

# Commitment Paper

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Seminar: Environmental Economics

## **Title: The Distributional Impact of a CO<sub>2</sub> tax in Denmark**

**Expected content:** We examine the effects of a CO<sub>2</sub> tax reform in Denmark. Using an input-output model, data on CO<sub>2</sub> emissions on sector level and consumer survey data, we calculate the distributional impact of such a tax reform, inspired by Wier et al. (2005) and Fremstad and Paul (2019). We plan to base our theoretical framework on Klenert et al. (2016). They set up a two-sector GE-model to calculate the distributional impact of an optimal environmental tax reform. We plan to calibrate their model on the Danish economy and compare with our empirical results, as well as those of Kraka (2019).

## **Planned structure (tentative)**

1. Introduction, motivation and literature review
2. Economic theory
  - a. Theoretical framework from Klenert et al. 2016
  - b. Calibration to the Danish economy
3. Description of the input-output model
4. Empirical results
  - a. Direct distributional impact of CO<sub>2</sub> tax
  - b. Effect of different redistributions of revenue
5. Discussion
6. Conclusion

## **Literature**

Kraka og Deloitte (2019). "En klimareform der leverer de magiske 70 procent". Report.

[http://kraka.org/small\\_great\\_nation/en\\_klimareform\\_der\\_sikrer\\_de\\_magiske\\_70\\_pct](http://kraka.org/small_great_nation/en_klimareform_der_sikrer_de_magiske_70_pct)

Fremstad, A. og Paul, M. (2019). "The Impact of a Carbon Tax on Inequality", *Ecological Economics*, vol. 163, s. 88-97.

Wier, M., Birr-Pedersen, K., Klinge Jacobsen, H. og Klok, J. (2005). "Are CO<sub>2</sub> taxes regressive? Evidence from the Danish experience", *Ecological Economics* 52, s. 239–251

Klenert, D., Schwerhoff, G., Edenhofer, O., and Mattauch, L., 2016.

Environmental Taxation, Inequality and Engel's Law: The Double Dividend of Redistribution. Environmental and Resource Economics.