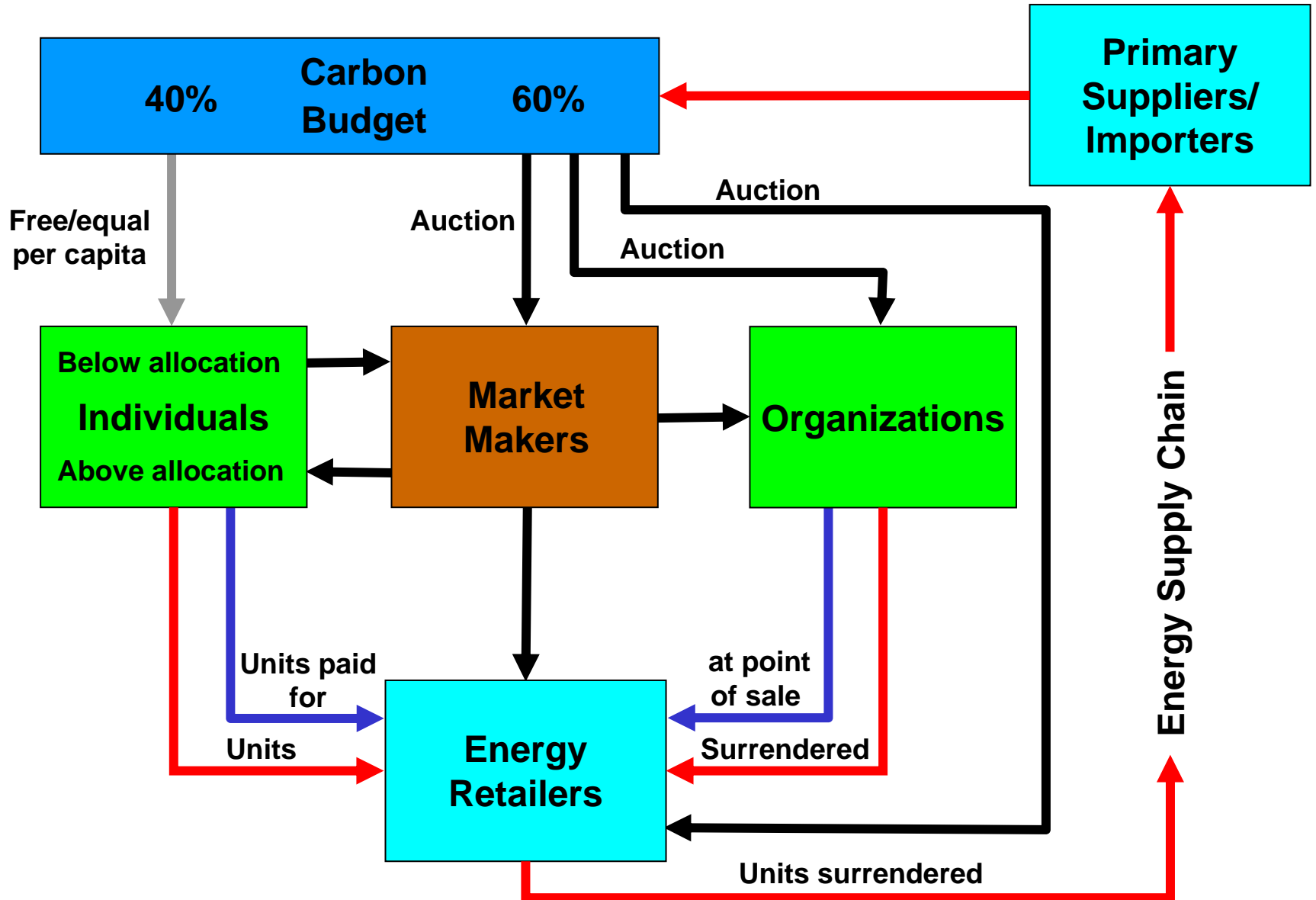
Carbon tax



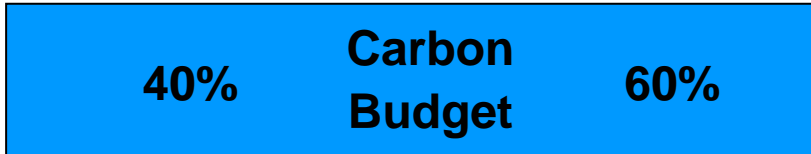
Cap and Share

Individuals being allocated rights is important

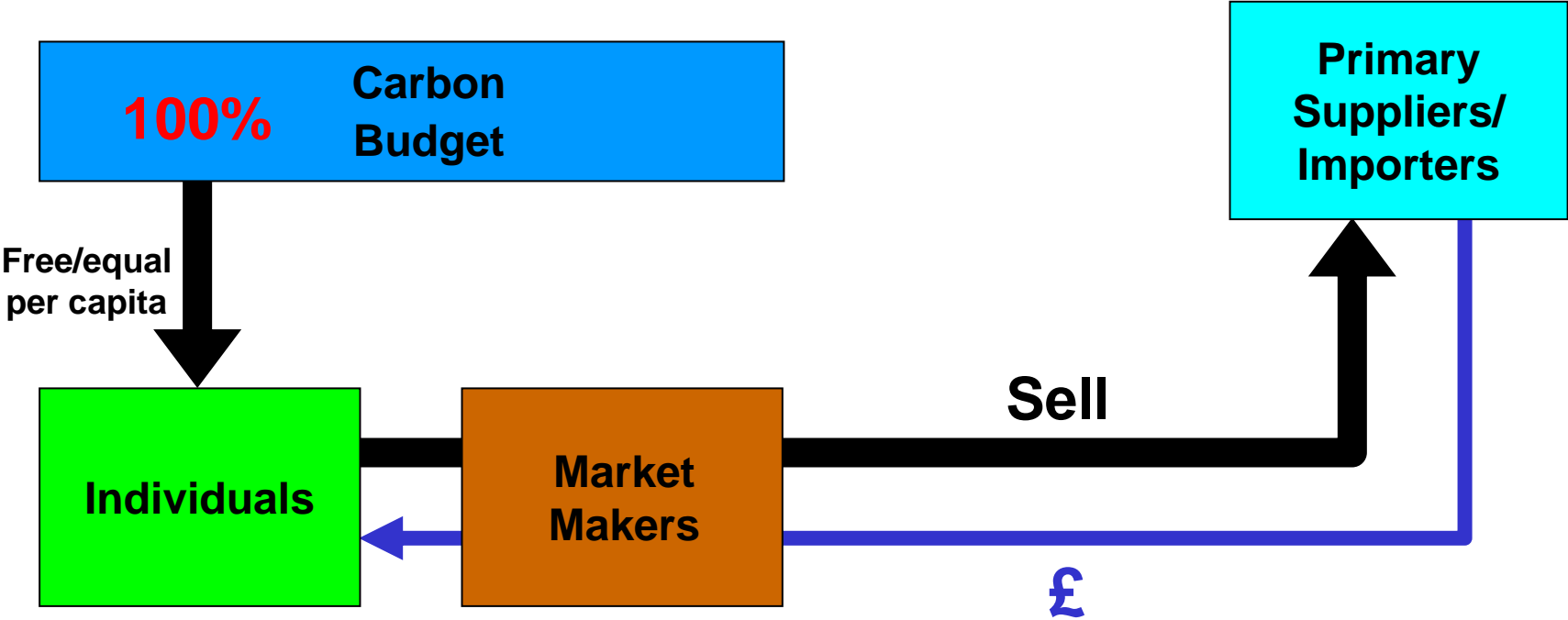
DTQs



Cap and Share



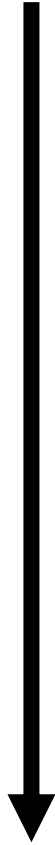
Cap and Share



Sky Trust

C&S

DTQs



**Increasing
costs**



**Increasing
benefits**

Suggested additional benefits

- **Makes individuals stakeholders**
- **Engenders sense of common purpose**
- **Gives sense of responsibility**
- **Increases carbon visibility**
- **Increases carbon consciousness**
- **Increases carbon literacy**
- **Gives sense of agency**
- **Empowers individuals**

Not just feel-good factor...

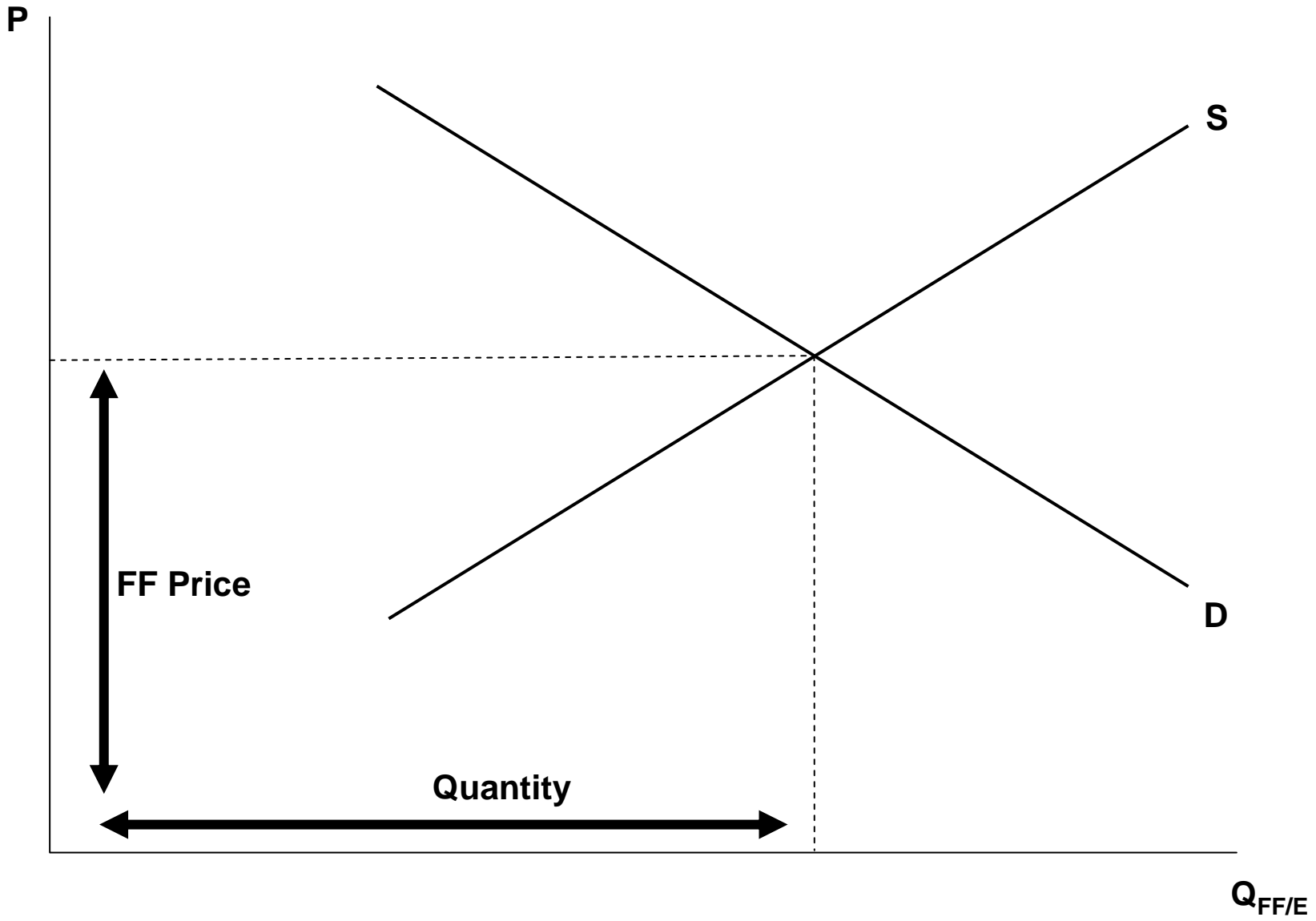
Increased carbon consciousness

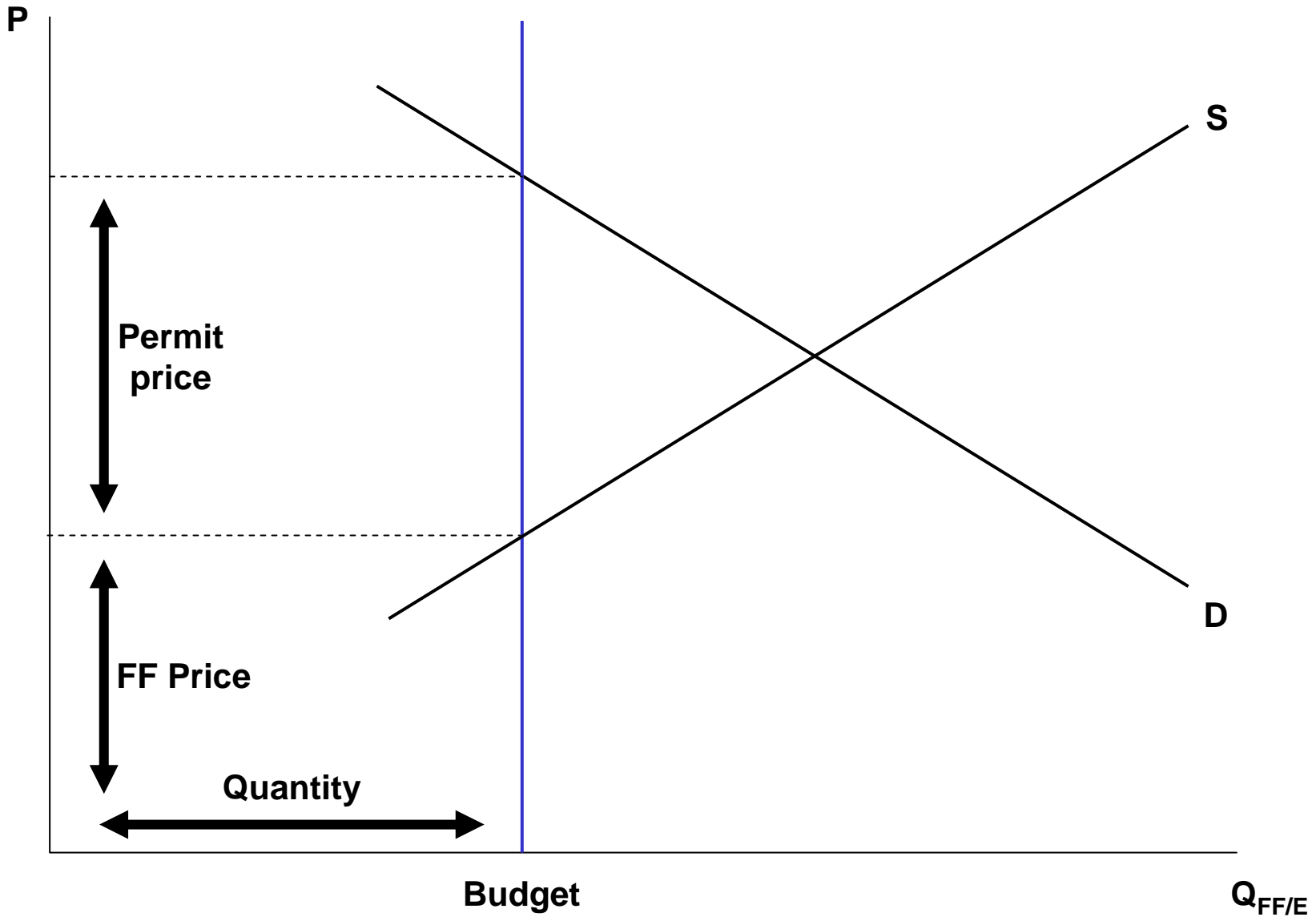
leads to

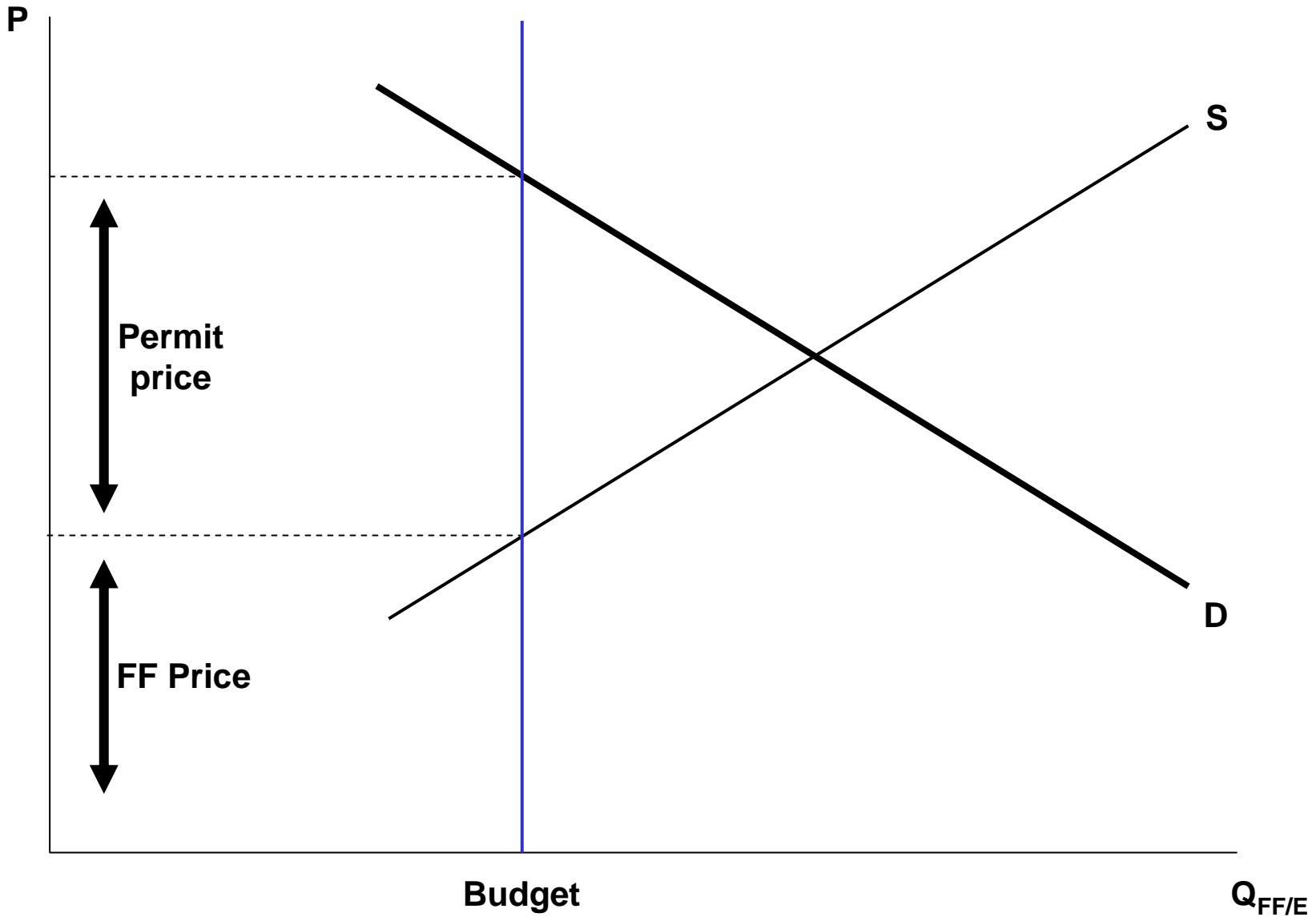
greater search for and picking of “low hanging fruit”

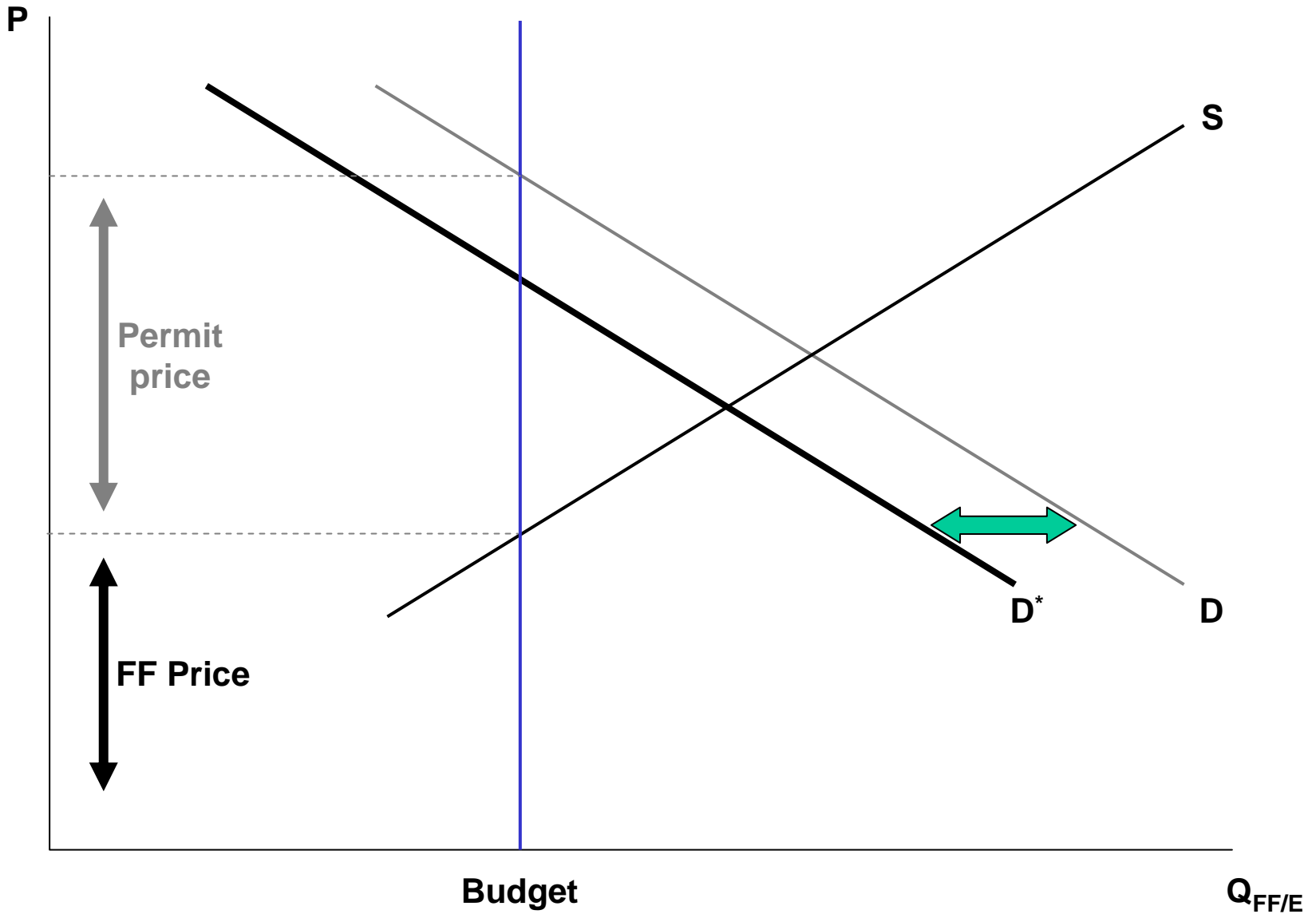
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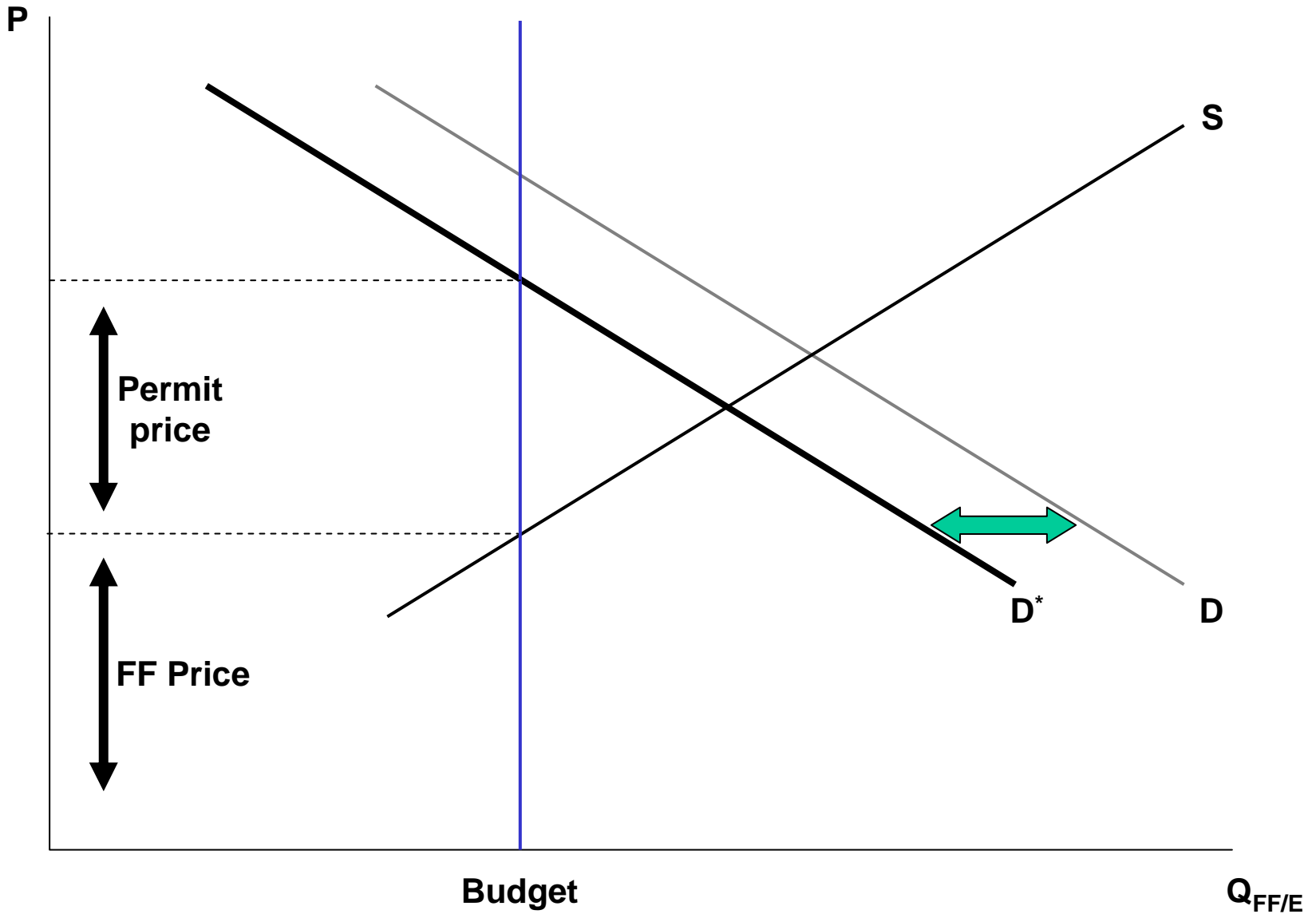
cheaper reduction of emissions

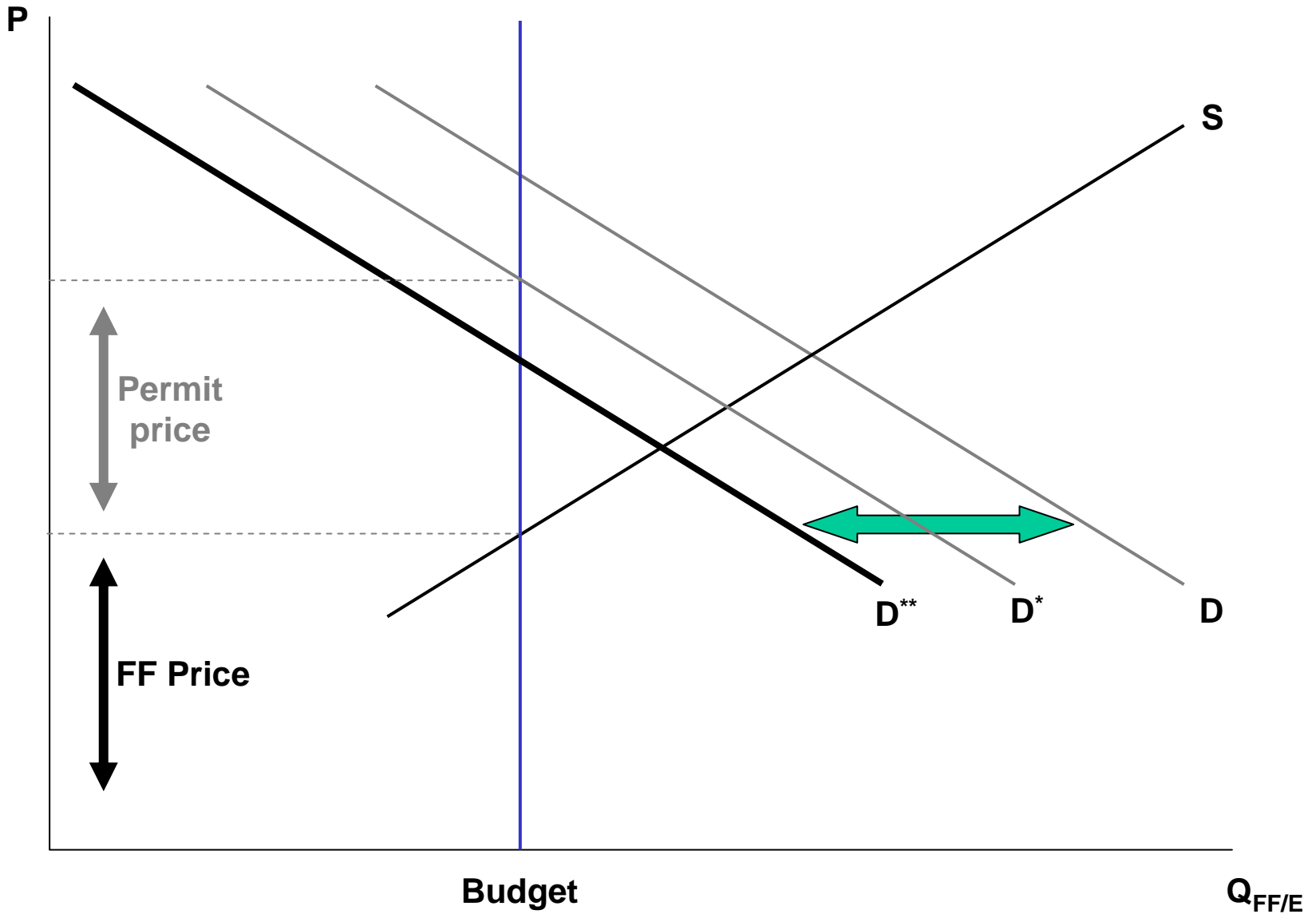


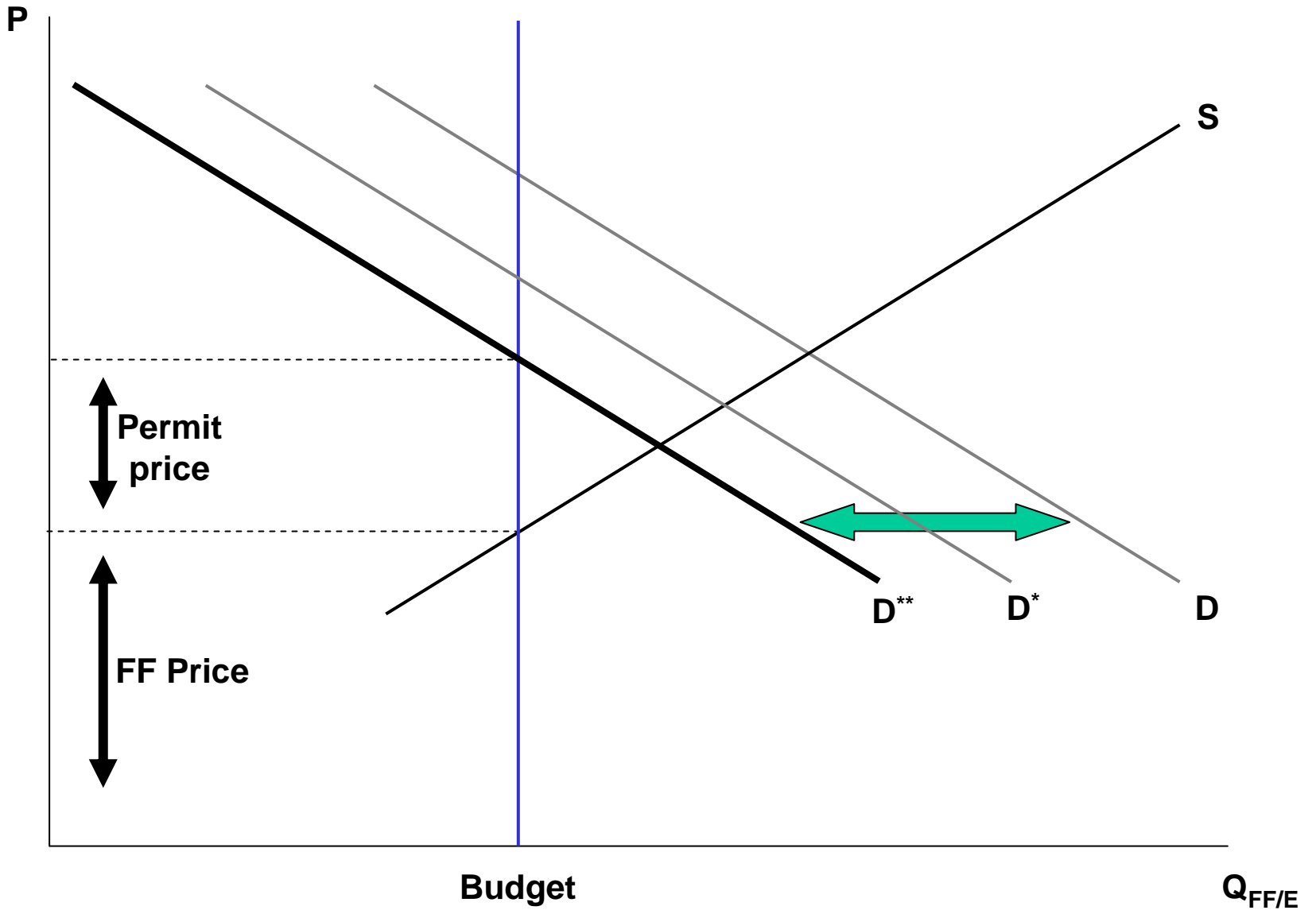












Defra's findings

Insufficient additional benefits to justify additional costs

- **Much low-hanging fruit “picked” by existing/planned instruments**
 - **Efficiency standards for appliances**
 - **Banning of incandescent bulbs**
 - **Building regs**
 - **Emissions standards for vehicles**
- **Visibility of residential carbon increased by smart meters**

Conclusions

- **Important to consider fair allocation of emissions rights**
- **EPCA not straightforwardly fair**
- **To argue against Defra's position proponent of DTQs**
 - **Benefits greater than suggests**
 - **Costs less than suggested**
 - **Two birds with one stone – climate change and peak oil**