

Report summary:

Economic analysis of the ETS Market Stability
Reserve effects on Finnish electricity price

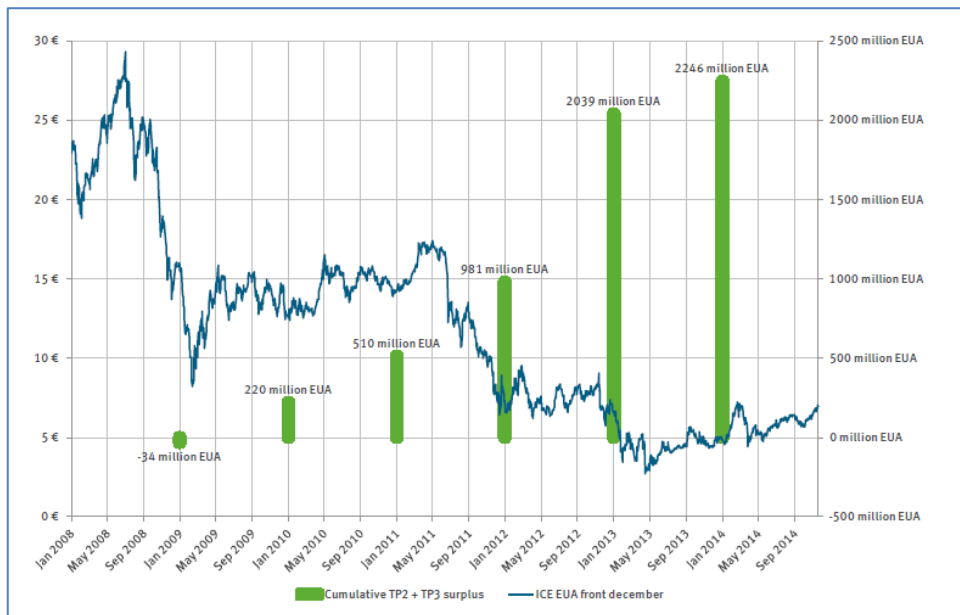
Finland

June 2015

Government's Analysis and
Research Publications 9/2015

- English Summary

In recent years the EU emissions trading system (EU ETS) has suffered from a large amount of excess emissions allowances largely caused by weak emission reduction targets, slowdown of economic activity, and the inflow of carbon offsets. In the current circumstances, the EU ETS is not providing an effective price signal to drive the investment needed over the next decade to meet the EU's longer-term emissions reduction goals. Currently, the EUA price level is at level of 7.5 euros.



Measures to fix the problems of the EU ETS are necessary to meet the European decarbonisation targets. The 2030 Climate & Energy package will change the trajectory of the emission cap and the way allowances within the cap are distributed.

The European Commission's legislative proposal of 22 January 2014 provides a rule-based mechanism for controlling the annual auction budgets in the EU ETS in the form of a **Market Stability Reserve (MSR)**. The member states permanent representatives endorsed the informal agreement reached between Council and European Parliament representatives on the decision concerning the establishment and operation of a market stability reserve (MSR) at their meeting on 13 May 2015.

The market stability reserve uses both the surplus and price increases as a trigger. The mechanism is designed as a rule-based mechanism that withdraws and injects allowances in the market through auctions under pre-defined conditions

- If the surplus in the market exceeds the upper threshold of 833 million allowances, allowances equal to 12% of the allowance surplus are withheld from future auctions.
- If the surplus in the market drops below the lower threshold of 400 million allowances, 100 million allowances, or everything in the reserve if less than 100 million allowances remain, are injected in to the market through increasing the future auction volume.
- If the surplus does not drop below 400 million, but if for more than six consecutive

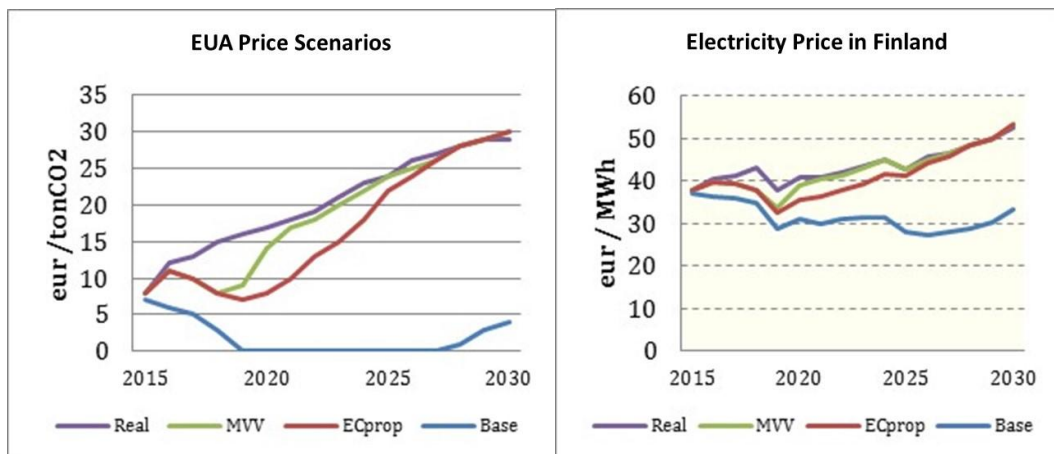
months, the price of allowances is three times higher than the average price during the preceding two years, up to 100 million allowances in the reserve are also injected in the market through future auctions.

The Prime Minister's Office of Finland commissioned a study on the effects of the MSR on Finnish wholesale electricity price level. The report supports the decision making of the Finnish government on EU ETS related questions. The study assessed effects of the MSR on Finnish and Nordic electricity markets and also analysed different factors that affect the electricity price development. The report (in Finnish) can be downloaded at the website of the Prime Minister's Office of Finland¹.

Four different scenarios of MSR implementation were used as basis for electricity market model simulation. The model covers generation and transmission capacities of the Nordic electricity market. The study utilised Thomson Reuters scenarios on EUA price development. The MSR scenarios were:

- Original commission proposal, MSR 2021 and backloading return (ECprop in below figure)
- Early implementation of MSR in 2017, the German proposal (Real in below figure)
- The currently most probable scenario starting in 2019 (MVV in below figure)
- No MSR implementation at all and low economic growth (Base in below figure)

The figures below illustrate the EUA scenarios on the left and the simulated Finnish electricity prices on the right.



The Finnish area price converges towards the Nordic system price level after 2019 (until that Finnish price level remains higher). The following factors affect this development:

- Increase of low marginal cost renewable energy sources (especially wind energy) and the new nuclear generation unit (Olkiluoto 3) which increase Finnish supply.

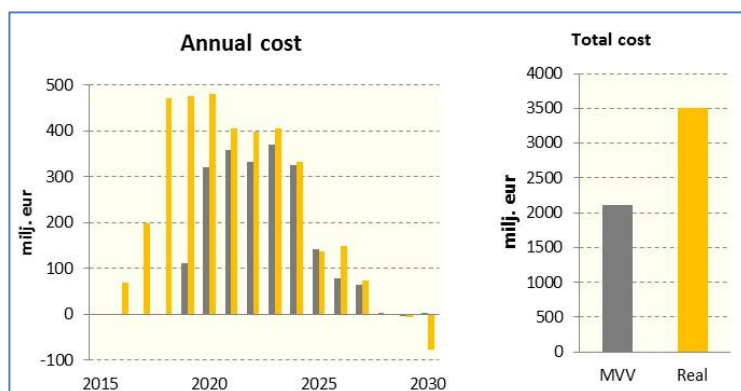
¹ <http://vnk.fi/julkaisu?pubid=6601>

- The new MSR-mechanism increases the EUA price and raises European electricity price level more than the Nordic price level, which leads to increase in the relative competitiveness of the Nordic electricity market. The Nordic vs. European price difference will narrow as a result of this development.
- Increase of Finnish-Swedish electricity transmission capacity. This would narrow the current price difference.
- Price elasticity of the electricity demand

The model simulations assumed that there will be new entry of zero CO2 emission generation with low marginal cost to the the Finnish electricity market during the simulation period². Such generation are the new nuclear units and wind power.

The main conclusions

1. Finnish electricity price converges to the Nordic system price after 2019.
2. Nordic electricity as a whole will improve its competitiveness relative to the other European electricity as the MSR raises the other European electricity price relatively more than the Nordic price (which has very large share of hydro and wind power).
3. The MSR raises the wholesale price of Finnish electricity. The most probable scenario (the introduction of MVV in 2019) will lead to cost of about 2 billion Euros due to the electricity price rise during 2015-2030. The annual cost is at its highest, about 300 million Euros, at the beginning of 2020s.



The costs are calculated as relative cost to the original Commission proposal (implementation in 2021). The earlier implementation of the MSR (in 2017/Real scenario) led to higher costs than the current proposal of MSR starting in 2019 (MVV).

4. The model simulations support the MSR implementation in 2019 as has been planned. The MSR mechanism supports also better working of the Nordic electricity market as the market wide system price seems to be achieved in Finland after 2019 (as noted above, other factors affect this as well). When assessing the overall costs of the MSR mechanism to the Finnish economy, the costs due to the MSR should be compared to the cost created by alternative ways of achieving the desired emissions reductions.

² See appendix of the original study

