PBL Netherlands Environmental Assessment Agency

About Dykes and Windmills: Learning from Dutch Green Fiscal Reform

Herman Vollebergh
PBL, CentER, CESIfo

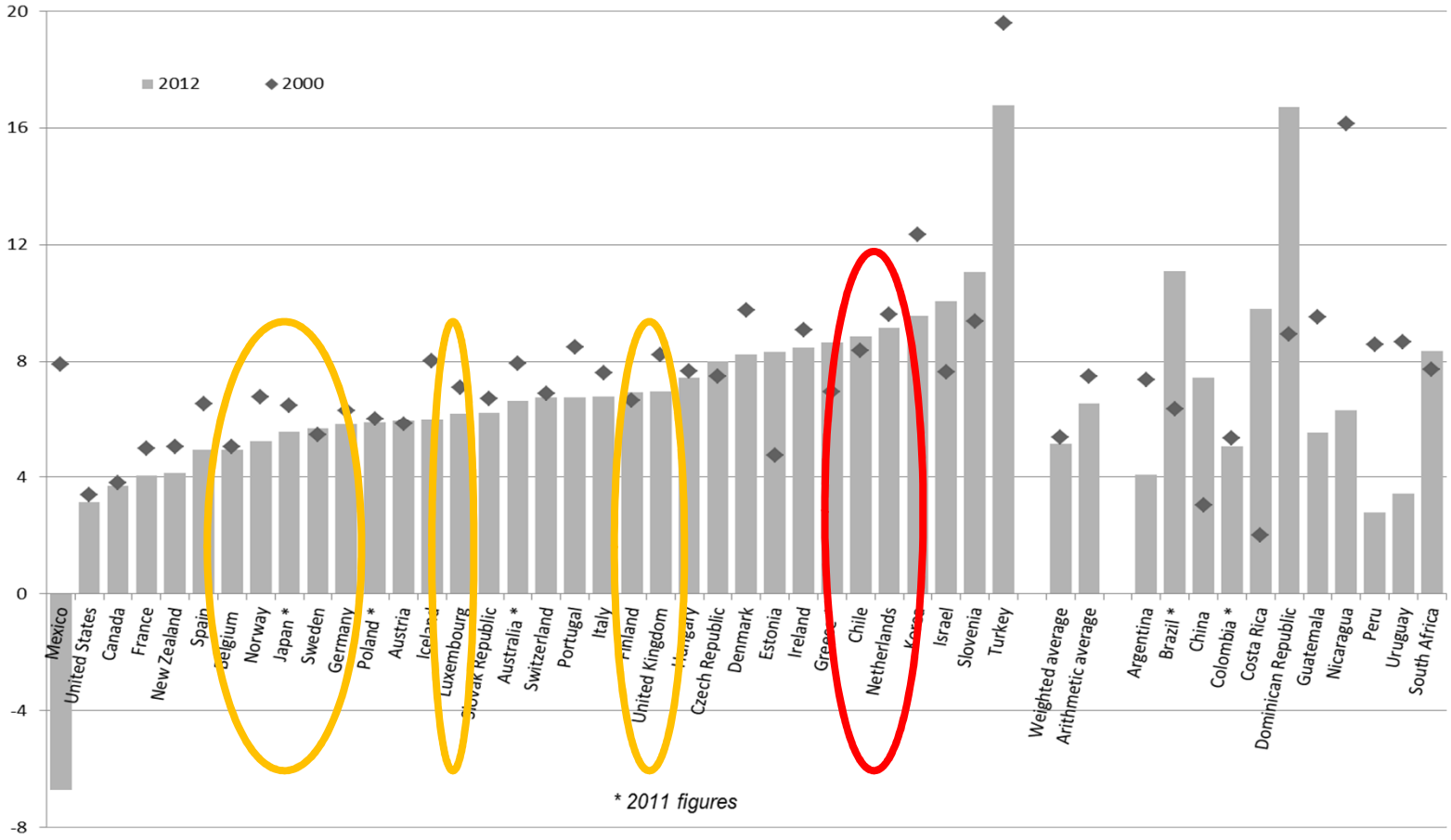
Green Growth Knowledge Platform – 3rd Conference

29-01-2015 | Vollebergh

PBL Netherlands Environmental Assessment Agency

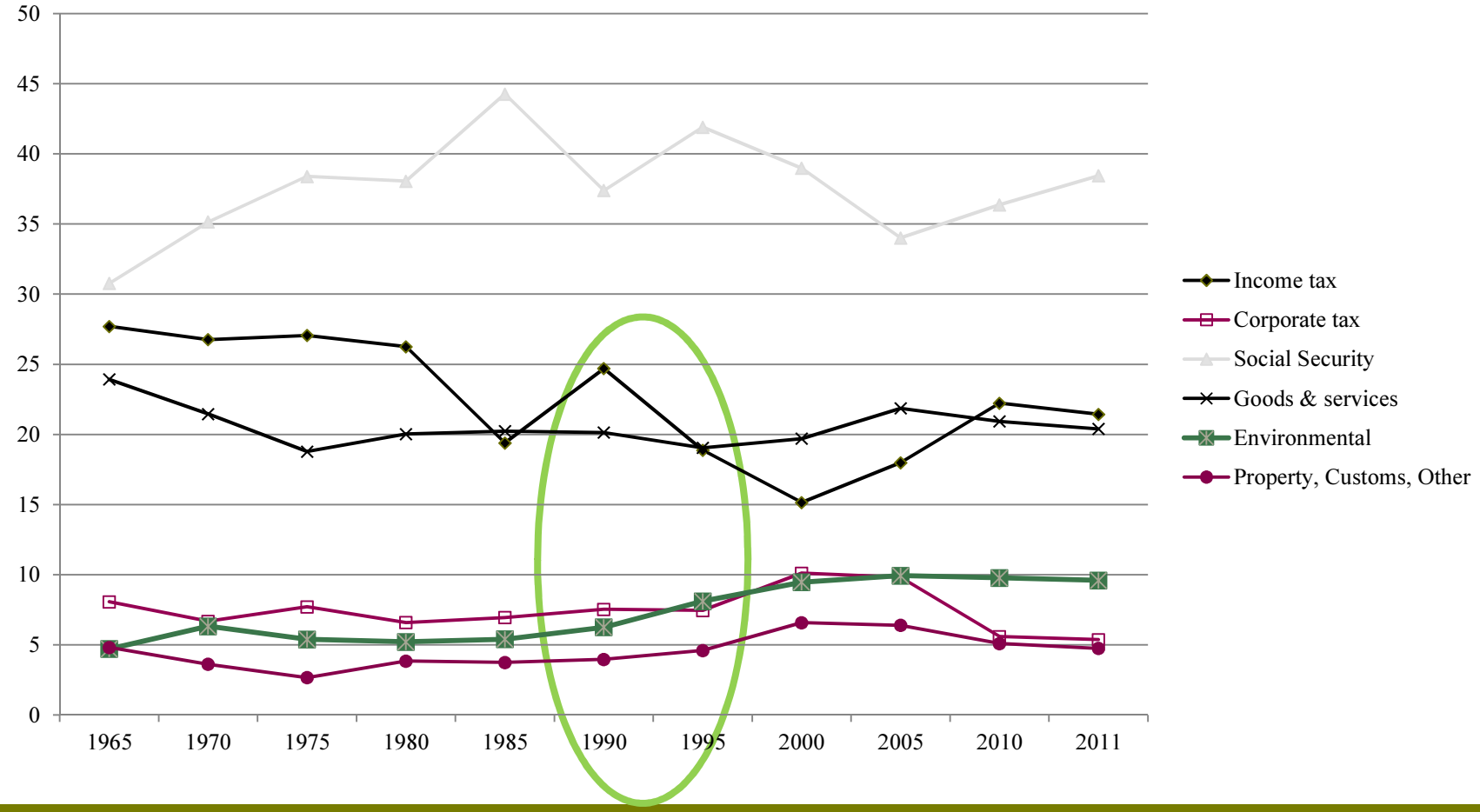
Dutch treat:

Other relative rich countries

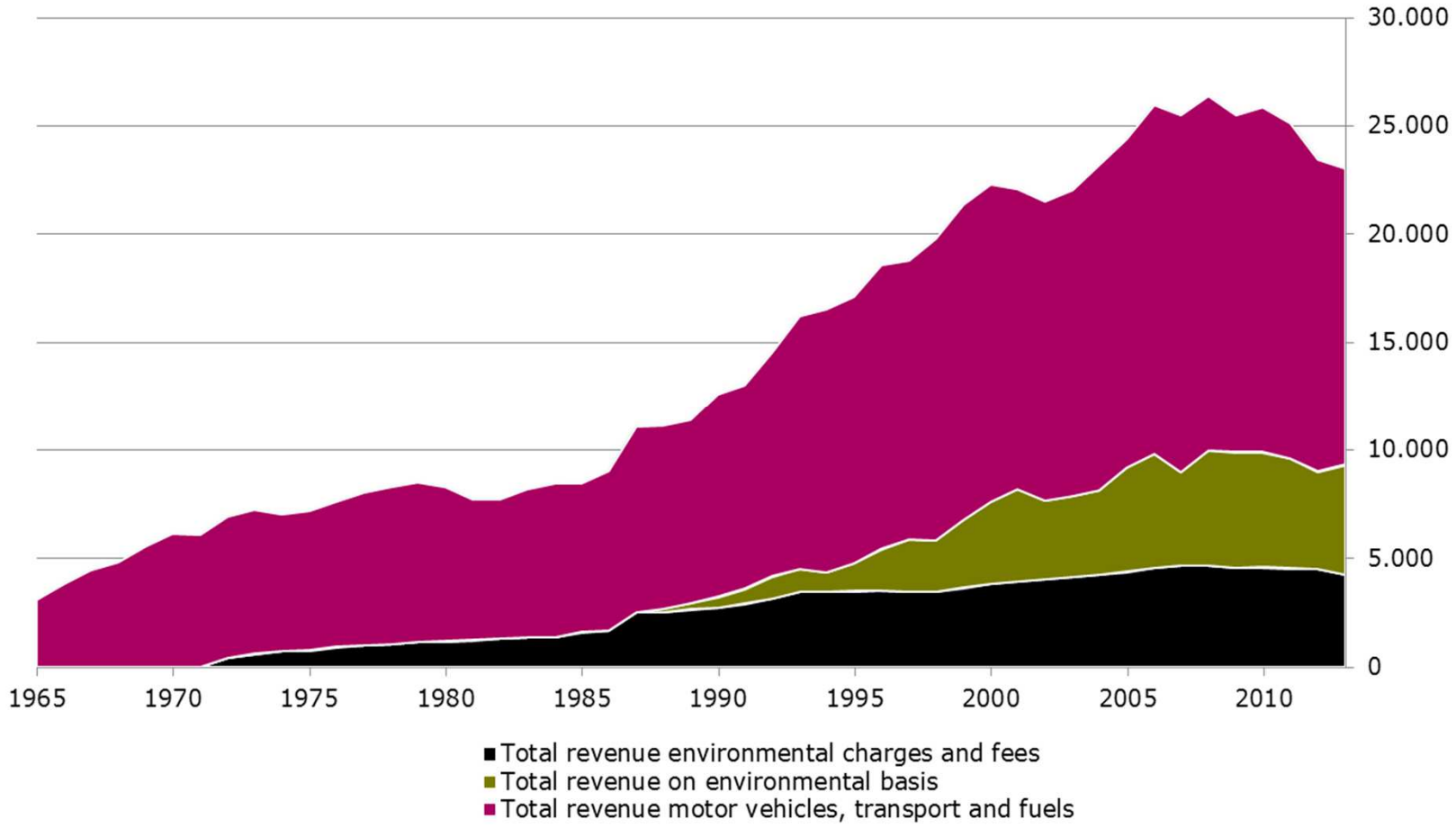


The long haul

Green Fiscal Reform?



Total Green Tax Revenue (2013 euro's)

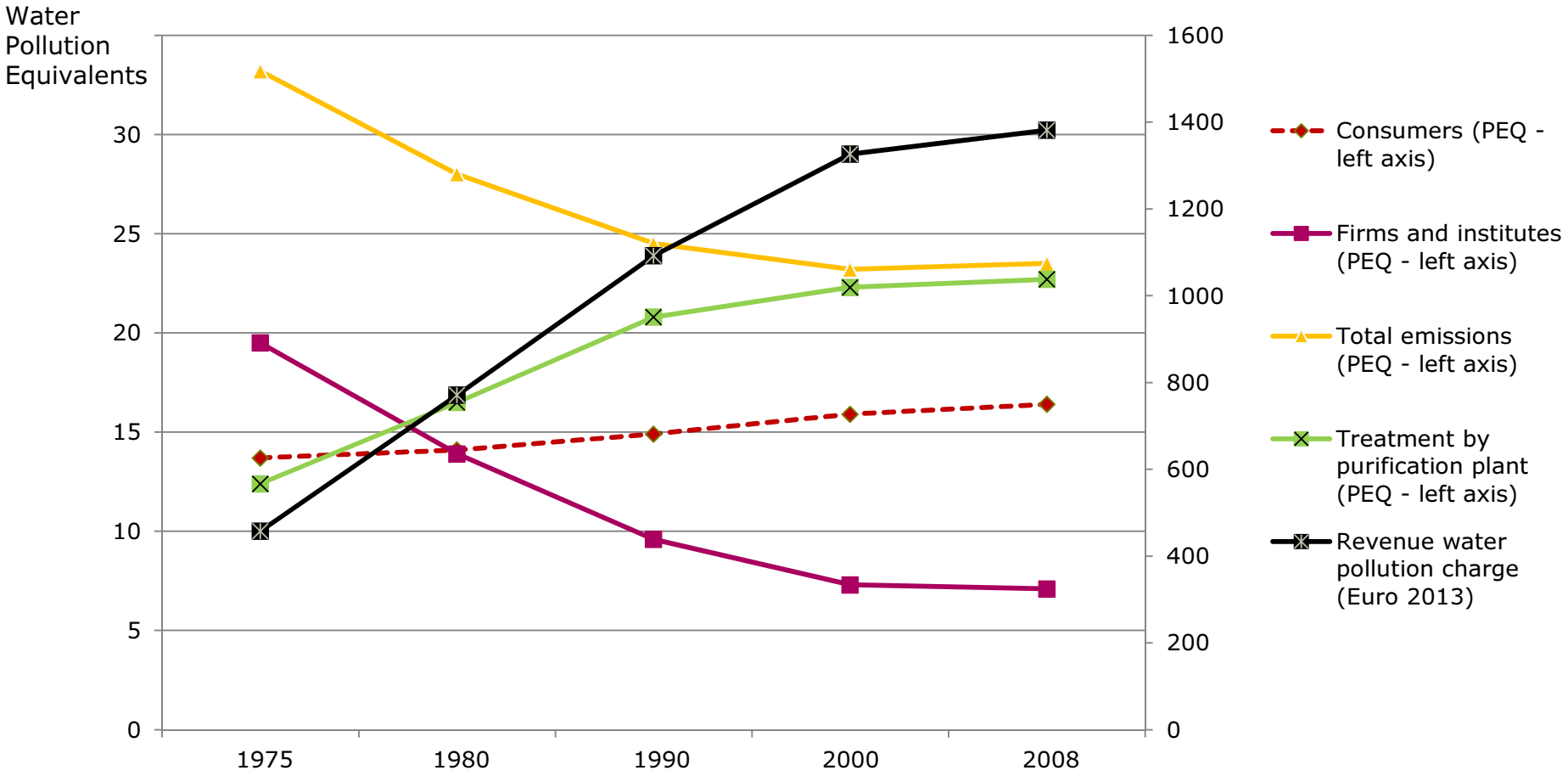


Devil is in the details!

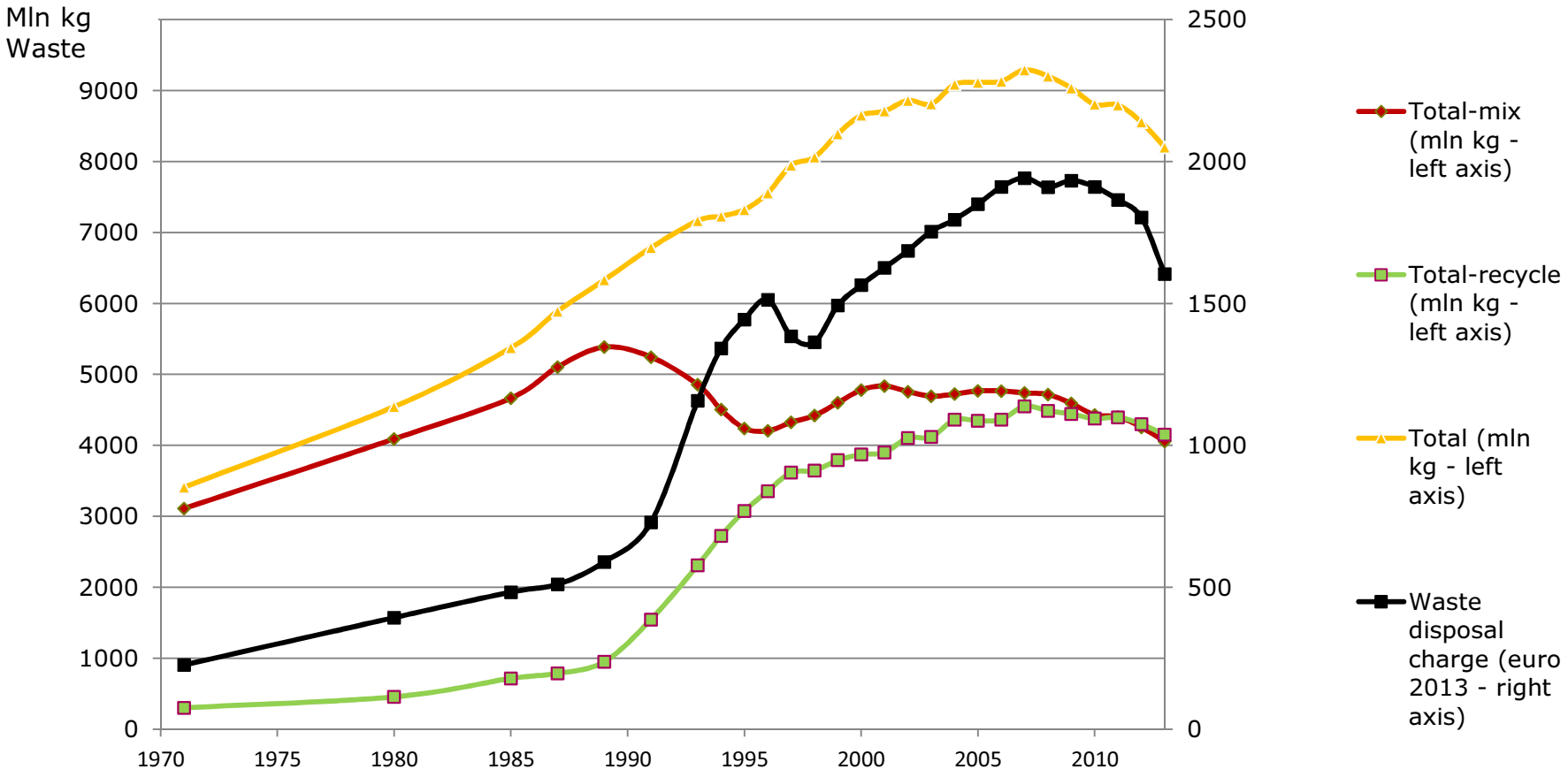
- Implementation of environmental taxes requires answers to important design questions:
  - for what *revenue reason* will the tax be imposed?
  - what is the tax *base* to be used?
  - which *unit of measurement* should be applied?
  - what is the appropriate level of tax *rates*?
  - is any *tax burden relief* (e.g. exemptions) for specific groups justified?
  - who is the *tax payer* and who could collect the tax revenue?

- Dutch green tax reform has been much more than revenue raising indicator shows!

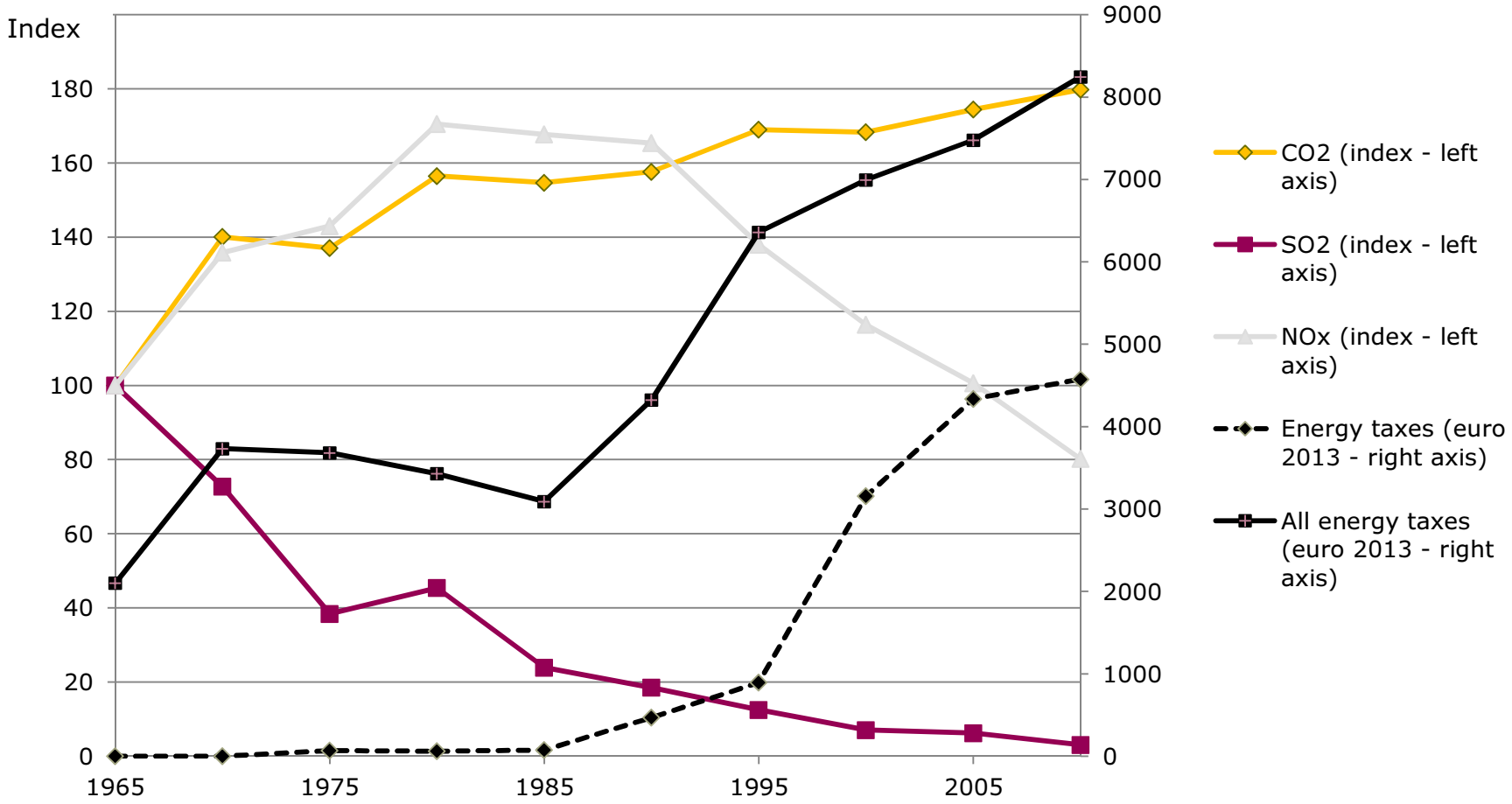
Example 1: Water



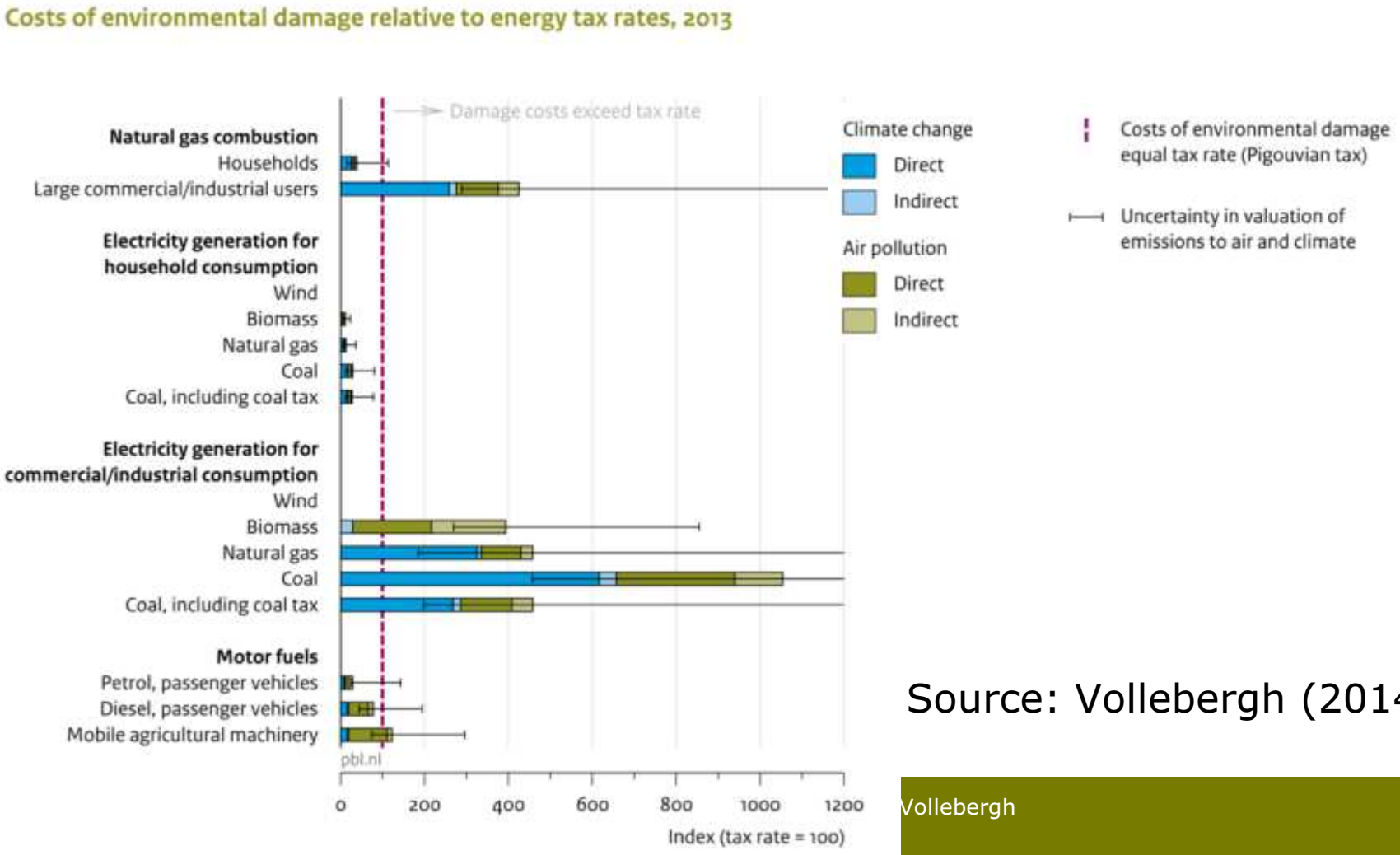
Example 2: Waste



Example 3: Energy



Pigovian estimates 2013



Source: Vollebergh (2014)

Devil is in the details

- Theory: emission reduction incentives vs transaction costs
  - Three channels: output – input – abatement

- Dutch practice:
  - Implicit carbon taxation (derived from original EU ETD)
  - Switch from taxing inputs to outputs in 1996
  - Unique non-linear tax structure
  - Compensation low income households
    - › from tax credit up to 800 m3 and kWh to lump-sum transfer
  - Implicit support for CHP
  - Subtle incentives for self-generation of electricity
  - Waste incineration and other feedstocks exempt

Main lessons

- Key element for welfare improving corrective taxes is implementation context:
  - Level of the marginal damage
  - Transaction cost of implementing (new) taxes

- Choice of tax base determines (long run) incentives
  - A better targeted environmental tax base less likely raises stable tax revenue in the long run

- Ability to properly enforce taxation is key
  - Initial transition to fossil fuels facilitates enforcement due to its trading on observable markets
  - Monitoring practical for both environmental and tax authorities

Some selfish references

- The devil is in the details (incentives matter … a lot)
  - Smulders and Vollebergh (2015, forthcoming), Corrective taxation and administrative costs
  - Vollebergh (2013), Environmental Taxes and Green Growth
- On Pigovian estimates:
  - See Vollebergh (2015, forthcoming), Green Tax Reform: Energy Tax Challenges for the Netherlands
- Examples:
  - See Vollebergh (2007), Lessons From the Polder: Energy Tax Design in the Netherlands from a Climate Change Perspective?, Ecological Economics
  - Aalbers and Vollebergh (2008), An Economic Analysis of Mixing Waste, Environmental and Resource Economics