

EFFECTIVE CARBON PRICES

COUNTRY NOTE ON DENMARK: Very high costs of biofuel mandates in road transport

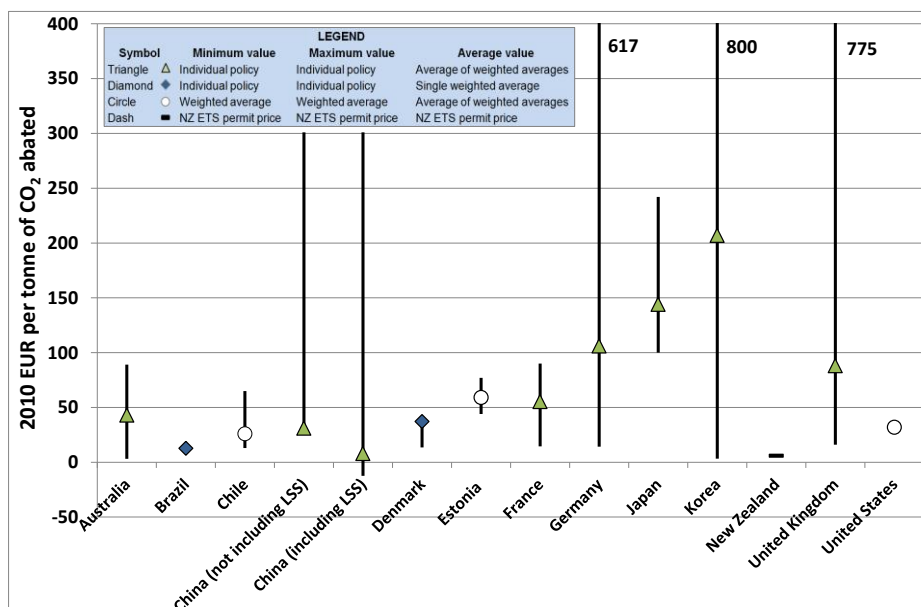
These country notes present a brief synthesis of the costs to society of reducing CO₂eq emissions in selected countries. They are based on an examination of a broad range of policy instruments used in electricity generation, road transport, pulp and paper, cement and in household energy sectors.

The 2013 OECD report on *Effective Carbon Prices* found wide variations in the costs of abating each tonne of CO₂eq within and among countries.¹ Effective carbon prices arise either explicitly via carbon taxes or emission trading systems, or implicitly via the abatement incentives embedded in other policies that influence greenhouse gas emissions. When interpreting the results, it is important to be aware that high effective carbon prices can stem from either ambitious policy or from ineffective policy. These case studies found that taxes and trading systems are generally more cost-effective than other policy instruments such as capital subsidies or feed-in tariffs.

The cost of abating greenhouse gas (GHG) emissions in Denmark varies significantly among sectors, and is relatively high in some sectors compared to other countries covered in the study.

The estimated costs per tonne of CO₂eq abated in the electricity generation sector in Denmark are relatively moderate compared to what has been found in many of the other countries covered (Figure 1). It should, however, be noticed that – contrary to what was the case in most of the countries – a cost per tonne abated was not estimated for the Danish subsidies to renewable electricity generation, the total cost of which was estimated to be close to 0.1% of GDP.

Figure 1. Estimated average effective carbon prices in the electricity sector, by country



Note: The estimate for Estonia includes only supply-side abatement. For China, “LSS” refers to the “Large Substitute for Small” programme.

1. The countries covered in the book are Australia, Brazil, Chile, China, Denmark, Estonia, France, Germany, Japan, Korea, New Zealand, South Africa, Spain, United Kingdom and United States.

In road transport, the effective carbon prices in Denmark are relatively high (Figure 2), both on average and in relation to the highest costs of any individual policy instruments applied in the country in this sector. This is largely due to the exceptionally high abatement costs estimated for the mandates for biofuel content in petrol and diesel (Figure 3).

Figure 2. Estimated effective carbon prices in the road transport sector, by instrument type

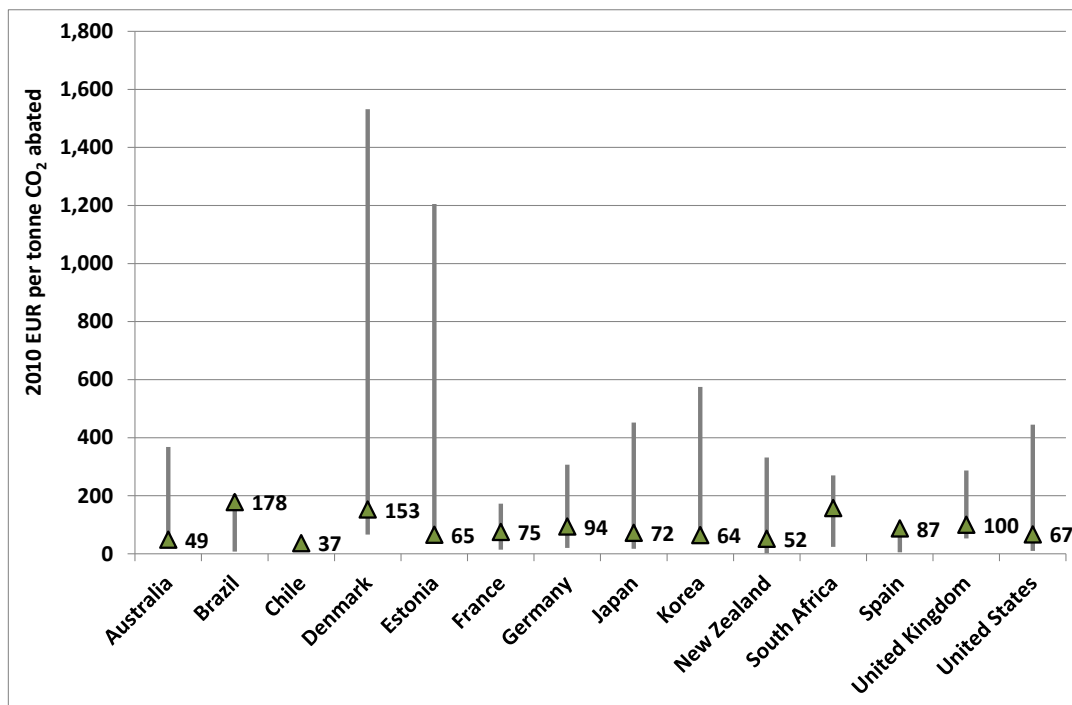
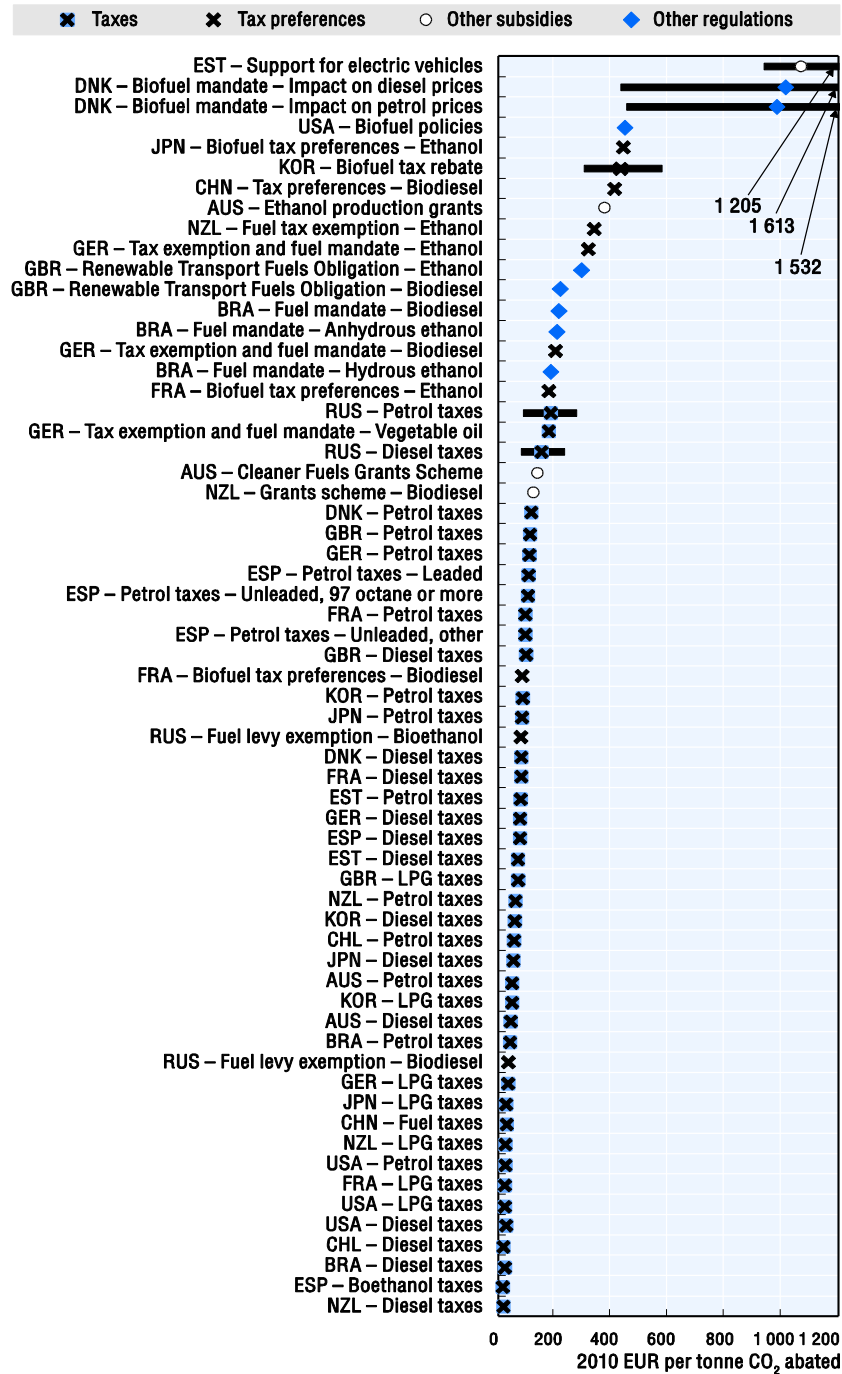
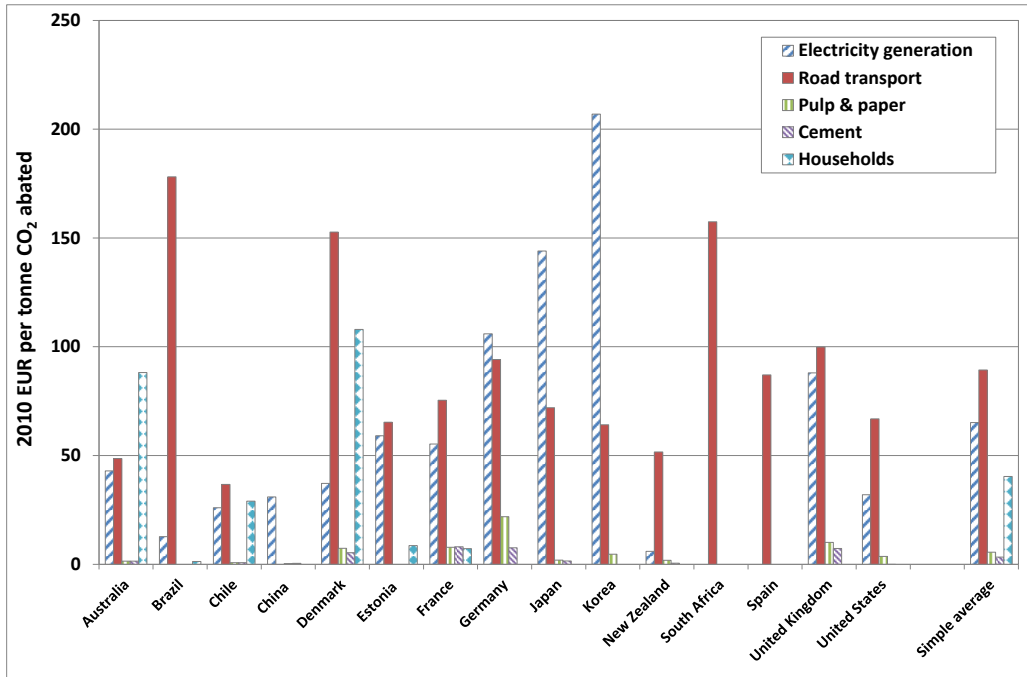


Figure 3. Estimated effective carbon prices in the road transport sector, by instrument



In the case of the pulp & paper and cement sectors, the effective carbon prices found in Denmark are much lower than in the other parts of the economy that have been studied. This is consistent with the evidence from the other countries examined in the study (Figure 4).

Figure 4. Estimated effective carbon prices in the different sectors, by country



The average effective carbon price in relation to households' energy use in Denmark is the highest across the countries studied (Figure 5). This is a result of the losses in 'consumer surplus' stemming from the energy- and CO₂ taxes on energy products used in the households. As such, this outcome is more likely to be a reflection of high level of ambitions in the policies applied.

Figure 5. Estimated effective carbon prices in the household sector, by country

