Towards a green economy development: the case of Argentina

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Introduction

To speak of a 'green economy' is to refer to the past, present and future of the relationships between society, the State, the economy, production processes, and the environment. The discussion between economic development, nature conservation, and the possible contrast or opposition between the two, has become a topic that has escalated the circles of debate in the academic, public, and business sectors, going from words to action.

Understanding the impact generated by pollution, the phenomenon of climate change, among others, motivates us to think and develop policies, strategies, ideas, products that tend to generate an economy, a country, and a sustainable world. The world, the economy, business, and the need for profit will not stop. But the impact on the environment and its consequences now and in the future, will not do it either. Hence, the importance in countries, regardless of their degree of development, to do something about it. There, it is necessary to extract the case of a country like Argentina.

Perspectives from the Government policies

In the last two decades, in the context of a new economic episode of global crisis, the proposal for a ‘green economy’ was adopted by the United Nations Environment Program (UNEP, 2009 and 2011) and later at the Summit World Cup Rio+20 of 2012 as a new paradigm to implement sustainable development. Then, it would be the turn of the Paris Agreement (2015) in the fight against climate change. The different governments that have exercised power in Argentina since then have been involved in the issue, although it is not yet possible to speak of a great development achieved in it.

This year, the National Renewable Cluster was launched, which consists of the creation of a productive framework for the national manufacture of equipment intended to

provide renewable energy in Argentina[1], as well as for export. In addition to highlighting the generation of jobs, the investment (close to US$ 1,000 million) seeks to substitute imports, so that nearly 250 SMEs throughout the country can participate in the production chain. It is a great initiative, which covers six provinces, seven public and private companies and institutions, with the idea that the number of participants will increase in the future.

The current government has been working within the framework of the Green Productive Development Plan, to stimulate the production of new industries in the country. This is added to other initiatives such as the development of green hydrogen and the electromobility bill, allowing in this case the transition towards the production of vehicles that do not generate carbon emissions. In the case of green hydrogen, there is great potential in its production, due to the provision of natural resources (wind and water). Currently, there is a private undertaking and an agreement project between private companies and a research and technology institution.

The Green Productive Development Plan, launched in July 2021, represents an investment of more than 10,000 million Argentine pesos through different technical and financial support tools for the development of suppliers in the green economy, the promotion of circular production processes and environmental adaptation, in more than 3,500 companies from different sectors. The Plan focuses on 4 axes: 1) promote a national industry for the green economy; 2) encourage the transition to a circular economy; 3) promote sustainable production for more competitiveness; and 4) promote a sustainable industrialization of natural resources associated with the development of national suppliers and the integration of local actors.

Among the strategic lines, progress will be made in promoting sustainable mobility, the production of Green Hydrogen, green industrialization (green steel, green copper, green paper, among others), and sustainable construction. Work will also be done to promote companies as suppliers of the energy transition, the Green SMEs Plan, the National Sustainable Mining Plan, and the National Circular Economy Plan will be carried out.

The government must deal with criticism regarding a possible contradiction between the development of the green productive agenda and the stimulus that has been given to other activities such as hydrocarbon production or metal mining. The government's position in this regard is that, for example, hydrocarbon development will allow the generation of high-wage jobs, technological development, and the generation of foreign exchange to finance sustained growth, and investments in green productive development. In the case of metal mining, it will provide the inputs to manufacture windmills, solar panels, and electric cars, which require between 5 and 6 times more copper than a conventional car. Another example is lithium, which has been talked about a lot in recent times, and which needs to be industrialized to produce the batteries that these vehicles need. On the other hand, the windmills, which will be the basis to produce green hydrogen in the province of Rio Negro.

The business situation

[1] It must also consider the RenovAr program of 2016, during the previous government, which also sought to promote the development of renewable energies in the country.

The business initiative that accompanies the proposal for a green economy in Argentina has not yet developed strongly, so there is still great potential for cooperation and business with local and foreign counterparts. Beyond the necessary investments to approach and propose an adequate offer of products and services, it is also necessary to focus on promoting the adequate and specialized human resources in this phenomenon. This will begin to be visualized and specified in sectors such as heavy industry, agribusiness, mining, and the energy world in general. It will have to see what happens with the upcoming debate in Congress on the Electric Mobility Law which, among other things, will establish that all cars must be electric from 2041. This will affect the productive matrix, the use of labor qualified work, among other topics.

Specialists have detected business opportunities related to the 'green economy' in niches found in sectors related to mechanical and electrical devices and measurement and control instruments. They are well connected to each other, which could indicate the existence of productive links and economies of scale that could be part of a virtuous circle of green development. This goes beyond the wind, solar or electromobility sectors, among others, which are already being publicly debated. The experts assure that a successful development of these products -they mention 30 items- (see Table N° 1), would imply an estimated increase in the rate of economic growth of between 0.23 and 0.4 percentage points.

Table N° 1 - 30 products to develop business

N°	**HS CODE**	**PRODUCT**	**ENVIRONMENTAL SERVICE**
1	842191	Parts of centrifuges, including centrifugal dryers.	It is used for the maintenance and repair of equipment that eliminates floating oil on water and for oil spill remediation.
2	841480	Air or gas compressors, exhaust hoods for extraction or recycling.	Air handling equipment. Transport or extraction of polluted air, corrosive gases, or dust.
3	841950	Non-domestic, non-electric heat exchange units.	Some heat exchangers are specifically designed for use in connection with renewable energy sources such as geothermal energy. Provide a cooling effect to heat exchangers in solar collector or solar system controllers to prevent overheating.
4	842199	Parts for liquid/gas filtration/purification machines.	Including belt press filters for sludge and belt thickeners.
5	902680	Equipment for measuring and	These instruments include heat meters that

		checking properties of gases and liquids.	are used to monitor and measure heat distribution from biomass or geothermal district heating systems.
6	903010	Instruments for measuring or detecting ionizing radiation.	These elements are used in order to detect the presence of ionizing radiation and may, for example, include Geiger counters which are useful for conducting studies of radioactive contamination.
7	846694	Parts and accessories of machines or tools for shaping metals.	Helps compact and compress metals, even for recycling.
8	841182	Power Gas Turbine Engines>5000 kW	Gas turbines for the generation of electrical energy from recovered landfill gas, coal mine ventilation gas or biogas (clean energy system).
9	390940	Phenolic resins, in primary forms.	Carbon capture and storage, efficient consumption of energy technologies.
10	281512	Sodium hydroxide (caustic soda) in aqueous solution.	Wastewater management.
11	841990	Parts and components for laboratory equipment and industrial heating/cooling machinery.	Parts used in the maintenance and repair of solar water heaters (etc.). that use solar thermal energy to heat water, without producing pollution.
12	842220	Machinery for cleaning/drying bottles/containers.	It is used to clean and dry bottles so they can be recycled and reused.
13	841181	Power gas turbine engines <5000 kW	Gas turbines for the generation of electrical energy from recovered landfill gas, coal mine ventilation gas or biogas (clean energy system).
14	848360	Clutches, shaft couplings, universal joints.	It is used for the initial assembly, repair, and maintenance of wind power systems.
15	841410	Bomb of void.	Air handling equipment. It is used in various environmental applications, for example flue gas desulfurization (the

			process by which sulfur is removed from combustion exhaust gases).
16	848340	Gears, ball screws, speed variators, torque converter.	Gearboxes transform the (relatively slow) rotation of wind turbine blades into the speed required to produce (renewable) electricity.
17	842129	Liquid filtering / purification machinery.	It is used to remove contaminants from wastewater, by chemical recovery, oil/water separation, screening, or filtering.
18	842382	Weighing machinery with a capacity of 30 to 5000 kg.	Wastewater management.
19	841360	Rotary positive displacement pumps.	For handling and transport of wastewater or sludge during treatment.
20	841350	Positive displacement reciprocating pumps.	For handling and transport of wastewater or sludge during treatment.
21	400259	Acrylonitrile-butadiene rubber (NBR) except as latex.	Solid and hazardous waste management and recycling systems.
22	847982	Machines for mixing, kneading, grinding, etc.	It is used to prepare waste for recycling; wastewater mixing during treatment; preparation of organic waste for composting.
23	841370	Centrifugal pumps.	For handling and transport of wastewater or sludge during treatment.
24	848110	Pressure reducing valves.	For handling and transport of wastewater or sludge during treatment.
25	842833	Type of continuous action conveyor or goods elevator.	For transporting waste around the treatment plant.
26	850163	AC generators, with a power of 375-750 kVA	It is used in conjunction with boilers and turbines (also listed here in HS 840681 and 840682) to generate electricity in renewable power plants. These turbines and generators are used in combination to produce electricity from renewable fuels (e.g., biomass).

27	730431	Iron/non-alloy steel pipe, drawn/cold-rolled.	Carbon capture and storage, efficient consumption of energy technologies. These elements facilitate the delivery of drinking water and sanitation.
28	761290	Barrels, drums, boxes, etc. aluminum, capacity <300 liters	Containers of any material, in any form, for liquid or solid waste, including municipal or hazardous waste.
29	850162	AC generators, with an output of 75-375 kVA	It is used in conjunction with boilers and turbines (also listed in HS 840681 and 840682) to generate electricity in renewable power plants. These turbines and generators are used in combination to produce electricity from renewable fuels (e.g., biomass).
30	841090	Parts of hydraulic turbines and water wheels.	Hydroelectric power generation does not produce greenhouse gas emissions.

Source: Palazzo et al. (2021)

Primary production in Argentina makes a large amount of biomass available, giving it a comparative advantage for the implementation of the *bioeconomy*. This consists of the sustainable production of goods and services through the use or transformation of biological resources. Therefore, they constitute a sustainable alternative to solutions based on fossils, chemical products, plastics, and other polluting sectors. Fungi-based projects are often mentioned as examples. Fungi are great decomposers and binders that allow a large amount of biomass and waste to be recycled, avoiding the use of chemical glues. These are no longer products generated in production lines to be 'cultivable products', which implies an important change in the production processes.

Some of the companies that are already innovating in these projects are Grown Bio and Ecovatie, which specialize in the production of packaging based on mushroom mycelium. There are also companies like Mycoworks and Mycotech that are dedicated to animal-free leather production. For its part, Atlastfood is innovating in the world of meat by producing a substitute for bacon based on aerial mycelium, which would make it possible to replace pig farms with mushrooms in vertical farms. Fungicides also can be found such as the one developed by the Argentine company Rizobacter based on the trichoderma fungus as a solution for diseases that affect crops.

Conclusion

The ‘green economy’ in Argentina poses the challenge of advancing in environmental sustainability but being accompanied by macroeconomic sustainability and social sustainability. For example, Argentina must prepare a national green hydrogen strategy because of the collaborative work of industry, academia, civil society, and the public sector. To achieve this goal, clear and transparent regulatory signals must be designed, and strong leadership must be generated by the State. Furthermore, fiscal policy (incentives) and monetary policy (credit) must prioritize the change in the productive matrix. In addition, if public policy is aimed at the development of green sectors, it would be promoting the complexity of the export basket and, therefore, the probability that aggregate economic growth will accelerate.

If the idea in the future is to replace imports of products related to the green economy, the State must then guarantee a business climate conducive to being a receptacle for foreign investment, where associations between local companies and those from other countries contribute to development of the sustainable productive ecosystem, but that does not stop pursuing business profitability. Towards this goal, the Green Productive Development Plan, and the National Renewable Cluster, which are the latest initiatives from the public sector, can serve as a guide to accompany the objectives to be achieved.

References

- Anlauf, A. (2016). Greening the imperial mode of living? Socio-ecological (in) justice, electromobility, and lithium mining in Argentina. In *Fairness and justice in natural resource politics* (pp. 176-192). Routledge.
- Argentina inició su participación en la conferencia de cambio climático de Naciones Unidas (December 02, 2019). *Argentina*. https://www.argentina.gob.ar/noticias/argentina-inicio-su-participacion-en-la-conferencia-de-cambio-climatico-de-naciones-unidas
- Bioeconomía, TIC y energías renovables: sendero para un Estado efectivo (December 17, 2021). *Agrositio*. https://www.agrositio.com.ar/noticia/220470-bioeconomia-tic-y-energias-renovables-sendero-para-un-estado-efectivo
- Boyadjian, C. (November 11, 2021). Después del etiquetado frontal se viene la "certificación verde" de alimentos. *El Cronista*. https://www.cronista.com/economia-politica/despues-del-etiquetado-frontal-se-viene-la-certificacion-verde-de-alimentos/
- Discurso del ministro Kulfas: lanzamiento del Clúster Renovable Nacional (January 19, 2022). *Argentina*. https://www.argentina.gob.ar/noticias/discurso-del-ministro-kulfas-lanzamiento-del-cluster-renovable-nacional
- Ibañez, M., María, M.; García Curtit, J. (2020). Programa RenovAr: un análisis de mercado a través del paradigma estructura-conducta-desempeño; *In Energía, innovación y ambiente para una transición energética sustentable: retos y perspectivas*. Universidad Nacional del Sur, 601-621. https://ri.conicet.gov.ar/handle/11336/128243
- Koop, F. (March 24, 2021). Mariana Conte Grand: "Para ningún gobierno debería ser tabú trabajar sobre economía verde". *El Cronista*. https://www.cronista.com/responsabilidad/para-ningun-gobierno-deberia-ser-tabu-trabajar-sobre-economia-verde/

- Kulfas lanzó el Plan de Desarrollo Productivo Verde (July 13, 2021). *Argentina*. https://www.argentina.gob.ar/noticias/kulfas-lanzo-el-plan-de-desarrollo-productivo-verde
- La neutralidad en carbono no es una oportunidad, sino una responsabilidad conjunta (November 09, 2021). *Agrositio*. https://www.agrositio.com.ar/noticia/219783-la-neutralidad-en-carbono-no-es-una-oportunidad-sino-una-responsabilidad-conjunta
- López Calvo, L. (2022). Empleo verde: qué es y cuál es el proyecto insignia que debatirá Argentina. *El Cronista*. https://www.cronista.com/economia-politica/empleo-verde-que-es-y-cual-es-la-situacion-en-argentina/
- Mena, M. (July 08, 2021). Eco-ladrillos: Una solución sustentable y eco-friendly al problema del déficit habitacional. https://www.perfil.com/noticias/reperfilar/eco-ladrillos-estan-hechos-con-material-reciclado-y-sirven-para-la-construccion.phtml
- Palazzo, G.; Feole, M.; Gutman, M.; Bercovich, S.; Pezzarini, L.; & Lourenco, M.B.D. (2021). El potencial productivo verde de la Argentina: Evidencias y propuestas para una política de desarrollo. *Fundar*. https://www.fund.ar/wp-content/uploads/2021/09/El-Potencial-Productivo-Verde-de-la-Argentina.pdf
- Saurí, M. (September 19, 2021). El tren de la economía verde. *Perfil*. https://www.perfil.com/noticias/opinion/el-tren-de-la-economia-verde.phtml
- Seoane, J. (2017). Obama, Macri y la economía verde. La neoliberalización de la cuestión ambiental. *Herramienta*. https://www.herramienta.com.ar/obama-macri-y-la-economia-verde-la-neoliberalizacion-de-la-cuestion-ambiental
- Torres, J. F. (2017). Economía verde: la nueva ola del ambientalismo neoliberal. *Cuadernos De Coyuntura*, 1:85–88. https://revistas.unc.edu.ar/index.php/CuadernosConyuntura/article/view/18765
- Zabaloy, M.F.; Guzowski, C.; & Didriksen, L. (2021). Hidrógeno verde en Argentina: desarrollo actual y perspectivas a futuro. *Energía y desarrollo sustentable*. 6:35-51. https://www.researchgate.net/profile/Maria-Zabaloy-3/publication/355049465_Hidrogeno_verde_en_Argentina_desarrollo_actual_y_perspectivas_a_futuro/links/615b75a49911cb6c9dd95cea/Hidrogeno-verde-en-Argentina-desarrollo-actual-y-perspectivas-a-futuro.pdf