**Carbon Tax Policy for Argentina – Structure and Assumptions**

The following is a proposal for a carbon tax policy at the household level in Argentina based on the tax policy developed by Canada and adapted to the local context.

1. **Why carbon pricing?** 
   1. More cost-efficient than regulations and subsidies for cutting emissions. [Gugler, Haxhimusa and Liebensteiner, 2021](https://www.sciencedirect.com/science/article/pii/S0095069620301285).
   2. Pigouvian Tax: internalize the social costs of externalities, creating incentives to lower emissions
2. **Carbon tax structure:**
   1. Tax applied to fossil fuel consumption at the household level:
      1. Electricity sources in Argentina: [Source](https://www.iea.org/countries/argentina/electricity)
         1. 49% from natural gas
         2. 10.3% from oil
         3. 1.8% from coal
      2. 14.7% of Argentina’s emissions come from residential sector, third largest emitter. [Source](https://www.iea.org/countries/argentina/emissions)
      3. Existing carbon Tax in Argentina:
         1. Since 2017, Ley N° 23.966. Two taxes: one on liquid fuels, based on the amount of emissions produced by each one, and the taxes carbon directly.
         2. It is an “upstream” tax: energy importers at the upstream of the supply chain are taxed, not households.
         3. Argentinian authorities tried to make the tax “neutral” at first: gas, coal and other energy sources that were not taxed before will be exempt at first and gradually included.
         4. Many exemptions since: All taxpayers were exempt from taxes on diesel and gasoil in 2018 and 2020 (Law: [source](https://www.argentina.gob.ar/normativa/nacional/ley-23966-365/actualizacion)).
   2. Carbon price per ton of CO2:
      1. Canada started at C$20 in 2019 and reached C$80 by 2032, aiming for C$170 by 2030.
      2. David: We could start with a price in USD, ARS, or EUR per ton CO2. We could run different scenarios with different prices:
         1. In 2023 the average net carbon rate was EUR 7.13 per ton of CO2. [Source.](https://www.oecd.org/content/dam/oecd/en/topics/policy-sub-issues/carbon-pricing-and-energy-taxes/carbon-pricing-argentina.pdf)
      3. Ines:
         1. Fixed lump sums actualized with inflation (Different rates: [source](https://www.argentina.gob.ar/sites/default/files/impuestos_sobre_los_combustibles_-_al_28.02.2025.pdf)). These tax rates are equivalent to a value of 10 USD/tCO2E, which is lower than what was first presented (25 USD/tCO2E). It is however, higher than neighboring countries (Chile: 5, Colombia: 5-6, México: 1-3).
         2. We could take the current tax already applied in Argentina, and then hike tax rates to assume a carbon price of 50 USD/tCO2E (similar to that of Canada), and assume that the hike in prices will be borne by consumers (they indirectly are paying the tax).

Assumption:

* We take the (49% + 10.3% + 1.8%) 61% of the total energy consumption of households and use it to estimate Tons of CO2.
* We estimate a tax rate based on the average cost of a Ton of CO2 for Argentina in 2023 of EUR 7.13. We should convert everything to USD and see what exchange we are using to see if it makes sense to the local market in Argentina.

1. **Carbon rebates:** 
   1. Canada provides a lump-sum Carbon Rebates to households based on family size, province, rural status and it is delivered quarterly. [Source.](https://www.canada.ca/en/revenue-agency/services/child-family-benefits/canada-carbon-rebate/how-much.html)

Assumption:

* Simulate uniform vs progressive rebate options: Flat per capita payment vs enhanced for low-income or rural households.
* Ines: I believe that we could do the “same” in the case of Argentina: it would take the form of a tax credit following the same structure of that of Canada’s.

1. **Behavioral Response:** 
   1. We could simulate price elasticity of fuel consumption to see the change in household fuel usage in response to price increases.

Assumption:

* Using a range of the price elasticity of fuel consumption in Argentina (Zabaloy & Viego, 2021) -0.09 and -0.76.
* Inés: We can see what the most heavily fuels taxed (the ones that create more emissions) and how much they are consumed in Argentinian households across different income quintiles. We can see if there has been a change in behavior since the tax was first introduced (2017), if the amounts consumed by lower-income households of the different energy sources has changed, and if so, determine elasticities. Then apply those elasticities to the scenario in which there is a hike in carbon prices to reach 50 USD/tCO2

1. **Distributional impact assessment:** 
   1. Net income per household = tax paid – rebate received
      1. Inés: I would include, as in the previous point, an assessment of the consumption of the different fuels/energy sources by income quintile. And consider that when calculating the tax paid.
      2. When can make two different scenarios, one with rebate, and one without.
   2. Analyze by income quintile, urban/rural, region
   3. We can report the impacts as:
      1. Change in diposable income, gini coefficient, proportion of households that are net gainers.

Assumption:

* Variables needed:
  + Income of the household: we can create quintiles
  + Region: classified as urban-rural
  + Total consumption of energy in the household
  + Use of vehicles

+ Assumption (Inés):

* Proportion of the different types of energy sources consumed by households in different income quintiles.

1. **Policy Scenarios:**
   1. Different carbon prices
   2. Different rebate schemes (flat, progressive)
   3. Behavior/no behavior responses