The Dutch methodological approach for national energy savings and related ghg emissions reduction for sectors and policies

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Contents

- Introduction
- Overview of sectoral approaches
- Generic policy measures approach
- Allocation & double counting
- Discussion

Introduction of the Dutch Case

- Dutch climate and energy goals:
- 2050: 95% less ghg compared to 1990
- 2030: 49%
- 2014 to 2020: 482 PJ
- 2021 to 2030: 924 PJ (current) and 1,292 PJ (EC proposal)
- EED7 Cumulative character: taking into account lifetime savings made in years 202x to 2030

Introduction of the Dutch Case

- Focus on CO_2-emissions reduction
- 50+ policy measures contribute to energy savings
- Systems approach: include instrumental measures
- Methodology = sector-specific and generic measures aggregated at sectoral level
- Calculations = mainly technical estimates

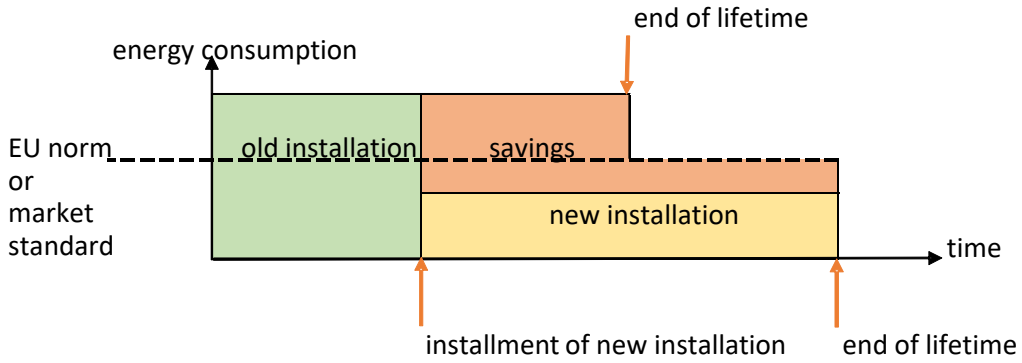

Figure 1: Schematic visualisation for determining energy savings in the case of early replacement

Overview of sectoral approaches

- Built environment
  - Modelling: market data; surveys & behavioural studies
- Horticulture
  - Bottom-up approach: data on applicable policy measures (type, the expected savings, energy use before and after implementation).
- Mobility
  - Bottom-up tech estimates. Based on: driven kms, fuel consumption/km, sales of new passenger vehicles etc.
  - Surveys used to account for modal shifts.
- Industry
  - Bottom-up tech estimates. Data from various (generic) policy measures

Generic measures approaches (I)

- **ISDE** - Sustainable energy grant
  - Financial contribution: solar boilers, heat pumps, insulation etc.
  - For individuals & businesses.
  - Bottom-up data collected (e.g. capacity heat pump). Expected heat production & e-consumption determined using assumptions on typical energy savings per technology.
  - Energy savings = heat production – electric consumption (=ambient heat)

Generic measures approaches (II)

- **EIA** - Energy Investment Allowance
  - Tax scheme to deduct 45% of investment from taxable profit.
  - Designated operating assets: energy-efficient, generate renewable energy, energy balancing and energy transition (such as electrification).
  - Bottom-up data and assumptions on typical energy savings per technology.
  - Energy savings = difference between new consumption and old consumption.

Generic measures approaches (III)

- **SDE++ -** Stimulating Sustainable Energy Production and Climate Transition
  - Subsidy for large scale production of sustainable RE, or for applying CO_2-reducing techniques.
  - Covers the unprofitable part of each technology
  - Technical estimates used for both the realized and expected savings with data in the subsidy decision, production data is available.
  - Savings on the consumption of heat (e.g.) = avoided consumption of natural gas that produces the same amount of heat (final).

Calculation for CO_2 emissions reduction

- Information on the (avoided) energy carrier is based on the (reference) techniques used.
- Avoided CO_2 emissions =
- (emissions factor) x (amount of energy produced normally) - (emissions factor) x (amount of energy produced avoiding the consumption of fossil)
- Special attention to CO_2 reducing technologies!

Allocation of savings

- Chamber of Commerce (KvK) numbers
- Sectoral NACE classification codes provided with each project.
- All generic measure information is linked to a sector based on the sectoral NACE code.

Accounting for double counting

- Overlaps between generic policy measures and sectors.
  - E.g. subsidy and a tax advantage
  - Savings from two policy measures with: same year, company, physical location = counted once

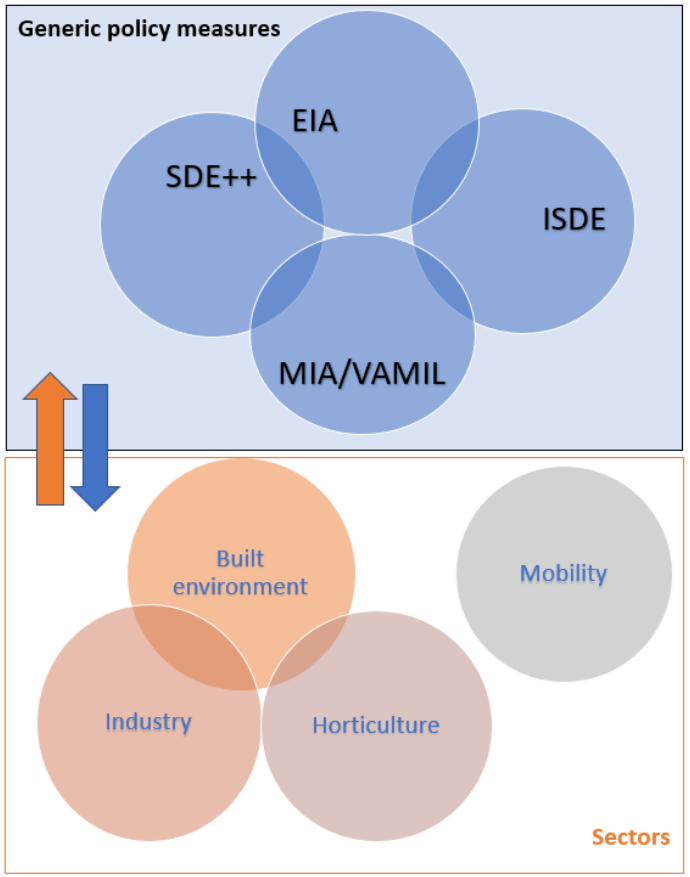

Figure 2: simplified possible double counting

Discussion and conclusion

- Systems approach includes instrumental policy measures (interaction), but is cumbersome (extra steps)
- Approach relies heavily on bottom-up data
- Storage of monitoring data is currently fragmented
- No common data collection agreements between measures

What elements from your methodology would you suggest the Netherlands to look at?

Additional resources

- Paper: https://oxford-abstracts.s3.amazonaws.com/065b1590-28d9-4c24-b4d3-def580b45d48.pdf
- Linkedin: https://www.linkedin,com/in/bonnyvanrooijen
- NECP of the Netherlands: https://ec.europa.eu/energy/sites/ener/files/documents/nl_final_necp_main_en.pdf
- Climate and Energy Outlook: https://www.pbl.nl/kev
- SAWEC model: https://www.pbl.nl/modellen/kev-rekensysteem-sawec
- EVA model: https://www.pbl.nl/modellen/kev-rekensysteem-eva
- SAVE model: https://www.pbl.nl/modellen/kev-rekensysteem-save-services