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LESSON PLANS (Teacher Plan 2)

Title: EU Climate Change Policy

Section 2- EU Domestic Policy

European Union Domestic Climate Goals

Introduction:

Since 1990, the EU has made it a key priority to become the world leader in reducing greenhouse gas emissions (GHG) and transitioning to a low-carbon clean (green) economy. The task has proven to be extremely complicated, yet the EU has formulated a substantive plan, with all 28 member states, to combat climate change. While huge challenges exist within the EU such as the euro-fiscal crisis, and the refugee crisis, climate change is often regarded as an example where the EU can act as a collective voice; a voice that together has become a powerful example for the world to follow.

According to the EU “Adaptation strategies are needed at all levels of administration: at the local, regional, national, EU, and also the international level. Due to the varying severity and nature of climate impacts between regions within Europe, most adaptation initiatives will be taken at the regional or local levels. The ability to cope and adapt also differs across populations, economic sectors, and regions within Europe.”¹

This section will focus on two areas. The first section will concentrate on the short (2020), medium (2030), and long-term (2050) plans developed by the EU to tackle climate change. The second section will focus on the European Union Emissions Trading System (ETS), which is a cap and trade system which prices carbon.²

Short (2020)-Medium (2030)-Long (2050) Term Goals of the EU:

2020 Climate and Energy Package

Goals: 20% cut in greenhouse gases (1990 levels), 20% energy from renewable sources, and 20% in energy efficiency.

¹ *EU Climate Change Policies and Adaptation*. 2016. http://ec.europa.eu/clima/policies/adaptation/index_en.htm (accessed 03 20, 2016).

² *Ibid*

ETS covers 45% of corporate or business emissions (plants, heavy industry, and airlines). The other 55% is covered by citizens' actions (GHG emissions from areas that maintain citizens' everyday lives and standard-of-living such as agriculture and food consumption, waste, transport, and housing).

Targets are different depending on the wealth of the country. The wealthier countries have a minimum 20% target, while the least wealthy has a maximum 20% cut in emissions. Still overall, the EU must meet a 20% reduction.

The Climate and Energy Package was formulated in 2007 by the EU Commission and passed into legislation in 2009.

The EU has funded programs to develop renewable energies such as "Horizon 2020." Programs such as these create jobs while the transition is made to a green economy.³

2030 Climate and Energy Framework

Goals: 40% cut in GHG (1990 levels), 27% renewable energy, 27% energy efficiency

ETS sectors would cut emissions by 45% while other industries would cut emissions by 30% (agriculture, waste, transport, and housing)

By 2030, the EU has a goal to make renewable energy affordable throughout the EU for its citizens.

Annual capital required to meet commitments will average \$38 billion Euros per year. Fuel savings will compensate for these expenses. Residential households will be where most of the investment is given. Overall, the shift from operational costs (fuel) will transcend into capital costs (investment in green energy).⁴

2050 Low Carbon Economy

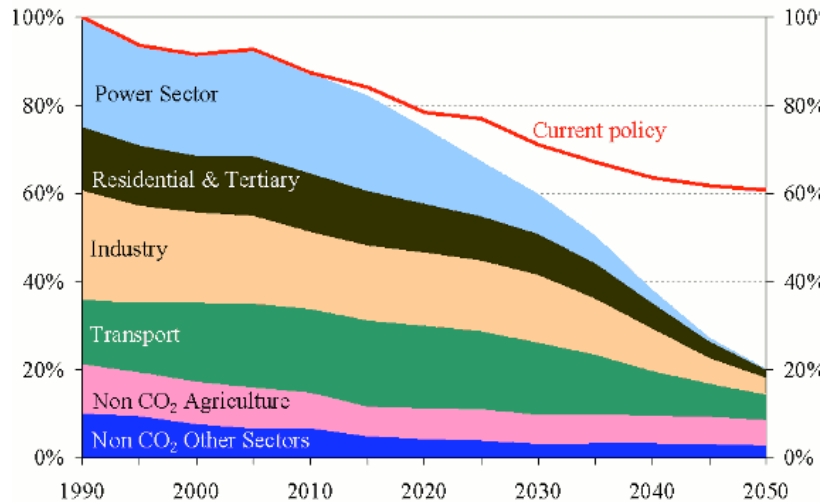
Goals: Emissions cut to 80% (1990 levels) within all sectors of the economy, should be transitioning into Green Energy.

The EU will look to transition as quickly as it can to a low-carbon economy. Prices will increase later, if it is delayed in the early-going.

All of Europe's major sectors must contribute to the decline in GHG (chart below)

³ *EU Climate policies and strategies for 2020*. 2016. http://ec.europa.eu/clima/policies/strategies/2020/index_en.htm (accessed 03 20, 2016).

⁴ *EU Climate policies and strategies for 2030*. 2016. http://ec.europa.eu/clima/policies/strategies/2030/index_en.htm (accessed 03 20, 2016).



(Source- European Union)⁵

Power: Can totally eliminate GHG by 2050. Electricity can replace fossil fuel and renewable energy.

Transport: Can reduce 60%. Hybrid and electric cars will require investment and development.

Buildings: Houses and office buildings can reduce their footprint by 90%. This includes remodeling homes with renewable sources.

Industry: Can cut emissions by 80% by 2050. Carbon capture technology will play a big part after 2035.

Agriculture: Will rise 33% by 2050. Reducing technology will be vital to reducing the GHG footprint.

Total investment by 2050: The EU will need to invest \$270 billion annually (1.5 GDP) annually over the next 40 years, to achieve these results.⁶

ETS

What is the European Union Emissions Trade System (ETS)?

The European Union Emissions Trade System System (ETS) reduces industrial greenhouse gases. It is a cap and trade system.

A cap is set on the total amount of certain greenhouse gases that can be emitted by installations covered by the system. The cap is reduced over time so that total emissions fall.

Within the cap, companies receive or buy emission allowances which they can trade with one another as needed. They can also buy limited amounts of international credits from emission-saving projects around the world. The limit on the total number of allowances available ensures that they have a value. After each year a company must surrender enough allowances to cover all its emissions, otherwise

⁵ EU Climate policies and strategies for 2050. 2016. http://ec.europa.eu/clima/policies/strategies/2050/index_en.htm (accessed 03 20, 2016).

⁶ EU Climate policies and strategies for 2050. 2016. http://ec.europa.eu/clima/policies/strategies/2050/index_en.htm (accessed 03 20, 2016).

heavy fines are imposed. If a company reduces its emissions, it can keep the spare allowances to cover its future needs or else sell them to another company that is short of allowances.⁷

Trading brings flexibility that ensures emissions are cut where it costs least to do so. A robust carbon price also promotes investment in clean, low-carbon technologies.⁸

How does ETS work?

A country is able to trade emissions in the forms of credits (which are worth money). Take Poland and Germany as an example. Each country has a cap limit on GHG that it can emit. Poland views the cap as too small, and wants to buy caps to be able to trade GHG emissions because it has heavier industry. Germany agrees to sell 20% of its GHG caps for money. Therefore Poland can now emit 120% of its original output, while Germany can emit only 80%, yet both countries emit the maximum 100% of emissions allowed for the year. The 28 EU member states can trade one with the other, yet the total amount of GHG emissions still will not exceed the designated output for the EU as a whole. To combat climate change, every year the EU reduces the number of total credits, therefore cutting emissions.

How will the ETS reduce GHG?

Each year the total threshold of GHG emissions is lowered. In 2020, emissions from sectors covered by the EU, ETS will be lowered by 21% from 2005. By 2030, the Commission proposes, it would be 43% lower.

Currently, it is the only carbon pricing system in the world where countries can trade with one another, although many of the companies within Europe are multinational companies that operate globally, therefore ETS's policies extends beyond Europe.⁹

Problems Associated with ETS¹⁰

- Oversupplied carbon credits: Some companies are receiving more credits than they actually need, creating a situation where companies can sell off carbon credits they should not have been issued in the first place
- Low carbon credit prices: Because there is too many carbon credits, the price of them is cheap, meaning companies will not have an incentive to sell these credits and instead produce more pollution
- Corruption: Some companies lobby their home countries and the EU to grant these oversupplied carbon credits. In short, industry has too much power in some cases.

⁷ European Union Climate Change Policy- ETS. 2016. http://ec.europa.eu/clima/policies/ets/index_en.htm (accessed 03 20, 2016).

⁸ *Ibid*

⁹ *Ibid*

¹⁰ Böhm, Steffen. *Why are carbon markets failing?* 2013. <https://www.theguardian.com/sustainable-business/blog/why-are-carbon-markets-failing> (accessed 11 16, 2016).

Greenhouse gases and sectors included

- **Carbon dioxide (CO₂)** from
 - Power and heat generation
 - Energy-intensive industry sectors including oil refineries, steel works and production of iron, aluminium, metals, cement, lime, glass, ceramics, pulp, paper, cardboard, acids and bulk organic chemicals
 - Commercial aviation
- **Nitrous oxide (N₂O)** from production of nitric, adipic, glyoxal and glyoxalic acids
- **Perfluorocarbons (PFCs)** from aluminium production

Picture source ¹¹

Section 2 Video(s):

[EU 2030 Climate Change Goals](#)

[Explaining ETS](#)

*To access the video, right click and open the hyperlink.

Section 2 Key Terms:

ETS- the EU ETS works on the 'cap and trade' principle. A 'cap', or limit, is set on the total amount of certain greenhouse gases that can be emitted by the factories, power plants, and other installations within a country. Countries are then able to trade credits between one another. Every year the cap is reduced so that total emissions decrease.¹²

Example-Poland and Germany are allowed to emit 200,000 combined credits of pollution per day. Poland would like to emit 125,000; therefore they can buy 25,000 from Germany. Germany would produce 75,000, Poland 125,000, but still stay at the limit of 200,000 combined.

Carbon Pricing- If a country emits GHG; you are charged a certain amount in terms of credit or money which can be traded. It is putting a price on pollution.

¹¹ European Union Climate Change Policy- ETS. 2016. http://ec.europa.eu/clima/policies/ets/index_en.htm (accessed 03 20, 2016).

¹² Ibid

Capital- Money, labour, land and machinery. If a project requires a certain amount of capital, it is total cost associated with the project.

Section 2 Activity:

While the ETS is paramount to the EU's environmental strategy, it can be very complicated to maneuver. Trading and pricing carbon is no easy feat when some countries are rich (Germany, Sweden) and some countries are poor (Greece, Eastern Europe).

Step 1:

Split the students into groups of 5. Each group will represent one of the following countries:

Germany, Italy, Greece, Hungary, Sweden

Step 2:

Each country will receive a certain amount of credits (emissions) based on their population size.

One credit is worth a million euros.

Germany=100 credits, Italy=80, Greece=60, Sweden=40 Hungary=20 **Total=300**

Step 3:

Come up with different scenarios where you have to buy and trade credits. The class must negotiate with one another to keep the total credits under **300**.

Example:

Germany has announced it will invest in a green energy project, therefore cutting its emissions by 20 credits. How will it invest in this project?

Use the following as examples:

- Germany would like to sell 20 credits by investing in green energy
- Hungary would like to increase their emissions by 5 credits
- Italy would like to increase their emissions by 10 credits
- Sweden would like to decrease their emissions by 5 credits

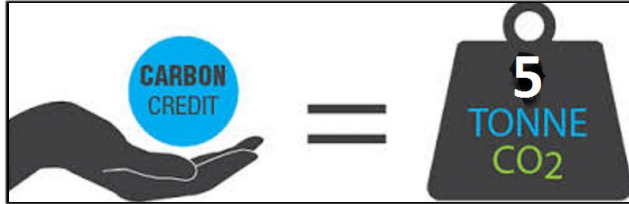
What can Greece do? Can Hungary purchase credits from Germany?

Remember 1 credit is worth a million euros!

Play around with different scenarios. Try and figure out what countries would want to sell or purchase GHG credits. Also, every year the total GHG credit diminishes and the value of them falls, countries would have an incentive to sell them off, because they would be worth less!

Teacher recommendation: Print out credit papers (below) of “5 Emissions” and money “5 million euros.” This way the kids can trade hard currency and credits when negotiating. It will make it easier for the activity to keep track instead of writing it down, and it can be interactive!

Print 300 worth of each (**60 copies**)



5 Million Euros