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Green Tax Homework Assignment - Finland

Section 1. Environmental Taxation in Finland

In 1990, Finland was the first country to introduce a CO2 tax based on the carbon content of fossil fuels, pioneering environmental policy. Over the years, this tax system has went through various transitions and stages. For instance, in 1994 this tax policy was redesigned, breaking it up into two components consisting of an energy content (25% of the tax) and a CO2 content (75% of the tax). This helped to internalize the externalities involved in nuclear and to reduce the advantage of nuclear power production. As a result of the carbon and energy tax, CO2 emissions were reduced by over 7% (57 mil tonnes) between 1990-1998. Other developments in this taxation include the tax rate of EUR 1.12/tonne CO2 in 1990 increasing to EUR 20/tonne CO2 in 2010, due to numerous influences including EU policy and political aims. Furthermore, the CO2 tax was then divided between types of usages; the rate on transport fuels was EUR 70/tonne CO2, while EUR 54/tonne for heating purpose in 2016.

Another successful environmental policy in Finland was the Finnish packaging tax and deposit refund system that was introduced in 1994. To incentivise participation in the deposit refund system, a lower tax rate is given to those registered under a deposit refund system. Like the CO2 tax, this packaging tax has transitioned throughout the years. In 2005, only refillable bottles in a deposit refund system were exempt from tax, but in 2008 one-way containers in the refund system were also exempt from the tax. This alteration has caused a switch from refillable to one-way containers in Finland. Due to the high tax rates, the deposit refund system has been successful. In 2015 Suomen Palautuspakkaus Oy (PALPA), the largest deposit refund system operator, achieved 89-95% return rate for one-way packaging in Finland.

Many other environmental policies have been implemented in Finland, such as a vehicle tax (1994) and peat tax (1994). The success and outcome of various Finnish environmental policies have a wide range. Overall, Finland pioneering the first CO2 tax and implementing a very successful deposit refund system has allowed for social learning to occur.

Section 2. Peat Tax as an Environmental Tax Instrument in Finland

While Finland is well aware of the negative impacts that peat plays on the environment, the use of peat still remains a very controversial topic. Finnish politics dictate the tax on peat, without consideration of the effect that peat has on CO2 emissions and its energy content. Consequently, the topics of Finland's energy security and employment is what influences the tax rate on peat. Finland wants to ensure its comparative advantage with peat and wood biomass in comparison to non-domestic fossil fuels such as coal. Additionally, employment is given to many individuals in rural areas in Finland due to harvesting peat. As a result, Finland has kept its peat tax much lower than environmentally necessary. As figure 2 shows, due to Finland keeping its peat taxes low, peat production and use increased greatly during the 1980 to 1990s, but is starting to level out, but highly fluctuating, in the 2000s.

A peat tax for energy purposes (heat) was implemented in 1994, but the use of peat for electricity purpose, or other energy sources, was/is not taxed. The peat tax rate was deliberately

kept low (politics) in 1990's at EUR 0.35/MWh, and was increased to EUR 5.9/MWh in 2015. However, in 2016, the rate was cut back down to 2012 levels of EUR 1.9/MWh due to political power. To put this in perspective, if peat wasn't politically controversial, and was taxed like all other energy sources in Finland, the tax on peat would be around EUR 19-20/MWh for heat production and EUR 13-14/MWh for heat and electricity production.

Additionally, politics further affect the energy use of peat due to the FInnish government being in charge of the amount of subsidies distributed. The peat subsidy has been increasing in the past years, and ranged from EUR 109-129 million per year from 2009 to 2012 (Figure 4). This rising subsidy means that less taxes are coming in from peat use and further encourages peat use due to the lower costs.

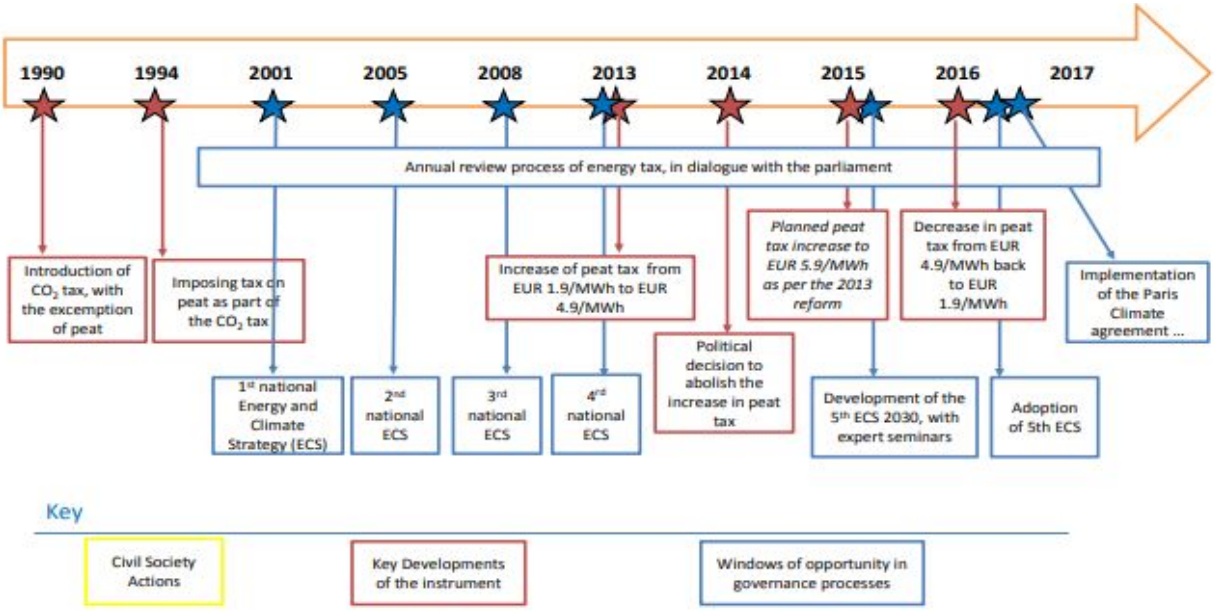

Figure 1. Timeline of key events on peat tax in Finland
Source: https://ieep.eu/uploads/articles/attachments/beabb12b-3656-49c3-8c9a-bd332983a3ce/FI%20Peatland%20Tax%20final.pdf?v=63680923242

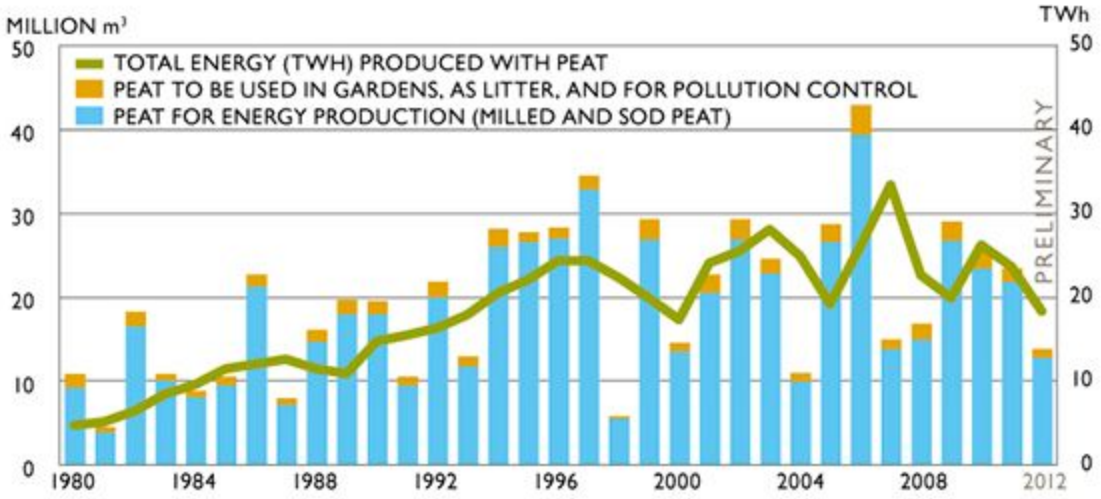

Figure 3. Peat production in Finland 1980-2012.
Source: https://www.ymparisto.fi/en-US/Maps_and_statistics/The_state_of_the_environment_indicators/Natural_resources/Peat_production_decreasing_in_Finland(28239)

Tax	Year 2013 (EUR million)	Year 2014 (EUR million)
Gasoline	1,296	1,302
Diesel	1,272	1,250
Fuel oil (light)	306	265
Fuel oil (heavy)	63	52
Coal	118	102
Peat	**36**	**40**
Gas	131	119
Electricity 1	689	724
Electricity 2	259	258
Pineoil	0.1	0.1
Petrol (aviation)	0	0.1
Gasoline (aviation)	0.8	0.7
Metanol	0.4	0.2
Total	**4,171**	**4,113**

Figure 3. Revenue from energy tax in Finland 2013-2014 with tax level of EUR 4.9/MWh
Source: https://ieep.eu/uploads/articles/attachments/beabb12b-3656-49c3-8c9a-bd332983a3ce/FI%20Peatland%20Tax%20final.pdf?v=63680923242

Year	Subsidy (million EUR)
2009	109
2010	109
2011	128
2012	129

Source: Rauhanen 2011, in Hyyrynen 2013

Figure 4. Development of total annual peat subsidy in 2009 – 2012
Source: https://ieep.eu/uploads/articles/attachments/beabb12b-3656-49c3-8c9a-bd332983a3ce/FI%20Peatland%20Tax%20final.pdf?v=63680923242

Section 3. Peat Tax Effectiveness

The peat tax is ineffective for many reasons. One reason is that the tax rate is not based on valuation of the harm caused on the environment from peat use, but based on politics. This can be seen through the increase use of peat increasing, and the much lower revenue from peat tax (lower tax rate and higher subsidies). The peat tax is also ineffective because it does not take advantage of the Double Dividend Hypothesis. The first dividend is not being fully met because the tax rate is too low. Furthermore, the second dividend of the tax revenue (EUR 36-40 mil per year) is not being used appropriately. The revenue obtained through this tax in placed into the State's general budget, and is not designated for a particular purpose, such as to further protect the environmental. Overall, the political controversy over peat has lead to this policy to be ineffective in addressing the harm that peat causes to the environment.

Resources:

https://epthinktank.eu/2015/07/14/environmental-taxation-in-the-eu/

https://ieep.eu/uploads/articles/attachments/9d526526-d22b-4350-a590-6ff71d058add/FI%20Deposit%20Refund%20Scheme%20final.pdf?v=63680923242

https://ieep.eu/uploads/articles/attachments/beabb12b-3656-49c3-8c9a-bd332983a3ce/FI%20Peatland%20Tax%20final.pdf?v=63680923242

http://www.oecd.org/env/tools-evaluation/environmentaltaxation.htm

https://www.stat.fi/til/yev/index_en.html

https://www.eea.europa.eu/publications/environmental-taxation-and-eu-environmental-policies

https://vnk.fi/documents/10616/622996/J0400_Environmental+and+Energy+Taxation+in+Finland.pdf/bf880b78-6d64-461e-92c1-c823904bbb94?version=1.0

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http://ec.europa.eu/environment/enveco/taxation/pdf/ch12_packaging.pdf

https://www.eolasmagazine.ie/packaging-tax/

https://www.ymparisto.fi/en-US/Maps_and_statistics/The_state_of_the_environment_indicators/Natural_resources/Peat_production_decreasing_in_Finland(28239)