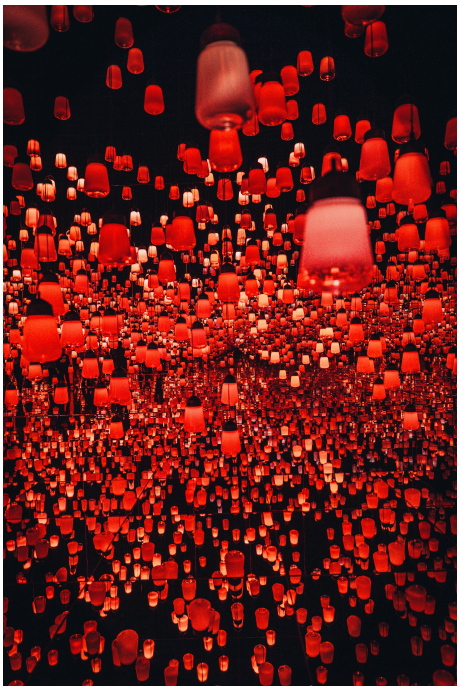

Analysis of Green Impact of Historical Events

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Report for
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Introduction

The report aims to identify specific historic events and analyse how they have impacted the production of carbon dioxide and per capita consumption of fuel.

- The first section analyses Denmark and Sudan. The historical events being examined are:
    1. Sudan is a war-torn country with the Darfur conflict raging since 2003[1]
    2. Denmark has recently passed a climate legislation committing to cut carbon emissions by 70%[2]
- The second section analyses Canada and Ireland. The historical events being examined are:
    1. Under the Paris Agreement, Canada has committed to reducing its greenhouse gas emissions by 30% below 2005 levels by 2030. [3]
    2. Ireland is obliged to cut its emissions by 80% by 2050 compared to 1990 levels, under its Climate Action and Low Carbon Development Act 2015.[4]
- The third section analyses Japan and Italy. The historical events being examined are:
    1. Japan has taken Nuclear energy as national strategic priority since 1973[5]
    2. Italy has ratified the Kyoto Protocol to reduce greenhouse gases emissions[6]

Country Denmark and Sudan

Analysis on Sudan

Sudan has been in a constant state of civil war. There are sources that blame oil companies for fueling this[7]. This section analyses such claims using Table 1.

[1] *Sudan country profile* (2019)
[2] Bellefonds (2020)
[3] *What's in Canada's climate plan* (n.d.)
[4] *National Policy Position* (n.d.)
[5] *Nuclear Power in Japan* (2021)
[6] *What is the Kyoto Protocol* (n.d.)
[7] student (2007)

Table 1: *Percentage change in Oil Usage by year in Sudan*

Year	Percentage change
2001	-20.7
2002	5.5
2003	-5.5
2004	-2.8
2005	-1.0
2006	4.4
2007	-6.0
2008	-1.2
2009	0.6
2010	-0.6
2011	-3.0
2012	8.1
2013	0.0
2014	0.3

From Table 1 we can see that in 2001 there was a slide in the usage of oil resources. It could be due to the civil war[8] but it foreshadows grim problems for the oil industry. The Darfur region conflict seems to have arrested, even possibly reversed the decline in usage. This trend supports the theory.

Analysis on Denmark

Denmark has stated that they can slash carbon dioxide emissions by 70% without compromising welfare benefits[9]. This section speculates whether this is possible. Figure 1 visualizes the possibility using a linear regression model.

[8] *Human rights watch world report 2001:Sudan* (2001)
[9] Skydsgaard (2020)

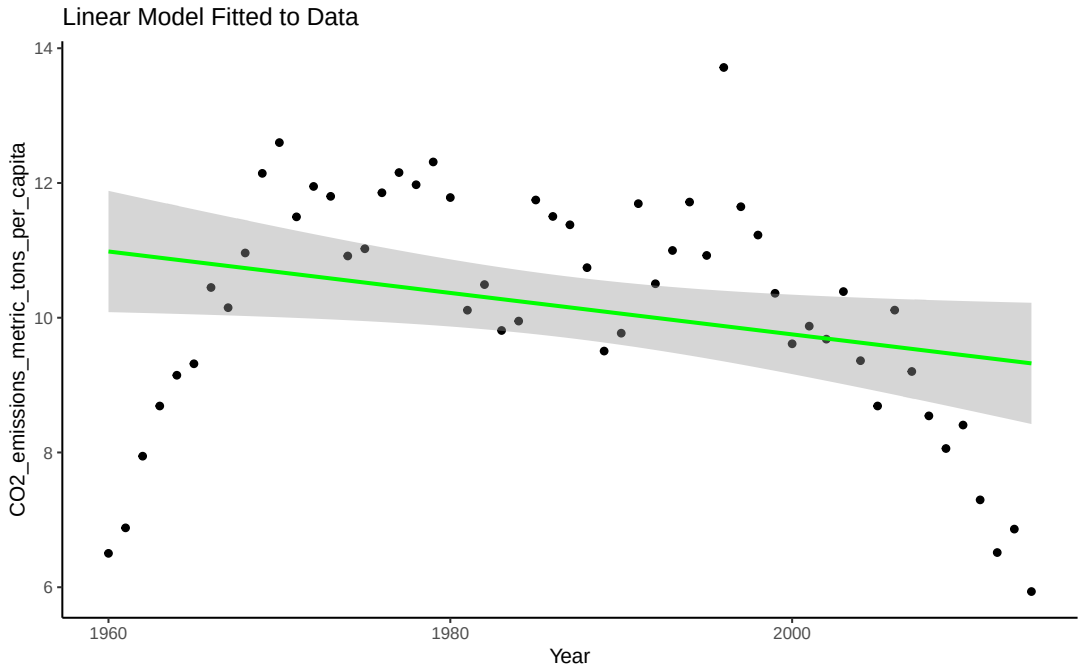

Figure 1: *Forecast of reduction of Carbon dioxide emissions by Denmark*

The linear regression model predicts that the level in 2030 would be 8.8302417. The last known value is 5.9357125 for the year 2014. The clear disparity in values shows that there needs to be significant change to governmental policies.

Country Canada and Ireland

Analysis on Canada

Canada's industrial, transportation, commercial and institutional sectors are large consumers of energy. In Canada, about 82% of emissions come from energy.[10].

Figure 2 shows the trend of energy consumption per kg of crude oil per capita over the period 2000-2015

[10] *Energy and Greenhouse Gas Emissions (GHGs)in Canada* (n.d.)

Table 2: *Amount of Energy used per kg of Crude oil per capita*

Year	Energy_use_kg_of_oil_equivalent_per_capita
2000	8265.080
2001	8056.349
2002	7993.879
2003	8341.343
2004	8455.547
2005	8422.034
2006	8239.946
2007	8213.390
2008	8194.881
2009	7797.121
2010	7788.561
2011	7911.555
2012	7733.412
2013	7743.726
2014	7897.856
2015	7631.342

Above Table 2 shows a declining trend in the per capita energy consumption, which represents that Canada is taking greener steps to become a low-carbon economy by generating cleaner, renewable energy.

Analysis on Ireland

Irish policy began to address reductions in national greenhouse gas emissions from 2005 onwards(The base year against which compliance with EU targets is measured). Ireland faced economic recession and therefore resulting reduced employment and consumption and travel.

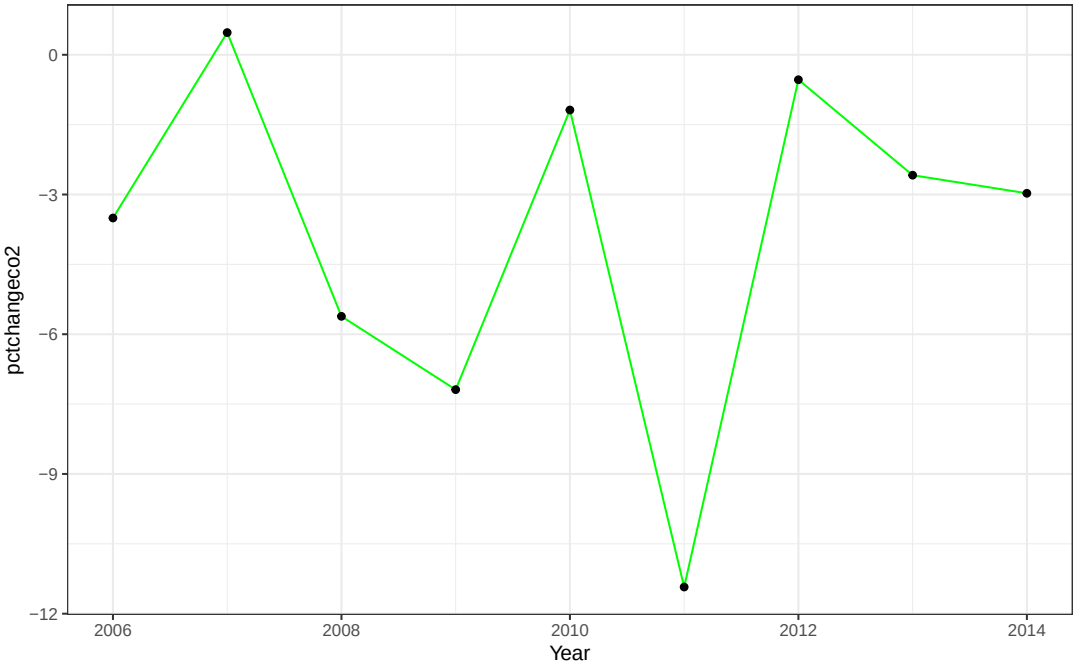

Figure 2: *Trend of Percentage change in CO2 emissions per capita over the period 2006 to 2014*

Figure 2 shows that Ireland was successful in reducing CO2 emission per capita from the period 2005 onward. It also displays a downward trend 2007 onwards due to recession.[11].

Country Italy and Japan

Analysis on Japan

After the WWII, Japan recovered quickly and rapidly expanded its industrial base. The country was highly dependent on importing oil. Later in 1970s, Japan government decided to develop nuclear powers so as to reduce dependence on imported energy[12]. Figure 3 shows the trend of oil consumption after nuclear power development started.

[11] *Climate Action Plan 2019* (n.d.)
[12] *Nuclear Power in Japan* (2021)

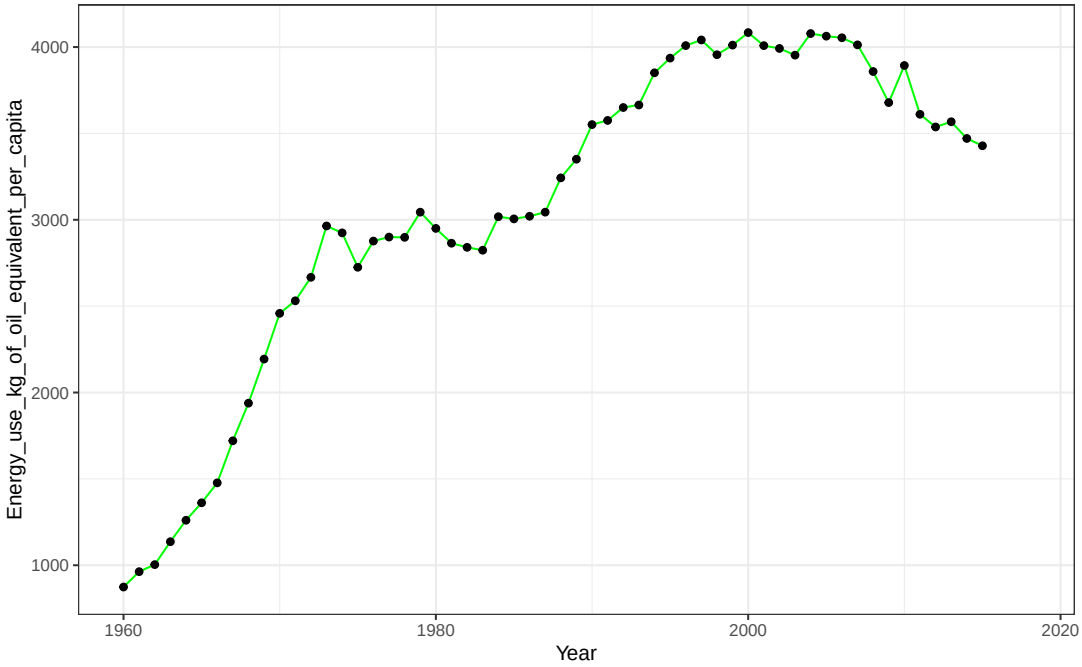

Figure 3: *The trend of oil consumption in Japan from 1970s*

From the Figure 3, Japan had an increasing trend of consumption despite the rapid development of Nuclear Power until late 1990s.

Analysis on Italy

Italy ratified the Kyoto Protocol[13] in 2002. The protocol aims to reduce greenhouse gases emissions with agreed target. The table 3 has shown the trend of carbon dioxides emissions in Italy after 2000.

Table 3: *Trend of Carbon Dioxide emission in Italy*

Year	CO2_emissions_metric_tons_per_capita	Country_Name	pct_change
2002	7.932323	Italy	0.3528448
2003	8.171751	Italy	3.0183874
2004	8.216487	Italy	0.5474459
2005	8.166090	Italy	-0.6133652
2006	8.072146	Italy	-1.1504224
2007	7.917347	Italy	-1.9176857
2008	7.601765	Italy	-3.9859594
2009	6.795651	Italy	-10.6042937
2010	6.838375	Italy	0.6286827
2011	6.702558	Italy	-1.9861000
2012	6.205414	Italy	-7.4172246
2013	5.732942	Italy	-7.6138674
2014	5.270867	Italy	-8.0599996

[13] *What is the Kyoto Protocol* (n.d.)

Based on Table 3, Italy successfully reduced the emission in the past two decades by reducing energy consumption and developing clean energy[14].

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