



Responsible authority: Ministry of Environment and Energy, Sweden

Managing body: Swedish Tax Agency

General information

Sweden is, as their main instrument for achieving Article 7 objectives, using energy and carbon taxes. Although other measures introduced by the state also influence the total savings and contribute to their amount, Sweden decided that their primary measure is taxation.

Energy tax exists in Sweden since 1950s, at first for the fiscal reasons mainly, but from the 90s it is used for the environmental purpose. Nowadays, Sweden has energy and climate taxes, due to its energy efficiency and climate objectives.

From the middle of 2018, the main taxes Sweden uses for achieving energy and climate goals are:

- Energy tax: fuel excise, applied to all fossil fuels;
- CO₂ tax: explicit carbon tax applied also to fossil fuels, with rate defined per tonne CO₂;
- Electricity excise tax: applied by kWh, to all sectors, but more to households and commercial sectors than, for example, to agriculture;
- EU ETS sectors are not covered by the CO₂ tax – with the exception of district heating plants that are subject to a reduced CO₂ tax rate.

In order to achieve savings and motivated by higher prices of energy due to taxation and since, to be calculated as Article 7 contributions, savings have to be achieved through the introduction of something new – of a new measure, **behaviour changes are introduced, along with investments in energy efficient technology.**

The energy tax covers:

- Taxation on electricity for those who generate and supply electricity – tax rates are adjustable and decided upon, not fixed in time;

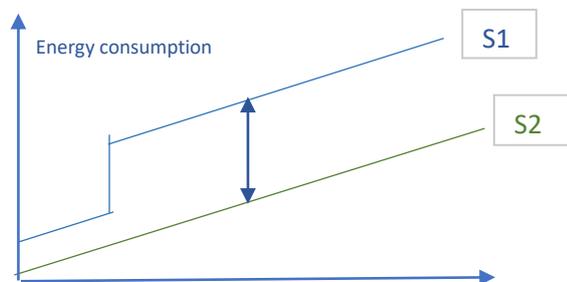
Organization and MRV

The energy savings calculation includes only savings that are credited as the result of the price difference arising from the situations where Swedish taxes are higher than EU minimum.

Simplified calculation is done by multiplying the price difference with the energy consumption. Such saving has to be achieved via a new measure. This is not an issue since energy and carbon taxes in Sweden are much higher than EU level for a long period of time. The only question that concerns the authorities is what is the date used as the beginning of calculations.

So, to calculate the saving, they are using MRV method where the “baseline” scenario with the lower taxes is compared with this scenario.

The price difference due to taxation results in short- and long-term energy savings. So, when calculating saving, they are taking into consideration that savings might not be achieved within the first year of the project. Therefore, although linear model is used (if the connection of long- and short-term price elasticity is not known), for some cases, the savings will not be visible yet and not for future ten plus years.



*S1: Scenario with introduction of EU minimum taxation levels in 2014 and immediate adaptation;
S2: Scenario maintaining Swedish taxation levels
Difference represents annual energy savings.*

Benefits of taxation include reduced emissions that can be combined with long-term economic effects. They also are of low cost, when compared to ETS (for organization and administration).



- Taxation of fuel, determined on the basis of changes in price index;
- The industrial, combined heat and power, agriculture, forestry and aquaculture;
- For diesel, the industrial sector pays the full energy and carbon dioxide tax, while the agriculture, forestry and aquaculture sectors pay the full energy tax, but pay a lower level of carbon dioxide tax.

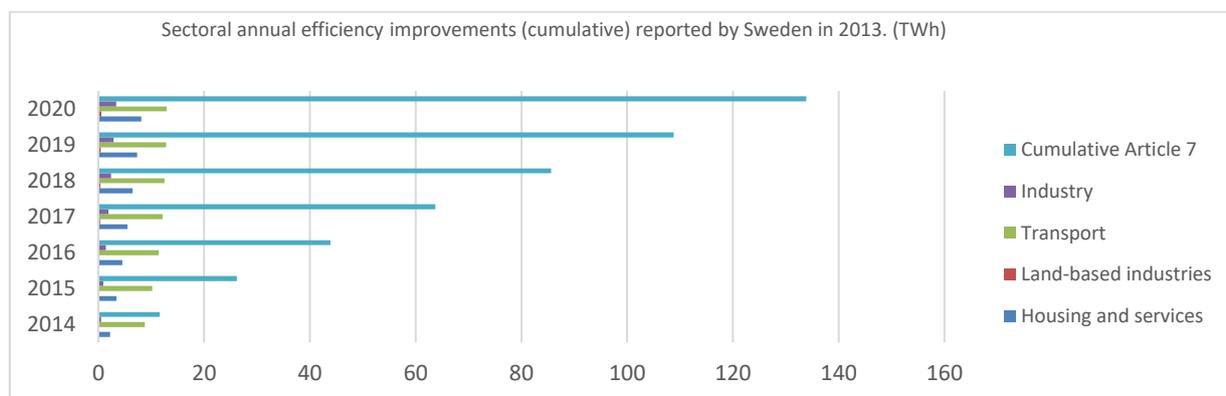
For households specifically, the benefits include that the heating fossil fuel use dropped from 1990 to 2% of total Sweden's greenhouse gas emissions.

It is replaced with wood and waste district heating, wood (pellets) and heat pumps as individual heaters.

Fossil fuel in transport sector represents a major challenge, so there are additional measures in consideration.

All consumption sectors are included.

Overview of the policy mix reported by Sweden for Article 7



All alternative measures

1. Energy taxes and carbon dioxide taxes;
2. Municipal energy and climate advice- energy and climate advice provided by the municipality, paid by the Swedish Energy Agency;
3. Sustainable Municipalities (Uthållig kommun)- cooperation programme for strengthening the institutional capacities of municipalities to implement local energy and climate plans;
4. Regional climate and energy strategies- development and implementation of regional energy and climate;
5. Strategies by county administrative boards;
6. Energy audit checks- for companies with an energy consumption in excess of 500 MWh; Programme for energy efficiency in electricity-intensive industries- promoting energy efficiency among Swedish energy-intensive industrial companies;
7. Network management in industry- to raise awareness of how to make energy consumption more efficient;
8. Technology procurement;
9. Information initiatives;
10. Environmental inspections and inspection guidance.

More information:

<https://www.sciencedirect.com/science/article/abs/pii/S1364032118301047>

<https://www.government.se/492a01/contentassets/419eb2cfa93423c891c09cb9914801b/200224-carbon-tax-sweden---general-info.pdf>

https://ec.europa.eu/energy/sites/ener/files/se_neeap_2017_en.pdf

<http://www.oecd.org/tax/tax-policy/taxing-energy-use-sweden.pdf>

https://ec.europa.eu/energy/sites/ener/files/documents/article7_en_sweden.pdf

Interview with Fredrik von Malmborg

Deputy Director
Government Offices of Sweden, Ministry of Infrastructure

Have there been changes in the energy and carbon taxes in the recent years? (or in the policy measures accompanying the taxes)

Changes are made regularly in the Swedish energy and carbon taxes. Recent changes that took place are in the transport and industrial sectors. The tax on electricity was also increased by approximately 15 % in two steps in 2017 and 2019, following the multi-partisan energy policy agreement in 2016. In addition, regular adjustments are also made in accordance with Consumer Price Index (CPI) and GDP growth.

Have there been changes in the way that the effects of the policy are monitored?

The Swedish Energy Agency has recently taken greater role in monitoring the outcomes in terms of energy efficiency achieved. Overall monitoring is carried out by Swedish Taxation Board.

What success factors have you identified?

Overall reduction in the fossil fuel use. Specially in the households and industrial sectors. There are also increased investments in heat pumps in dwellings to reduce the use of electricity for heating.

Are there interactions with other policies?

Yes, to address market imperfections and energy efficiency targets Sweden applies different complementary policy instruments even though energy, carbon tax and EU-ETS are the main general economic instruments. Examples of other policy instruments are energy performance regulations, different informative instruments, energy step (where large companies that have made an energy audit can get financial support for investments in energy efficiency), industrial leap (financial support to companies for reducing use of fossil fuels), a national

programme to support energy efficiency in small and medium sized enterprises, Local climate investment program, technology procurement.

Is there any expected modification under discussion?

No, not at the current situation. The Government's proposal for implementing the requirements on energy savings obligations in the EED was sent for public consultation. The majority of respondents are in favour of the Government's proposal, which will be reported to the Commission in Sweden's Integrated Energy and Climate Plan at the end of the year.

If you could go back in time, what would you do differently?

Taxation could have been made even more simple with less exemptions and reductions in the very beginning.