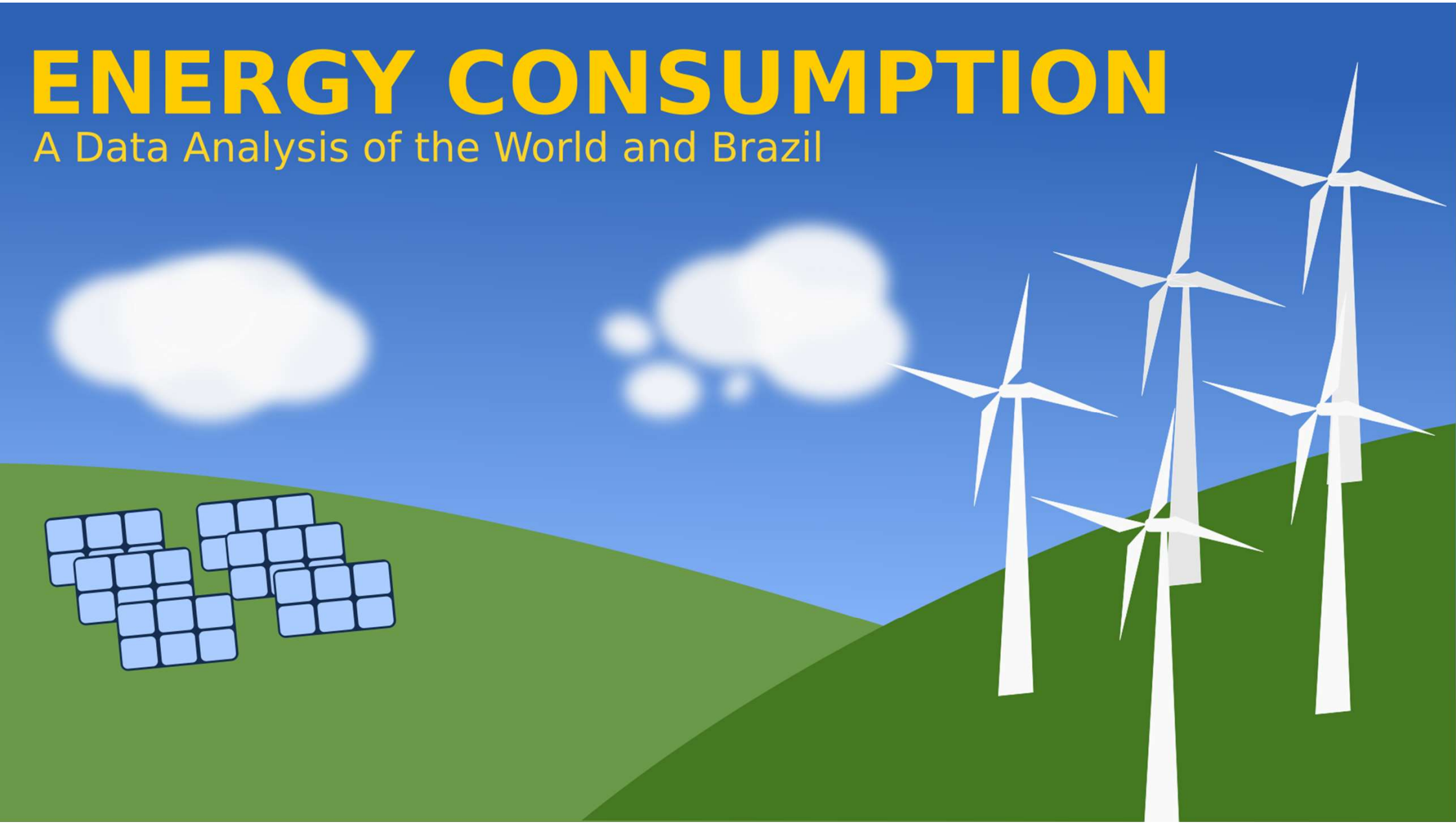
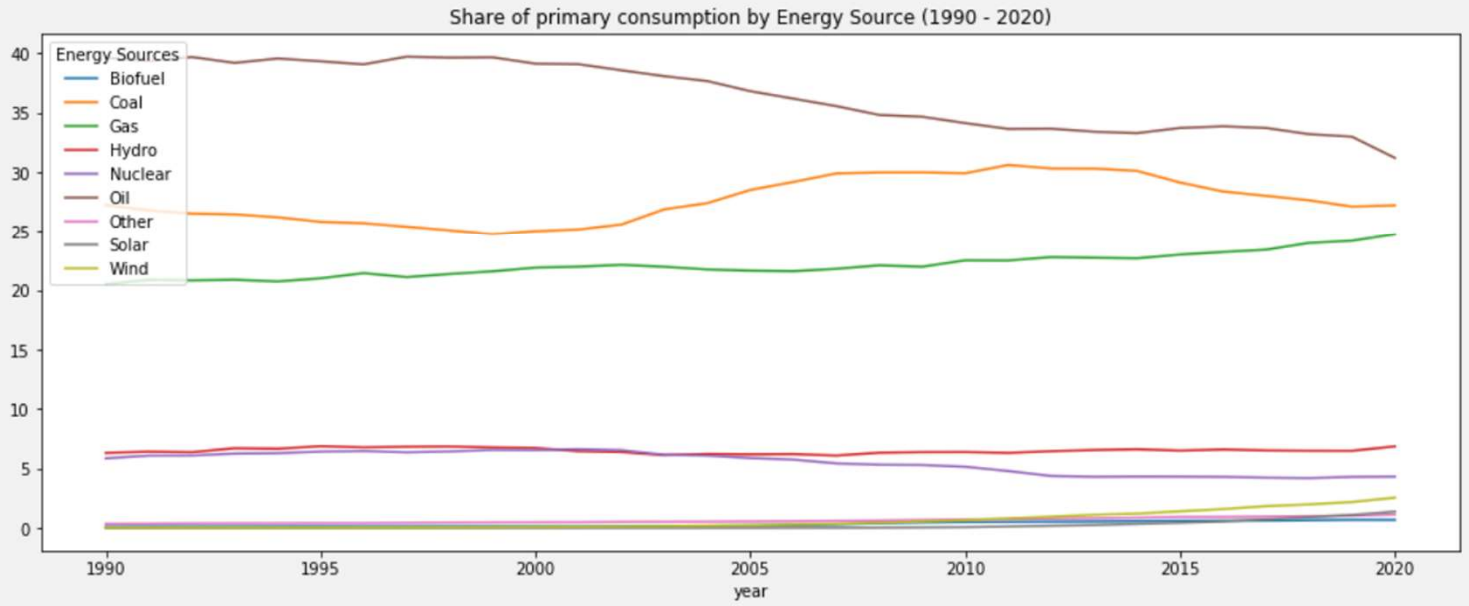
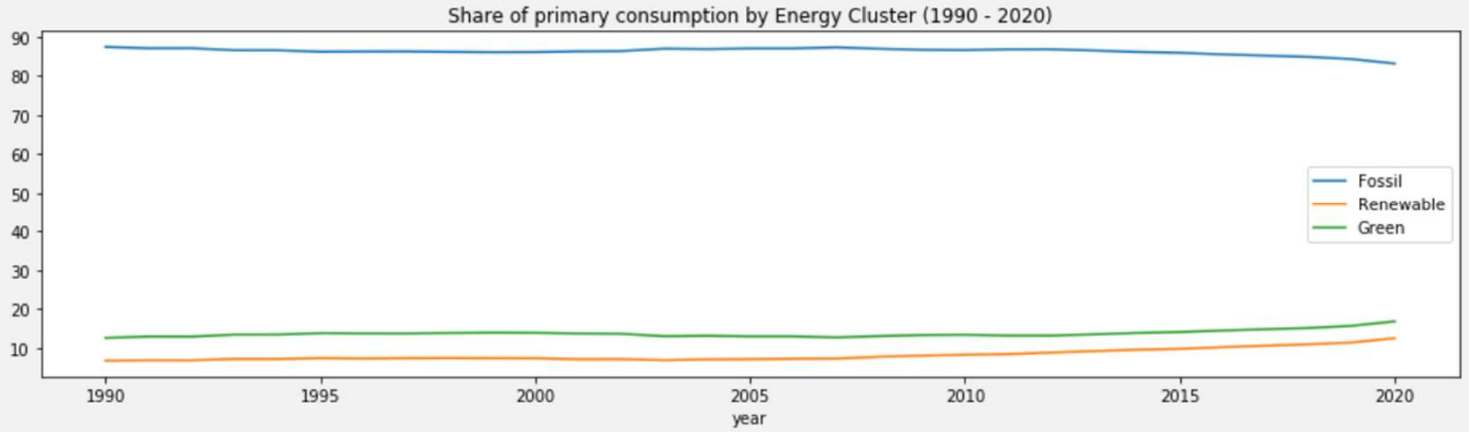

ENERGY CONSUMPTION
A Data Analysis of the World and Brazil





ENERGY CONSUMPTION

The graphs on the side show the global share of each energy source (the first graph) and then clustered*.

They were made by analysing historical data, between 1990 and 2020, of the world's consumption.

* Green energy is renewables plus nuclear.

THE HIGHS...

	country	low_carbon_share_energy
0	Iceland	82.740
1	Sweden	70.084
2	Norway	69.615
3	Switzerland	53.902
4	France	50.191
5	Finland	49.194
6	Brazil	47.185
7	Slovenia	39.087
8	New Zealand	37.312
9	Austria	36.392

Obviously, just like most other things in our society, sustainability varies greatly in importance for different countries.

Here we see those who prioritize it and those who set it aside.

Looking at this list, its easy to come up with an hypothesis as to why...

	country	low_carbon_share_energy
0	Bangladesh	0.626
1	Algeria	0.254
2	Singapore	0.253
3	Oman	0.134
4	Hong Kong	0.117
5	Kuwait	0.101
6	Saudi Arabia	0.087
7	Qatar	0.064
8	Trinidad and Tobago	0.007
9	Turkmenistan	0.006

... AND THE LOWS

I wouldn't judge you for thinking that there is **a strong correlation between a country's GDP and its share of energy that's low carbon**.

That was exactly what I tought. Turns out there isn't...

	Normalized LCSE	Normalized GDP
Normalized LCSE	1.000000	-0.062625
Normalized GDP	-0.062625	1.000000

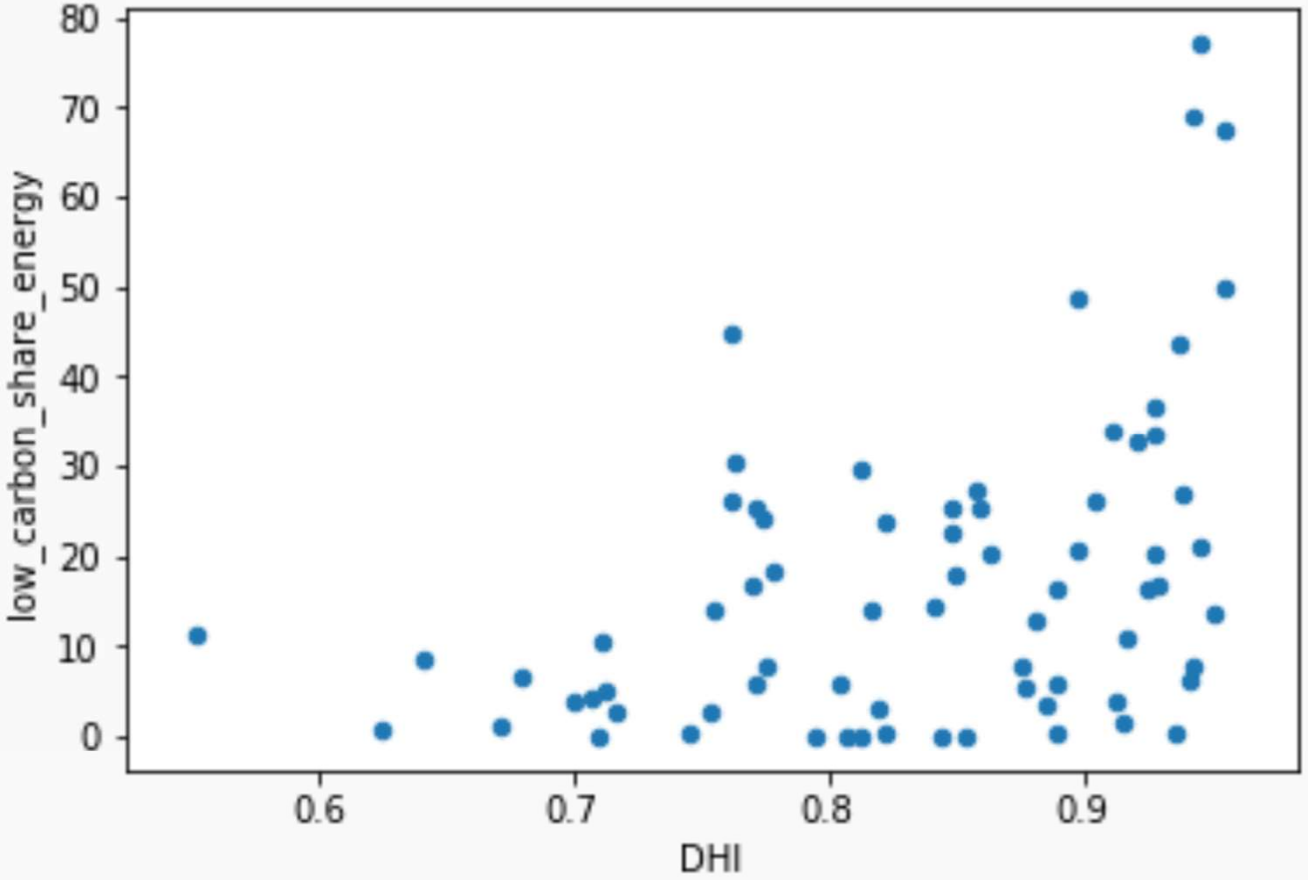
	low_carbon_share_energy	DHI
low_carbon_share_energy	1.000000	0.412523
DHI	0.412523	1.000000

That made me think that, maybe, **the secret lies in the country's DHI.**

Well, that was a better measure!

. . . . . .

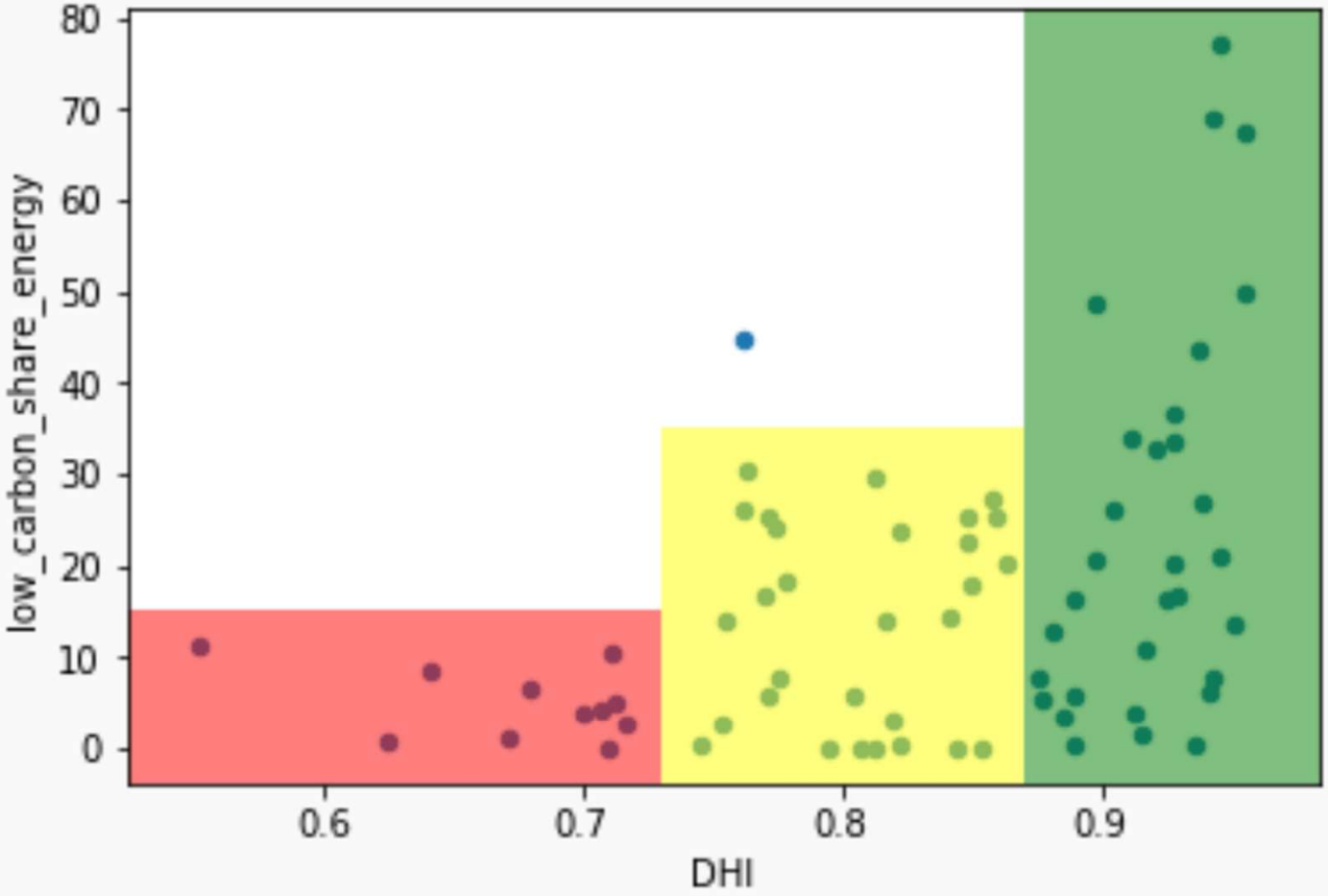
But while this correlation isn't so strong as to give me a great insight into predicting what makes a country succeed in its sustainability, seeing the graph of low carbon share energy against DHI gave me **one of the greatest insights of this whole study**, as well as helped me understand why we should **ALWAYS PLOT OUR DATA!**



It really isn't very obvious at first, but look at this graph.

It almost screams at you: *"Please, cluster me!"*.

And so I did...



Those countries that have a greater standart (DHI) of living are more prone to also care more about the environment (greater share of its primary energy being produced by low carbon sources).

Every country wants to be a better place to live in, but it has limited resources. **How good of a life it can alredy provide to its citizens, tells us how much they are willing to spend in sustainability.**

"What about that pale blue dot outside of your clusters?"

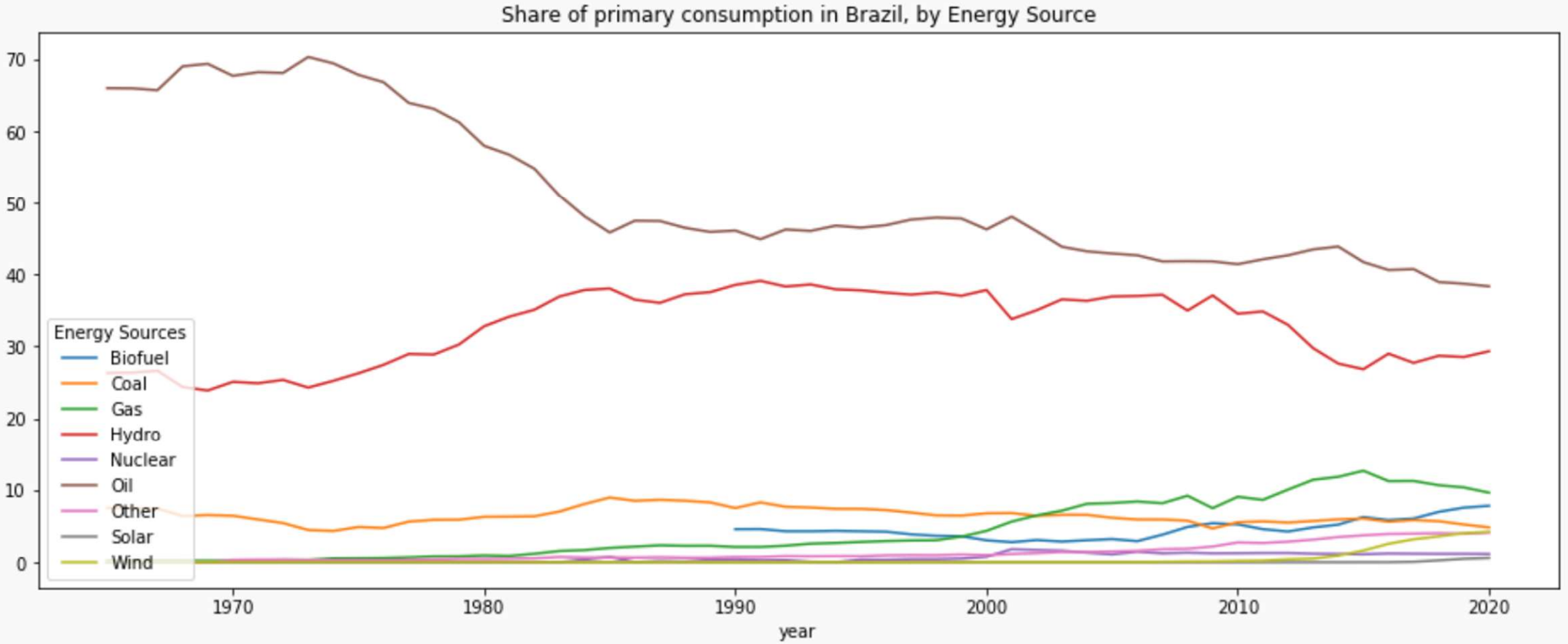
"That's Brazil!"

```
low_carbon_share_energy     44.701
DHI                          0.762
Status                      Medium
Name: Brazil, dtype: object
```

Brazil is quite an odd country in this regard, even though we're a developing country with a (newly-gained) fame of not being too woried about sustatinability, we still rank as the 7th best country in terms of low carbon energy share, with 44,7% of our energy being considered clean.

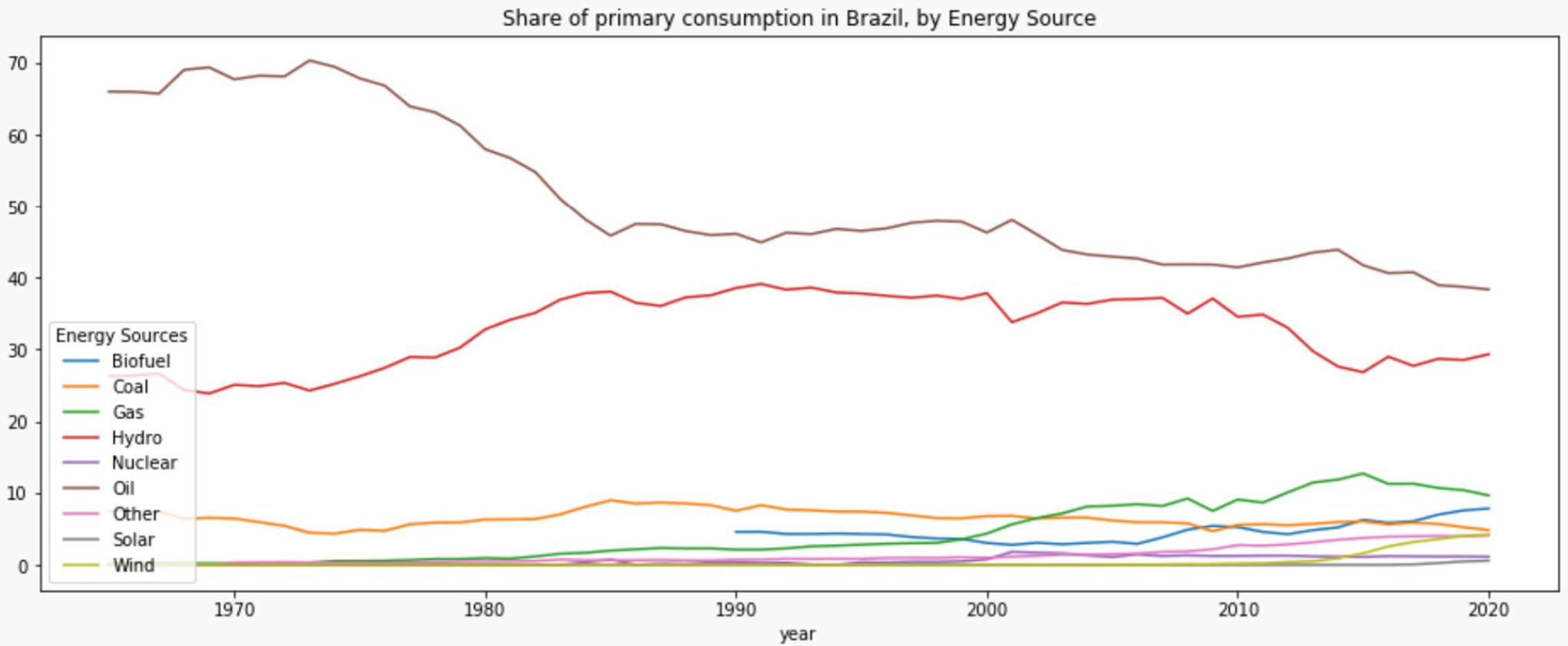
This makes us a great object of study, since we do so much, with so little!

So lets dig a little deeper on Brazilian's energy management!



The first big thing to notice: **The natural resources the country has, determines its strategy**. Having so many rivers, it's only natural that hydro would be so big in Brazil. So, yeah... a big part of being sustainable is *just sheer geographical luck*.

We can also see a rapid growth in the late 70s, early 80s, when **Itaipu** began to be built.



Now, the thing that Brazil does that **heavily influences the dynamics of energy source**, is **creating policys**, we can see how:

- Making deals with **Bolivian Gas** in the 90s, made **gas** stronger.
- Creating **PROÁLCOOL**, helped in the development of **bio-fuel** culture in the country.
- Creating **PROINFA** in the 2010s helped **Wind** to grow.

What have we learned

From a global analysis, we've learned that **a population that has its need met, is more likely to push for sustainable policys in the energy market**.

From the brazilian case, we've learned that, while the resources that are naturally available dictate how the country starts out, **where it will be in the future, depends on smart policies now** - So plan ahead!

Thank you for reading!

You can find the **jupyter notebook in my github repository**, where I've elaborated my ideas a bit more as well as have added my references for texts, ideas and data sources.

github.com/Pfalcao97

This was my final work for the Google Data Analytics program.