**Thesis: Countries inevitably have to switch to renewables in their development**

**1. Evolution of the share of renewable energy over time**

**Objective**: Check whether the share of renewable energy is increasing over time, especially in economically developed countries.

*SELECT year,*

*AVG(percentageRenew) AS AvgRenewablesShare*

*FROM shareRenewables*

*GROUP BY year*

*ORDER BY year ASC;*

**2. Correlation between GDP and the share of renewable energies**

**Objective**: To find out whether countries with higher GDP per capita have a higher share of renewable energy.

*SELECT economy.gdp\_per\_capita,*

*AVG(shareRenewables.percentageRenew) AS AvgRenewablesShare*

*FROM economy*

*JOIN shareRenewables USING (countryCode, year)*

*GROUP BY economy.gdp\_per\_capita*

*ORDER BY gdp\_per\_capita ASC;*

**3. Comparison of renewable energies and emissions**

**Objective**: To investigate whether countries with a higher share of renewable energies have lower CO₂ emissions.

*SELECT countryName,*

*AVG(percentageRenew) AS AvgRenewablesShare,*

*AVG(CO2Emissions) AS AvgCO2Emissions*

*FROM shareRenewables*

*JOIN emissions USING (countryCode, year)*

*GROUP BY countryName*

*HAVING AVG(CO2Emissions) IS NOT NULL*

*ORDER BY AvgRenewablesShare DESC;*

**4. Share of renewable energies in countries with growing economies**

**Objective**: to check whether economically growing countries are increasingly relying on renewable energies.

*SELECT countryName,*

*AVG(gdp\_growth) AS AvgGDPGrowth,*

*AVG(percentageRenew) AS AvgRenewablesShare*

*FROM economy*

*JOIN shareRenewables USING (countryCode, year)*

*GROUP BY countryName*

*HAVING AvgGDPGrowth > 0*

*ORDER BY AvgGDPGrowth DESC;*

**5. Comparison of energy imports and renewable energies**

**Objective**: To analyze whether countries that rely heavily on energy imports are switching to renewable energies more quickly.

*SELECT countryName,*

*AVG(energyImport) AS AvgEnergyImport,*

*AVG(percentageRenew) AS AvgRenewablesShare*

*FROM energyTrade*

*JOIN shareRenewables USING (countryCode, year)*

*GROUP BY countryName*

*ORDER BY AvgEnergyImport DESC;*

**6. Countries with growing populations and renewable energies**

**Objective**: To check whether countries with growing populations are also increasing the share of renewable energies in order to meet the growing energy demand.

*SELECT countryName,*

*AVG(population\_growth) AS AvgPopGrowth,*

*AVG(percentageRenew) AS AvgRenewablesShare*

*FROM countryPop*

*JOIN shareRenewables USING (countryCode, year)*

*GROUP BY countryName*

*HAVING AvgPopGrowth > 0*

*ORDER BY AvgPopGrowth DESC;*

**7. Analysis of renewable energy production by continent**

**Objective**: To determine whether certain continents are making faster progress in the transition to renewable energy.

*SELECT encompasses.continent,*

*SUM(renewablesProduction.GeoBiomass + renewablesProduction.Wind + renewablesProduction.Solar + renewablesProduction.Hydro) AS TotalRenewables,*

*AVG(shareRenewables.percentageRenew) AS AvgRenewablesShare*

*FROM renewablesProduction*

*JOIN shareRenewables USING (countryCode, year)*

*JOIN encompasses USING (countryCode)*

*GROUP BY continent;*

**8. Long-term trends in renewable energy and emissions**

**Objective**: To find out whether countries with a growing share of renewable energies reduce their emissions in the long term.

*SELECT year,*

*SUM(CO2Emissions) AS TotalCO2Emissions,*

*AVG(percentageRenew) AS AvgRenewablesShare*

*FROM emissions*

*JOIN shareRenewables USING (countryCode, year)*

*GROUP BY year*

*ORDER BY year ASC;*

**9. Focus on countries with high fossil energy consumption**

**Objective**: To investigate whether countries with high fossil energy consumption are gradually switching to renewable energies.

*SELECT countryName,*

*AVG(energyProduction - renewablesProduction.GeoBiomass - renewablesProduction.Wind - renewablesProduction.Solar - renewablesProduction.Hydro) AS AvgFossilEnergy,*

*AVG(percentageRenew) AS AvgRenewablesShare*

*FROM energyTrade*

*JOIN renewablesProduction USING (countryCode, year)*

*JOIN shareRenewables USING (countryCode, year)*

*GROUP BY countryName*

*HAVING AvgFossilEnergy > 1000 -- Filter: Länder mit hohem fossilen Energieverbrauch*

*ORDER BY AvgRenewablesShare DESC;*

**10. Leader in the transition to renewable energies**

**Objective**: Identify which countries are experiencing the largest increase in the share of renewable energy.

*SELECT countryName,*

*MAX(percentageRenew) - MIN(percentageRenew) AS RenewablesGrowth*

*FROM shareRenewables*

*GROUP BY countryName*

*ORDER BY RenewablesGrowth DESC*

*LIMIT 10;*

**11. Energy Intensity and Renewable Energy**

**Goal**: To check whether more energy-efficient countries are switching to renewable energies more quickly.

*SELECT countryName,*

*AVG(energyIntensity) AS AvgEnergyIntensity,*

*AVG(percentageRenew) AS AvgRenewablesShare*

*FROM energyEfficiency*

*JOIN shareRenewables USING (countryCode, year)*

*GROUP BY countryName*

*ORDER BY AvgEnergyIntensity ASC;*