

Annual tapering supply constraints: a radical approach to meeting the UK's CO₂ emissions targets

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Should fuel rationing be the considered as a mechanism for constraining carbon dioxide emissions?

For those who consider this a somewhat extreme suggestion, I would start by pointing out that rationing is already in force in certain sectors of the economy. To some extent companies operating under Climate Change Agreements (CCA), and to an even greater extent those users engaged in carbon trading, have accepted caps on the amount of carbon dioxide their operations can emit and hence (by implication) the amount of fossil carbon they purchase as fuel. True, the effect of carbon rationing is softened for them by having the ability to trade surplus allocations, but trading is a feature we can retain in the scheme I am proposing.

The weakness of the present regime – in which *emissions* are rationed – is the exceptions. Energy suppliers, and especially oil suppliers, are assured the growing markets they crave because there is unregulated demand not just in businesses outside the CCA and carbon-trading schemes but in the domestic sector and transport (especially aviation, where energy use is encouraged by favourable taxation of fuel).

My suggestion would extend the cap on carbon emissions to all UK users, by capping the quantity of mineral carbon entering our economy in fuel (i.e, domestic production, plus net imports, less fuels used as chemical feedstock). Importantly, though, the cap would be applied as a national limit, and individual users would be free to buy as much as they wish within the gradually-diminishing national supply. This merely turns the government's aspirational target into a self-fulfilling one, and is therefore no more painful

than the present climate-change programme would have been had it been successful.

A national carbon supply allocation, as well as being effective, would be a great deal easier to administer, since it only requires aggregate production, imports, and exports of mineral-carbon-based fuels to be controlled (there are minor complications like fuel for feedstock but these are as nothing compared to the Byzantine bureaucracy needed under the present regime). The controlled business is concentrated in a small number of enterprises whose activities the government already licenses or taxes, so it has the necessary mechanisms in place to set tapering allocations for producers and importers. How the government would distribute these quotas will be a thorny issue, but they have done it for fish (where other countries were involved) and for third-generation mobile phone licences, so this should be a doddle by comparison. Indeed if they go for an auction they might even have a small windfall on their hands; and ultimately they can take comfort from the fact that any adverse decisions would affect companies, not voters.

Once the supply quotas are set, various subtle benefits could follow. Firstly the major players – keen, presumably, to ensure growth within a constrained market – may get into alternative and renewable energy supply in a serious way. And who would be better placed than they, to do the research and make the necessary investment, not just in supply but in infrastructure? At present, nobody with any clout or resources has much of an incentive.

Secondly, pricing regimes could well change. Indeed they will have to do so because we cannot return to the post-war rationing era, when a works engineer could look out of his window at a pile of coal in the factory yard, and reflect that if he did not make it last, production would be halted. Nobody's gas is going to be turned off: we need not relive the rota power cuts of the 1970s. Price mechanisms would be used instead to create "soft" limits. For example, although there might be a definite moving annual total supply cap associated with each producer licence, the government could introduce a per-unit levy on

supply in excess of (say) 90% of the licensed limit. The market would then move away from volume discounts for energy purchases and move towards “rising block” tariffs where customers pay higher prices (perhaps much higher) for additional fuel used at the margin¹. This ‘negative discount’ effect resembles the way that the half-hourly electricity market has operated for decades (even under nationalisation), reflecting the fact that the marginal cost of supply increases with demand. Wholesale suppliers of all fuels would reflect the risk of going into the penalty band by using retail price signals, and this is how end-user demand would be braked.

Rising-block tariffs encourage users to save energy because savings are made at a higher marginal price, making energy-efficiency investment more economical.

What of the effect on voters? Will households find themselves paying significantly higher prices, or unable to secure supplies at all? On the latter fear we can be reassured by the statutory duty already in place on the gas and electricity infrastructure companies to ensure continuity of supply and to act as suppliers of last resort. It will be their duty to secure wholesale supplies sufficient to prevent interruptions. The price issue is harder to call; I cannot say what is likely to happen. The optimistic view is that supply companies will continue to see the domestic market as a ‘cash cow’ and will continue to compete for custom (largely, as at present, on price). The advent of rising block tariffs would be beneficial, not just by creating a market in which the smaller user pays lower average prices, but through the increased energy-saving efforts by major users already alluded to: what they save becomes available for smaller users.

How might a national carbon supply allocation interact with UK carbon trading, CCAs, and the EU Emissions Trading Scheme? I believe it would be completely

¹ I accept that rising-block tariffs have sometimes in practice proved ineffective or unfair. The most promising model in my mind is a ‘J’ or ‘hockey-stick’ profile in which higher marginal prices only apply when consumption is very close to the customer’s cap volume, in effect making no difference for the first (say) 95% of his consumption. The major difficulty lies in deciding an equitable quota for each individual customer. I am still grappling with that.

compatible. Players could still trade carbon credits, and although the price might be depressed by increased availability, remember that the same should have happened anyway if our climate-change programme had been successful. In relation to international trading, the scheme would be good for the UK as it would tend to increase the supply of carbon credits for export. The compatibility of my proposed national supply constraint with existing schemes means that it could be introduced as soon as the political will is there to put it into effect.

In summary, implementing our international obligations by constraining total upstream carbon supply (rather than just a proportion of emissions) should be both simpler and more effective. It is compatible with existing carbon trading, and would indeed increase the UK stock of carbon credits for export. It would promote low-carbon alternatives by giving natural incentives to companies that are well-placed to develop and implement the required supply technologies and infrastructure. New retail price regimes are likely to emerge which inflate the benefit of energy saving. True, there remains uncertainty as to the effect on households, but there are real grounds for optimism on this score and it should be borne in mind that the end result is no worse for energy users than current policies would be, were they successful. Presently, success is in doubt; under my proposal it would be assured by definition.

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