

Quota systems

The different quota proposals all aim the same: limit energy use/material consumption of a country or of the EU as a whole on a consumer level.

Quota on the production level (fish, CO₂) do not seem to affect consumer behavior. Moreover these quota systems seem to have bizarre escape possibilities. The CO₂ trading markets even seem to be the next speculation bubble of the financial markets. Therefore the different proposals focus on giving consumers (all adults in a country/EU) consumer rights, which we call quota.

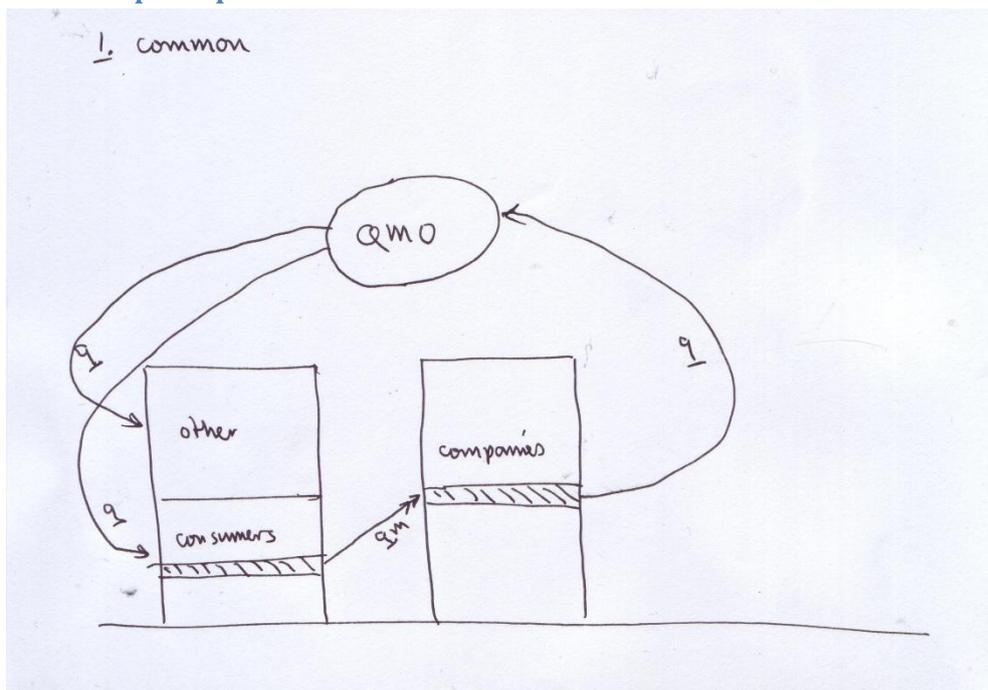
These quota systems can be used to limit direct energy use (petrol, electricity, gas). It is more difficult to account for energy embedded in products, and regulate import/export.

The next issues should also be discussed:

- The units of a quota system, for example CO₂ or footprint;
- how to allocate the quota per country or for the EU as a whole, for example equal share to each inhabitant;
- to what level the total quota (CO₂ or footprint) should be lowered in order to reach our goal, a sustainable society;
- In how many years and along which path the quota should be lowered.

Let us sketch the common principles and then the different ideas on how to get government and companies in. These are based upon TEQs, the RCC/Ecologistas proposal and the ideas of the Dutch Footprint Group. Finally a sketch of an import/export possibility is presented.

Common principle



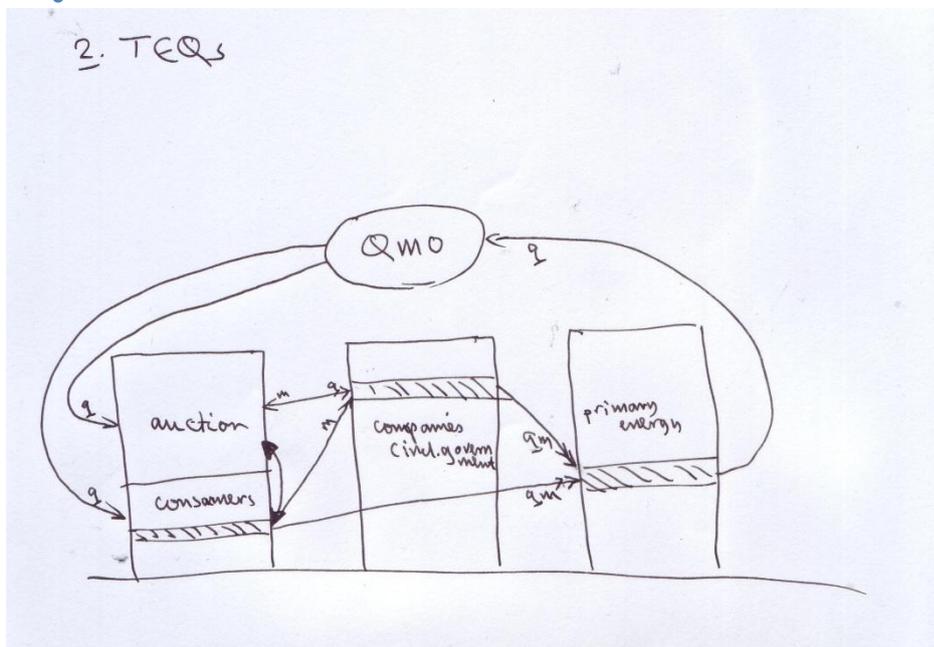
In all situations we need a central authority, here called Quota Management Organization (QMO).

Quota (q) are partly allocated to all consumers (adults in a country). The other part is reserved for government/companies, and here comes in a crucial part in which the different proposals differ and are not equally clear yet. At the end of the chain companies (primary energy producers and possibly farmers (in case of footprint)) return their quota back to the QMO, corresponding with the energy they delved or the area of land they farm.

The main problems are:

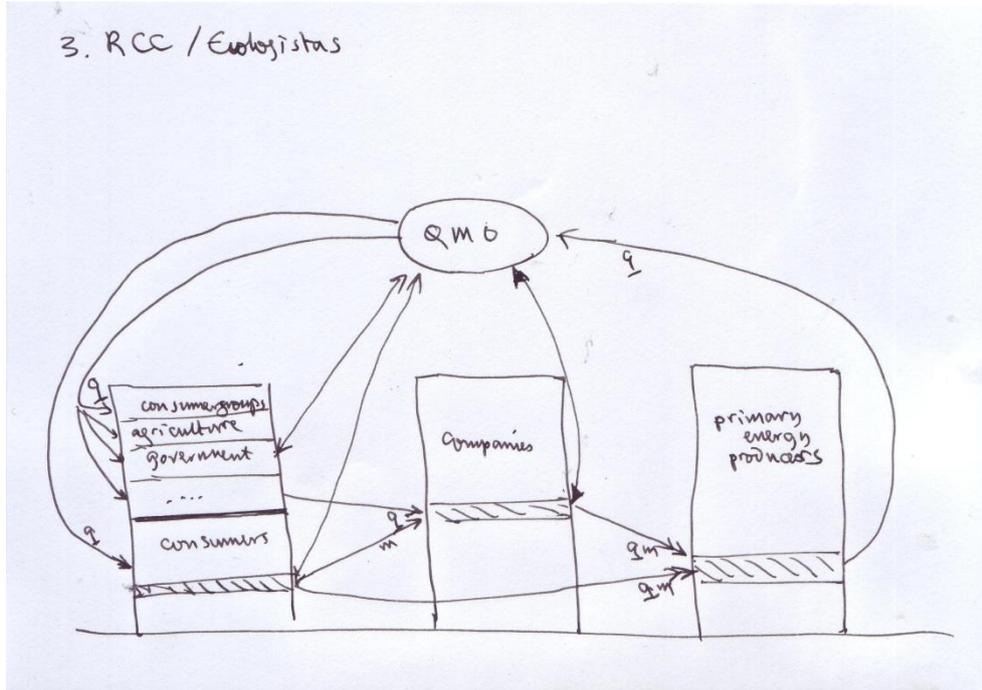
- how to take embedded energy/footprint into account
- how to handle imports and exports
- how to prevent speculation with quota

TEQs



In the TEQs system (tradable energy quota), developed in the United Kingdom and thought of as a national rationing system for CO₂, besides the allocation to consumers an auction will be the basic mechanism for getting companies in. Companies buy their quota for the current market price, so in money. Both companies and consumers pay their energy bills in both money and quota. Embedded energy in products is paid in money for the actual auction price at the moment of production. Over- and under-consumers can presumably sell or buy quota to and from the auction.

RCC proposal/Ecologistas

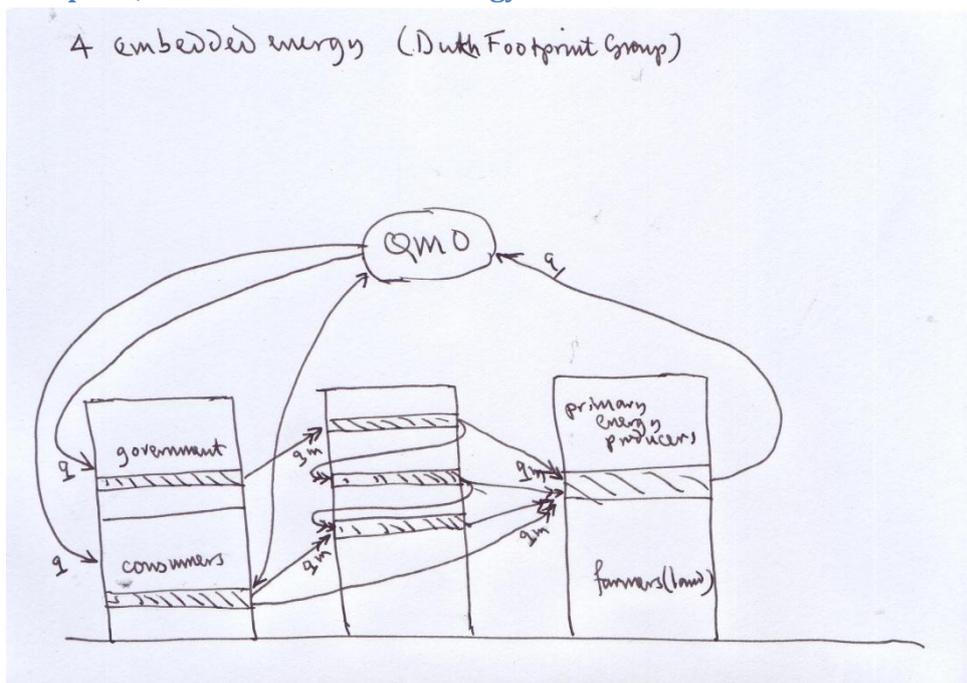


In the RCC proposal, the headlines being the same as the Ecologistas proposal, quota are allocated to the consumers and to different "consumer groups" like agriculture, public transport, industry, state bodies. These entities allocate their quota to individual companies. This seems to be a variant of the auction in the TEQs proposal.

Both consumers and companies both pay money and quota to the primary energy producers.

Under-consumers can sell quota for special "quota money". Quota money is a local currency favoring local and environmental friendly production. It is probably also a way to prevent speculation with quota.

Footprint, allow for embedded energy



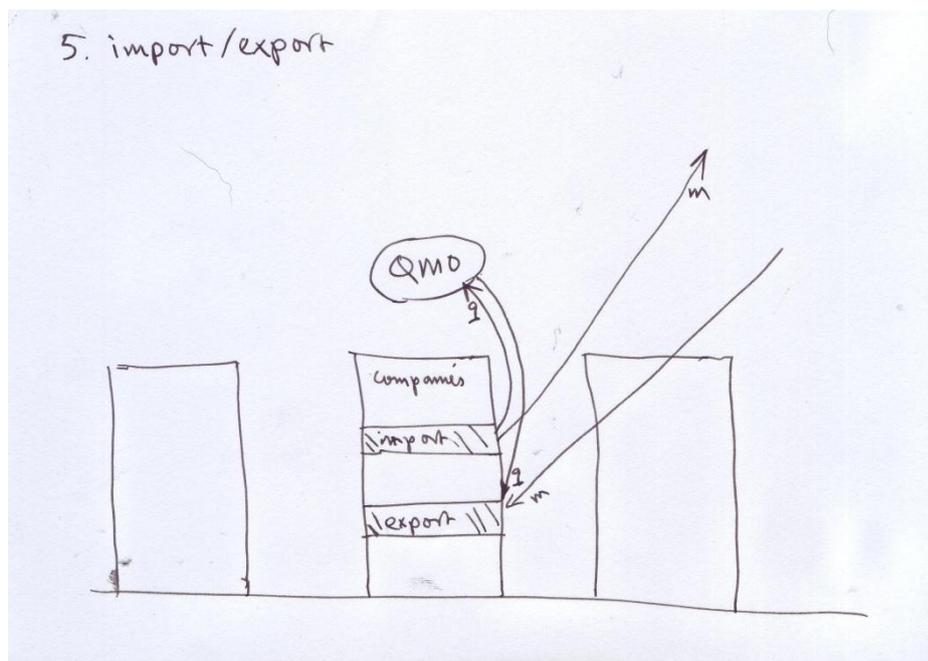
The scheme above can apply for CO2 quota as well as for footprint quota. The quota are allocated to the government (public services like police, education, civil service (?), the material costs like police cars and fuel, buildings and computers, but not the cost for the workers: they receive their individual quota as a consumer).

Like each consumer has a quota saldo (which must be positive), each company has a quota deficit, a negative saldo. Companies have to earn their quota in the production/selling process. They charge both quota and money when they sell products, to either other companies or to consumers. They must pay quota and money to their delivering companies, and to the electricity company and the petrol station.

The primary producers, which can also include farmers using their land in case of footprint as quota, pay their collected quota back to the QMO. The amount of quota must match with the delved energy or the land used for their production.

Tradable quota means that consumers can sell or buy quota from the QMO. Strict rules and some difference in buying and selling currency rate should prevent speculative actions.

Import/export



When importing goods an estimated energy content (or footprint content) should be attached to a product. These quota are paid to the QMO by the importing company. These quota then go into the chain of buying/selling as described above, so the company must earn the quota in the imported products when selling them.

When exporting goods the energy content (or footprint content) is paid to the exporting company by the QMO.

It is of course not easy to estimate the energy/footprint content of products. This could be done by comparing the products with the embedded energy/footprint of comparable local products. In any case the transport costs can be estimated easily, thus favoring local production.

See also the appendix.

Quintijn Hoogenboom, the Dutch Footprint Group

Appendix: workshop inputs on environmental backpacks (Vilanova I la Geltrú, 1-3 march 2013)

Note: The Dutch Footprint Group bases its ideas on the quota of ecological footprint rather than that of non-renewable energy. This is a little more generic than a quota solely based on non-renewable energy but probably not even generic enough. However, the principle remains the same.

Question 1: Do you know any methodology for accounting non-renewable energy “embedded” in products, you would particularly recommend?

Take the fossil fuel companies at the beginning of the chain. They extract oil, gas and coal, earning money but also have to pay their emission rights, their CO₂ quota, to the government. When they sell oil or gas directly to the consumer, the consumer pays in both money and quota. The consumer receives a yearly amount of quota from the government.

Regarding all other products, a producer pays money and quota to the oil company for the fossil energy used for their production. The producer sells his product either to a consumer or to another producer. In both cases, the person or company receiving the product has to pay back the energy quota to the producer. The Value Added Tax (VAT) works in a similar way.

Question 2: The diversity and complexity of energy use in the different production processes of goods and services make it very difficult to have a detailed account of the non-renewable energy consumed. However, could you outline what you consider the main elements, suitable to any production process, that should be taken into account in order to design a common pattern?

See answer to question one. In this solution, all embedded energy is automatically included. To further extend the quota scheme, first add the footprint. Then take into account other non-renewable resources: phosphorus and nitrogen for agricultural products; metals, especially rare-earth metals. Also fresh water should be taken into account.

Question 3: For a sound EU policy it would be ideal to achieve a standardized and simple method to account for the non-renewable energy embedded in imports. Can you think of aggregated indicators that could be useful? For example, by sector or by resource-use intensity?

The energy content of an imported product can be only be estimated approximately, because not all the steps in the production chain are known. For our quota system, we need to estimate the energy used for both production and transport. For estimating the production energy, we can use the embedded energy of comparable local products; estimating energy needed for transport is straightforward. Providing these data should be a government task.

The importer of a product is charged by his government for the energy used for its production and transport. The quota system comes into play when he sells the product.

When a product is exported, the quota it carries is refunded to the exporter by his government.

Question 4: Can you think of a particular example which could be taken as a starting point?

I propose a quota for fish, the number of kilos that a person may consume annually. At each purchase, the fishmonger collects quota from the customer. At the fish market, the fishmonger pays the fisherman in both money and quota. The fisherman are only allowed to catch as much fish as they can pay the government for in quota. With fish from fish farms the same principle can be applied as long as other, smaller fish is used as feed.

Quintijn Hoogenboom
The Dutch Footprint Group
Oosterbeek, 19-02-2013